

SSE Tarbert Next Generation Power Station

Environmental Impact Assessment Report (EIAR)
Volume I
Chapter 15 Population and Human Health

SSE Generation Ireland Limited

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15. Population and Human Health

15.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) describes the potential effects of the Proposed Development on population and human health.

This chapter defines the study area, the methodology used for developing the baseline and impact assessment, provides a description of the baseline environment in relation to population and human health, and presents the findings of the impact assessment.

Impacts on population and human health have potential to arise from various aspects of the Proposed Development. The following chapter provides an assessment of impacts on:

- Land use.
- Access and severance between local residents and community resources.
- Economic activity and employment.
- Human health and wellbeing.

Many of the potential population and human health effects of the Proposed Development arise from air quality, noise and vibration, visual and traffic effects. Therefore, the human health impact assessment (HIA) relies on the assessments and draws on the findings of the following chapters as necessary to assess the impacts on human health: Chapter 7 (Air Quality), Chapter 10 (Landscape and Visual), Chapter 11 (Noise and Vibration), Chapter 14 (Traffic and Transport) and Chapter 17 (Climate).

This is consistent with the EPA EIAR Guidelines (2022) *'the assessment of impacts on population and human health should refer to the assessments of those factors under which human health effects might occur, as addressed elsewhere in this EIAR e.g., under the environmental factors of air, water, soil etc.'*

Full details on the background and Site history are provided in Chapter 4 (Existing Site), and details of the Proposed Development are provided in Chapter 5 (Description of the Proposed Development) and the Planning Statement submitted with this planning application.

15.2 Legislation, Policy, and Guidance

This section will provide an overview of the relevant legislation, planning policy, and technical guidance relevant to the assessment. This chapter has been prepared in accordance with the following:

- Environmental Protection Agency (EPA) (2022). Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.
- European Commission (EC) (2017). Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report.
- Highways England (2020). Design Manual for Roads and Bridges: Population and Human Health.

- Institute of Public Health (2021). Health Impact Assessment Guidance: A Manual.
- Institute of Environmental Management and Assessment (IEMA) (2017). Health in Environmental Impact Assessment 2017.
- IEMA (2022). Determining Significance for Human Health in Environmental Impact Assessment.
- International Association for Impact Assessment (IAIA) (2019). Addressing Human Health in Environmental Impact Assessment As per EU Directive 2011/92/EU amended by 2014/52/EU CONSULTATION DRAFT November 2019.
- European Public Health Association (EUPHA) (2019). Addressing Human Health in Environmental Impact Assessment.
- National Health Service (NHS) (2019). Healthy Urban Development Unit (HUDU) guidance (Fourth Edition).

15.2.1 National Policy

National Planning Framework: Project Ireland 2040

The *National Planning Framework (NPF) - Project Ireland 2040*¹ is the Government's high-level strategic plan for shaping the future growth and development of Ireland to the year 2040. It is a framework to guide public and private investment, to create and promote opportunities for the people of Ireland, and to protect and enhance the environment.

Chapter 6: People, Homes and Communities of the *National Planning Framework: Project Ireland 2040* sets out the following themes of relevance to Population and Human Health:

- Quality of Life and Place.
- Healthy Communities.
- Diverse and Inclusive Ireland.
- Age Friendly Communities.
- Childcare, Education and Lifelong Learning; and
- Housing.

Within Section 6.2: 'Healthy Communities', it is noted how specific health risks, such as heart disease, respiratory disease, mental health, obesity, and other injuries, can be influenced by spatial planning. It is also suggested that by taking a whole-system approach to addressing the many factors that impact on health and wellbeing and which contribute to health inequalities, and by empowering and enabling individuals and communities to make healthier choices, it will be possible to improve health outcomes, particularly for the next generation of citizens.

The following objectives are of relevance to this population and human health assessment:

¹ GOI (2018). *National Planning Framework: Project Ireland 2040*.

- **National Policy Objective 26:** “Support the objectives of public health policy including Healthy Ireland and the National Physical Activity Plan, through integrating such policies, where appropriate and at the applicable scale, with planning policy”.

Healthy Ireland Framework 2019-2025

The Healthy Ireland Framework² sets out a vision to create “a Healthy Ireland, where everyone can enjoy physical and mental health and wellbeing to their full potential, where wellbeing is valued and supported at every level of society and is everyone’s responsibility”.

The Healthy Ireland Framework is designed to bring about real, measurable change and is based on an understanding of the determinants of health. Health and wellbeing are affected by all aspects of a person’s life: economic status, education, housing, the physical environment in which people live, and work.

The Healthy Ireland Framework was first launched in 2013 and presents four central goals for improved health and well-being:

- Increase the proportion of people who are healthy at all stages of life.
- Reduce health inequalities.
- Protect the public from threats to health and well-being; and
- Create an environment where every individual and sector of society can play their part in achieving a healthy Ireland.

The Healthy Ireland Framework states that:

“the area of environment and health, in its broadest sense, comprises those aspects of human health, disease, and injury that are determined or influenced by factors in the environment. This includes not only the study of the direct pathological effects of various chemical, physical, and biological agents, but also the effects on health of the broad physical and social environment, which includes housing, urban development, land use and transportation, industry, and agriculture”.

As such, the Healthy Ireland Framework reaffirms the need for the Proposed Development to be considered in respect of its impacts on health.

15.2.2 Local Planning Policy

The Proposed Development is located in Co. Kerry; however, a review of neighbouring county’s development plans (Limerick and Clare) was undertaken due to the proximity of Tarbert to its neighbouring counties (within 5km) and in order to identify any potential constraints, none were identified.

Kerry County Development Plan 2022-2028

The Kerry County Development Plan 2022-2028 (Kerry CDP) sets out policies and objectives to provide for the proper planning and sustainable development of Co. Kerry. Policies and objectives cover a

² Department of Health (2019). *Healthy Ireland Framework 2019-2025*.

number of subjects such as air, noise, and light pollution, but also economic development and future growth. The Kerry CDP also identifies 205 workers in Tarbert but only 190 jobs, and, in line with the 'Shannon Integrated Framework Plan' (SIFP) (2013), recognises the Tarbert-Ballylongford Landbank for its potential as an Energy Hub and industrial development with associated employment creation opportunities, within which the Proposed Development is situated. Relevant policies set out by the Kerry CDP include:

- Planning for the Future Growth and Development of Rural Areas:
 - **KCDP 5-1:** *Facilitate the development of the rural economy by supporting a sustainable and economically efficient agricultural and food sector, together with forestry, fishing and aquaculture, energy and extractive industries, the bio-economy and diversification into alternative on-farm and off-farm activities, harnessing technology and opportunities for remote working, while at the same time noting the importance of maintaining and protecting the natural landscape and built heritage which are vital to rural tourism.*
- Healthy Communities:
 - **KCDP 6-11:** *Support the objectives of public health policy including Healthy Ireland / Kerry and the National Physical Activity Plan.*
- Sustainable Economic Development and Climate Action:
 - **KCDP 9-1:** *Ensure that a sustainable approach is taken to enterprise development and employment creation across all sectors of the Kerry economy.*
- Strategic Economic Objectives:
 - **KCDP 9-4:** *Facilitate and support Co. Kerry's economic recovery through the sustainable implementation of Co. Kerry's COVID-19 Economic Recovery Plan and the emerging Kerry Local Economic and Community Plan, focusing on a transition to a low carbon and digital economy [assisted by the encouragement of Smart Villages] and through sustainably expanding the county's economic sectors, increasing innovation and research, supporting entrepreneurship, the creation of new and expansion of existing businesses, product exports, access to new markets and the development of intellectual property in conjunction with the higher education sector and research centres.*
 - **KCDP 9-11:** *Encourage employment growth in rural towns to support the population of these towns and their wider rural catchments.*
- Shannon Estuary:
 - **KCDP 9-23:** *Support and promote the delivery of the Strategic Development Locations (SDLs) as set out in the SIFP for the Shannon Estuary subject to the implementation of mitigation measures outlined in the Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA) undertaken on SIFP and zoned in the Local Authority Development Plans.*

- **KCDP 9-25:** *Promote and facilitate the sustainable development of the Tarbert-Ballylongford landbank for industry, utilising the presence of deep water, existing infrastructure, natural resources, and waterside location to harness the potential of this Strategic Location. Proposals for marine related industry, general industrial development, and particularly those industries creating a synergism with existing uses and contributing to the development of a strategic energy hub at this location will also be encouraged.*
- **KCDP 9-26:** *Safeguard the role and function of the Power Plant Hub at Tarbert, including the National Oil Reserves Agency (NORA) Strategic Oil Reserves Plant, as a key driver of economic growth in the Region, encouraging its sustainable growth and diversification, in accordance with Regional and National Energy Objectives.*
- Air and Noise Pollution:
 - **KCDP 11-31:** *Improve and maintain good air quality and support measures to prevent harmful effects on human health and the environment in our urban and rural areas.*
 - **KCDP 11-36:** *Ensure that any application with the potential to create noise nuisance is appropriately assessed and that suitable measures to mitigate any nuisance are proposed and implemented.*
- Light Pollution:
 - **KCDP 11-42:** *Require proposals for development that include the provision of external lighting, to clearly demonstrate that the lighting scheme is the minimum needed for security and working purposes and also to ensure that external lighting and lighting schemes are designed so that the incidence of light spillage is minimised ensuring that the amenities of adjoining properties, wildlife and the surrounding environment are protected.*
- Landscape Sensitivity:
 - **KCDP 11-77:** *Protect the landscapes of the County as a major economic asset and an invaluable amenity which contributes to the quality of people's lives.*

Limerick Development Plan 2022–2028

The Limerick Development Plan (Limerick DP) 2022–2028 sets out policies and objectives to provide for the proper planning and sustainable development of Co. Limerick; relevant policies and objectives include:

- Settlement Strategy:
 - **Policy CS P7:** *It is a policy of the Council to: (c) Seek to promote the creation of sustainable places and healthy communities, while ensuring that development occurs at an appropriate pace and that infrastructure is delivered in tandem to support this growth.*
- Spatial Strategy:
 - **Objective CGR O11 – Level 2: Key Town Newcastle West:** *It is an objective of the Council to: b) Support and promote the role of Newcastle West as a strategically located*

urban centre of significant influence in a sub-regional context. In particular, it is an objective to promote the opportunity for inter- regional collaborations across county boundaries with Abbeyfeale, Listowel and Rathkeale and locations identified in the Strategic Integrated Framework Plan for the Shannon Estuary, which offer collective strengths and potential for project partnerships to drive sustainable economic growth in the West Limerick/ North Kerry area.

- Shannon Estuary
 - **Objective ECON O56 – Strategic Integrated Framework Plan:** *It is an objective of the Council to support and facilitate the Strategic Integrated Framework Plan for the Shannon Estuary.*
- Economy and Employment:
 - **Policy ECON P1 – Strong Economy:** *It is a policy of the Council to support the review and implementation of Limerick 2030 – An Economic and Spatial Plan to guide the economic, social and physical renaissance of Limerick City Centre and the wider County / Mid-West Region.*
 - **Policy ECON P6 – Enterprise and Employment Development Opportunities:** *It is a policy of the Council to promote and facilitate opportunities for sectoral development in Limerick, to increase productivity, create employment and to diversify the economy and ensure future economic resilience.*
- Air Quality:
 - **Policy EH P6 – Water and Air Quality:** *It is a policy of the Council to ensure that water and air quality shall be of the highest standard, to ensure the long term economic, social and environmental well-being of Limerick's resources. The World Health Organisation Air Quality Guidelines will be the basis for the air quality guidance in Limerick.*
 - **Objective EH O27 – Improvement of Air Quality:** *It is an objective of the Council to improve air quality and help prevent people being exposed to unacceptable levels of pollution in Limerick, through the support of sustainable modes of transport, renewable energy, promotion of energy efficient buildings and homes and urban greening.*
 - **Objective EH O29 – Air Quality during Construction:** *It is an objective of the Council to protect environmental quality and implement site appropriate mitigation measures during construction and demolition phases of a development, with respect to air quality, including dust.*
- Noise Pollution:
 - **Policy EH P7 – Environmental Noise:** *It is a policy of the Council to proactively manage environmental noise, where it may have a significant adverse impact on the health and quality of life of communities in Limerick and to support the aims of the Environmental Noise Regulations, through the development and implementation of Noise Action Plans.*

- **Objective EH O21 – Noise and Vibration during Construction and at Open Sites:** *It is an objective of the Council to protect the quality of the environment against the effects of noise and vibration, by implementing site appropriate mitigation measures during the construction and demolition phases of development.*
- **Objective EH O22 – Commercial and Industrial Noise:** *It is an objective of the Council to prevent members of the public being significantly adversely affected by environmental noise from commercial and industrial noise activities.*
- Light Pollution:
 - **Objective EH O24 – Light Pollution:** *It is an objective of the Council to ensure that the design of external lighting schemes minimise the incidence of light spillage or pollution in the immediate surrounding environment. In this regard, developers shall submit lighting elements as part of any design, with an emphasis on ensuring that any lighting is carefully directed, not excessive for its purpose and avoids light spill outside the development and where necessary will be wildlife friendly in design.*

Clare County Development Plan 2023–2029

The Clare County Development Plan (Clare CDP) 2023–2029 sets out objectives for the different policy areas addressed by the Clare CDP; development plan objectives relevant to the Proposed Development include:

- Shannon Estuary
 - **Development Plan Objective CDP6.10:** *It is an objective of Clare County Council: a) To proactively implement the Strategic Integrated Framework Plan for the Shannon Estuary including the mitigation measures identified in Volume 9 of this Plan; and b) To support the promotion, marketing and seeking of financial and expertise support for the Strategic Integrated Framework Plan for the Shannon Estuary and specific projects emerging there from.*
- Noise Pollution:
 - **Development Plan Objective CDP11.40:** *It is an objective of Clare County Council: a) To promote the pro-active management of noise where it is likely to have significant adverse impacts on health and the environment.*
- Air Quality:
 - **Development Plan Objective CDP11.41:** *It is an objective of Clare County Council: a) To achieve and maintain good air quality and help prevent harmful effects on human health and the environment in our urban and rural areas.*
- Integrated Development of the Shannon Estuary:
 - **Development Plan Objective CDP12.2:** *It is an objective of the Clare County Council: (a) To co-operate with the relevant agencies to facilitate, encourage and promote development and economic growth and employment in environmentally sustainable*

areas along the Shannon Estuary, by implementing the Strategic Integrated Framework Plan (SIFP) for the Shannon Estuary.

Listowel Municipal District Local Area Plan 2020-2026

The Municipal District Local Area Plan (LAP) is part of a systematic hierarchy of land use and spatial plans including Project Ireland 2040 – National Planning Framework, the Regional Planning Guidelines for the South-West 2010-2022, the draft Regional Spatial and Economic Strategy for the Southern Region and the Kerry CDP 2015-2021. In order to develop policies and objectives that are appropriate to the needs and future potential of the settlements of the Listowel Municipal District, this LAP has framed its overall development strategy within the context of the settlement hierarchy set out in the Kerry CDP 2015-2021. The overall strategic development objectives relevant to the Proposed Development include:

- Overall Development Strategy:
 - **OS-02:** *Prioritise the regeneration and renewal of the Municipal District's towns, villages and rural nodes in order to support vibrant and strengthened communities and drivers of economic growth. In line with this the renewal of underutilised buildings will be emphasised, while all new future residential and retail development shall be located in the town / village where lands have been identified for their use.*
 - **OS-05:** *Provide for the development of the area in a manner which is environmentally sustainable and protects its social, cultural, environmental, and economic assets for future generations.*
 - **OS-06:** *Facilitate the development of local employment opportunities in locations compatible with surrounding uses.*
 - **OS-08:** Support the sustainable development of the land zoned within the Tarbert / Ballylongford area in accordance with the policies and objectives of the SIFP and the KCDP.
- Natural Environment:
 - **LS-NE-03:** *Support KCC's Climate Change Adaption Strategy 2019 – 2024.*

15.2.3 Other Legislation, International Policy, Standards and Guidance Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2022)

The 2014 amendment to the 2011 EIA Directive (2014/52/EU) directs that population and human health factors be assessed in an Environmental Impact Assessment (EIA).

The 2022 EPA Guidelines state that: *“while no specific guidance on the meaning of the term Human Health has been issued in the context of Directive 2014/52/EU, the same term was used in 3.3.6 the SEA Directive (2001/42/EC). The Commission's SEA Implementation Guidance states ‘The notion of human health should be considered in the context of the other issues mentioned in paragraph (f)’”*. Paragraph (f) (of Annex I of the SEA Directive) lists the environmental factors including soils, water, landscape, air etc.).

The 2022 EPA Guidelines also note that in an EIAR: *“the assessment of impacts on population & human health should refer to the assessments of those factors under which human health effects might occur, as addressed elsewhere in the EIAR e.g., under the environmental factors of air, water, soil, etc.” and that “assessment of other health & safety issues are carried out under other EU Directives, as relevant. These may include reports prepared under the Integrated Pollution Prevention and Control, Industrial Emissions, Waste Framework, Landfill, Strategic Environmental Assessment, Seveso III, Floods or Nuclear Safety Directives. In keeping with the requirement of the amended Directive, an EIAR should take account of the results of such assessments without duplicating them”.*

London Healthy Urban Development Unit: Rapid Health Impact Assessment Tool (4th Edition)

The Institute of Public Health in Ireland (IPHI) have published the Health Impact Assessment (HIA) Guidance, there is no consolidated methodology or practice for describing human health in the EPA Guidelines. Therefore, the impacts of the Proposed Development on human health will be assessed qualitatively using the relevant human health determinants outlined in the London HUDU *Rapid Health Impact Assessment Tool*.

The London HUDU *Rapid Health Impact Assessment Tool*³, published in October 2019, is designed to assess the likely health impacts of development plans and proposals. The toolkit helps to identify determinants of health which are likely to be influenced by a specific development proposal, as well as issues directly or indirectly influenced by planning decisions. The way in which the London HUDU *Rapid Health Impact Assessment Tool* has supported the human health assessment as detailed in Section 15.3 Methodology.

Health Impact Assessment Guidance: A Manual (Institute of Public Health, 2021)

The Institute of Public Health published this manual⁴ to guide decision makers to build healthier communities and reduce health inequalities. The new HIA Guidance assists policy and decision-makers at national, regional, and local levels to assess the potential impact of a proposed new law, policy, programme, or project and how it might affect the health of the community before it is implemented.

Health in Environmental Impact Assessment 2017 (IEMA, 2017)

This guidance⁵ was published following the 2017 changes⁵ to the EIA regulations that clarified that population and human health should be considered in an EIA.

It suggests that five key principles should underpin health in EIA:

1. Comprehensive approach to health: Consider the wider determinants of health and wellbeing.
2. Proportionate: agree with stakeholders a focus on only the likely significant health effects of a project.
3. Consistency: work in accordance with up-to-date policy, guidance, and scientific consensus.
4. Equity: consider the distribution of health effects across a population and if appropriate take action.

³ NHS (2019). *HUDU Planning for Health: Rapid Health Impact Assessment Tool*.

⁴ IPHI (2021). *Health Impact Assessment Guidance: A Manual*.

⁵ IEMA (2017). *Health in Environmental Impact Assessment*.

5. Reasonableness: deliver an objective assessment based on evidence and on sound judgment.

Determining Significance for Human Health in Environmental Impact Assessment (IEMA, 2022)

IEMA published this guidance⁶ in 2022 to promote greater consistency in the EIA health assessment process. This guidance identifies a range of factors that influence human health, termed the 'wider determinants of health', which span the bio-physical, social, behavioural, economic, and institutional factors, and provides a framework for concluding on the significance of population health effects that can be applied across the wider determinants of health. The framework includes assessing where there are opportunities to improve the development in favour of better population health outcomes and respond to potential inequalities and addresses inequalities and population health as environmental outcomes of a project.

Addressing Human Health in Environmental Impact Assessment (IAIA & EUPHA, 2019)

This paper⁷ provides principles and good practice for addressing health in EIA. EIA is governed by the EIA Directive 2011/92/EU, as amended by 2014/52/EU ('EIA Directive'). Article 3 of the amended EIA Directive names human health among the topics to be addressed when conducting an EIA. Therefore, this paper was prepared in order to address the challenges of integrating health in environmental assessments. It highlights that a range of determinants act on people's health, such as socioeconomic status, gender, and other environmental and social determinants, which need to be considered in a HIA to inform policies, programs, plans, and projects.

15.3 Methodology

15.3.1 Study Area

The study area for the population and human health assessment has considered the area of land that encompasses the likely effects of the Proposed Development. The area used for the baseline analysis comprises the Listowel, Newcastle West and Kilrush Local Electoral Areas (LEAs), as this is where the majority of population and human health effects are likely to occur.

15.3.2 Determination of the Baseline Environment

In order to assess the potential effects associated with the Proposed Development, it is necessary to determine the baseline conditions, resources, and receptors in the Site and surrounding area.

The identification of the baseline conditions therefore involves predicting changes that are likely to happen in the intervening period, for reasons unrelated to the Proposed Development.

The baseline section of this chapter includes a description of local communities within the study area and a profile of the people who reside within these communities. This profile comprises an analysis of population and population growth, age, demographics, and health determinants. The presence of any vulnerable groups which could be disproportionately affected by the impacts of the Proposed Development are also identified in the baseline. The findings of the public consultation exercise are also

⁶ IEMA (2022). *Determining Significance for Human Health In Environmental Impact Assessment*.

⁷ IAIA and EUPHA (2019). *Addressing Human Health in Environmental Impact Assessment*.

summarised in Chapter 6 of this EIAR and the supporting appendices in Volume II of the EIAR. The baseline also includes a description of land uses in the local area, including the presence of:

- Private residential buildings and commercial properties.
- Community land (e.g., common land, village greens, open green space, allotments, sports pitches etc.).
- Community facilities (e.g., village halls, healthcare facilities, education facilities, religious facilities etc.).
- Land allocated for employment and residential development by local authorities.

15.3.3 Determination of Sensitive Receptors

The sensitivity of the existing environment identifies the ability of the receptor to respond to potential effects. Receptors in the population and human health assessment are members of the local and wider community which have the potential to be impacted by any of the effects described. The following section identifies the methodology for defining the sensitivity of receptors for each type of potential effect identified. Terminology used to describe the sensitivity of the receptor is as per the EPA Guidelines (2022). The assessment of human health is assessed using the HUDU guidance⁸.

15.3.3.1 Land Use

The value and descriptors which have been applied to determine sensitivity have been based on professional judgement. Examples of the sensitivities assigned to different land uses are identified in Table 15.1. It is important to note that other criteria are also used to inform the sensitivity of a resource to potential change. This includes how often the resource is used, how many users the resources have, and whether the resource is maintained.

Table 15.1: Examples of Sensitivities Assigned to Different Land Uses

Sensitivity	Description
High	<ul style="list-style-type: none"> • Private residential buildings, or land allocated for development of housing. • Buildings used for employment use, and land allocated for development of employment uses. • Regularly used community buildings which have only limited alternatives available nearby. • National or regional walking, cycling and horse-riding routes, and other routes regularly used by vulnerable travellers such as the elderly. • Designated public open spaces, or open spaces which attract users nationally e.g., national parks. • Religious sites and cemeteries. • Regularly used agricultural land where the enterprise is dependent on the spatial relationship of the land to key agricultural infrastructure.
Medium	<ul style="list-style-type: none"> • Land associated with private residential buildings e.g., gardens. • Community buildings which are regularly used or where there are only limited alternatives available in the local area. • Open spaces which span over a regional area and attract visitors from a regional catchment e.g., country parks, forests. • Public rights of way and other routes close to communities which are used for recreational or utility purposes, but for which alternative routes can be taken. • Agricultural land holdings which are used semi-regularly and where the enterprise is partially dependent on the spatial relationship of land to key agricultural infrastructure.

⁸ NHS (2019). *HUDU Planning for Health: Rapid Health Impact Assessment Tool*.

Sensitivity	Description
Low	<ul style="list-style-type: none"> • Community buildings which are infrequently used or where there are many alternatives available in the local area. • Open spaces which are used for informal recreation (e.g., dog walking), and where there are alternative open spaces available. • Locally used community land e.g., local parks and playing fields. • Walking, cycling and horse-riding routes which have fallen into disuse through past severance, or which are scarcely used because they do not currently offer a meaningful route for either utility or recreational purposes. • Agricultural land which is used semi-regularly but where the enterprise is not dependent on the spatial relationship of land to key agricultural infrastructure.
Negligible	<ul style="list-style-type: none"> • Derelict or unoccupied buildings. • Agricultural land which is infrequently used on a non-commercial basis.

15.3.3.2 Severance

The receptors which have potential to experience severance effects are local residents who use the roads and walking / cycling routes to travel in and around the study area to commercial properties, community facilities, places of work, and educational facilities. No sensitivity values are assigned to receptors with potential to experience severance effects.

15.3.3.3 Employment

The receptor with potential to experience employment effects is the workforce in Counties Kerry, Clare and Limerick. This includes the workforce in the construction industry and the local supply chain. No sensitivity values are assigned to receptors with potential to experience employment effects.

15.3.3.4 Human Health

The effects on human health are assessed using guidance set out in the HUDU *Rapid Health Impact Assessment Tool*. Sensitivities are not defined for receptors.

15.3.4 Describing Potential Effects and Significance Criteria

Effects on land use, severance, and economic activity are described using the criteria provided in the EPA Guidelines (2022). The process to determine potential effects is described in Chapter 1 (Introduction). In summary, it involves combining the sensitivity of a receptor with a description of an impact on that receptor (its quality, type, frequency, duration, probability, and magnitude) to determine a significance of impact. Detail on the criteria used to determine the sensitivity of a receptor is included in section 15.3.3. This section describes, for each type of effect, the assessment criteria which informs the description of the impact. This includes the parameters which define a direct or indirect effect, and how a magnitude of effect is determined.

Since the EPA Guidelines (2022) do not provide extensive guidance on assessing human health, the assessment of human health is instead based on guidance set out in the HUDU *Rapid Health Impact Assessment Tool*⁹. The assessment method used to determine human health effects is also identified in the following sections.

⁹ NHS (2019).

15.3.4.1 Land Use

The land use assessment includes all direct and indirect effects on community resources and private assets in the study area. Direct effects include land-take and / or impacts on access, *i.e.*, properties and / or facilities being cut off or split. Indirect effects include impacts on the amenity of residents of properties and / or users of community resources in the study area. Depending on the type of land use effect being assessed, the magnitude of the impact is determined by:

- The amount of land to be taken or the number of properties to be demolished.
- The extent to which access to community resources or private property is impacted; and
- The number of users and the extent to which these users experience impacts on their amenity.

This assessment draws upon the assessment findings Chapter 7 (Air Quality), Chapter 11 (Noise and Vibration), and Chapter 14 (Traffic and Transport).

15.3.4.2 Severance

Severance is defined as the separation of residents from facilities and services they use within their community caused by new or improved roads or by changes in traffic flows. The Proposed Development could cause severance effects by changing levels of traffic congestion on existing roads and / or introducing traffic management measures. This may lead to separation of residents from facilities and services which they use.

All severance impacts are direct impacts. The assessment of magnitude is informed by the assessment results presented in Chapter 14 (Traffic and Transport). It is determined by:

- The extent of the physical changes caused by the Proposed Development.
- The consequent changes in traffic levels on existing roads.
- The number of people whose journey will be affected.
- The type of road involved; and
- The mitigation measures implemented.

The criteria used to determine the magnitude of effect of severance is outlined in Table 15.2.

Table 15.2: Criteria Used to Assess Magnitude of Effect of Severance

Magnitude of Effect	Description
High	People are likely to be deterred from making trips to an extent enough to induce reorganisation of their habits. Considerable hindrance will be caused to people who experience such severance on trips which they regularly carry out.
Medium	Some people are likely to be dissuaded from making trips. Other trips will be made longer or less attractive.
Low	In general, the current journey pattern is likely to be maintained, but there will probably be some hindrance to movement.
Negligible	There will be a very limited impact on people's movement and current journey patterns will be maintained.

15.3.4.3 Employment

This assessment considers the impact on the workforce in Counties Kerry, Clare and Limerick. The Proposed Development may provide direct and indirect job opportunities.

Direct jobs include the temporary workforce required to construct the Proposed Development in the short to medium term, as well as the workforce required to operate the facility in the longer term.

Indirect jobs include those created in the supply chain to provide material, specialist labour, and demolition and remediation services for the workforce. There is no consolidated methodology or practice for assessing the magnitude of the impact on employment in EPA Guidelines (2022). It has therefore been assessed based on best practice of previous projects in which the size of the workforce in the impact area is considered, relative to the number of jobs that the Proposed Development will create.

15.3.4.4 Determining Significance

Once the magnitude of the impact has been identified, this can be cross-referenced with the sensitivity of the receptor to derive the overall significance of impact as per the EPA Guidelines (2022). By bringing together magnitude and sensitivity, the assessment considers the classification of the effects as outlined in Table 15.3.

Table 15.3: Classifications of the Significance of Effects

Sensitivity of Receptors	Magnitude of Effect			
	High	Medium	Low	Negligible
High	Very significant	Significant	Slight	Not significant
Medium	Significant	Moderate	Slight	Imperceptible
Low	Moderate	Slight	Slight	Imperceptible
Negligible	Imperceptible	Imperceptible	Imperceptible	Imperceptible

15.3.4.5 Human Health

The human health assessment includes impacts on the health of residents of properties and users of community resources in the study area. Whilst relevant guidance from the Institute of Public Health in Ireland (IPHI), specifically the *Health Impact Assessment Guidance*¹⁰, has been considered, there is no consolidated methodology or practice for describing effects on human health in the EPA Guidelines (2022). The impacts of the Proposed Development on human health has therefore been assessed qualitatively using the human health determinants set out in the *London HUDU Rapid Health Impact Assessment Tool*.

A checklist approach has been used to provide a broad overview of the potential health impacts and is applicable to a wide range of proposals. The checklist is split into 11 broad determinants and is based on the WHO publication '*Healthy Urban Planning*'.

The WHO Europe defines health as "a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity"¹¹. Consequently, public health encompasses general

¹⁰ IPHI (2021). *Health Impact Assessment Guidance*.

¹¹ WHO (2006). *Constitution of the World Health Organisation*.

wellbeing, not just the absence of illness. Some effects are direct and obvious, others are indirect, while some may be synergistic, with different types of impact acting in combination. In keeping with this definition, this assessment considers the potential impacts of the Proposed Development on physical, mental, and social health.

Factors that have the most significant influence on the health of a population are called 'determinants of health'; these include an individual's genetics and their lifestyle, the surrounding environment, as well as political, cultural, and societal issues. The interrelationship between these factors is shown in Plate 15.1.

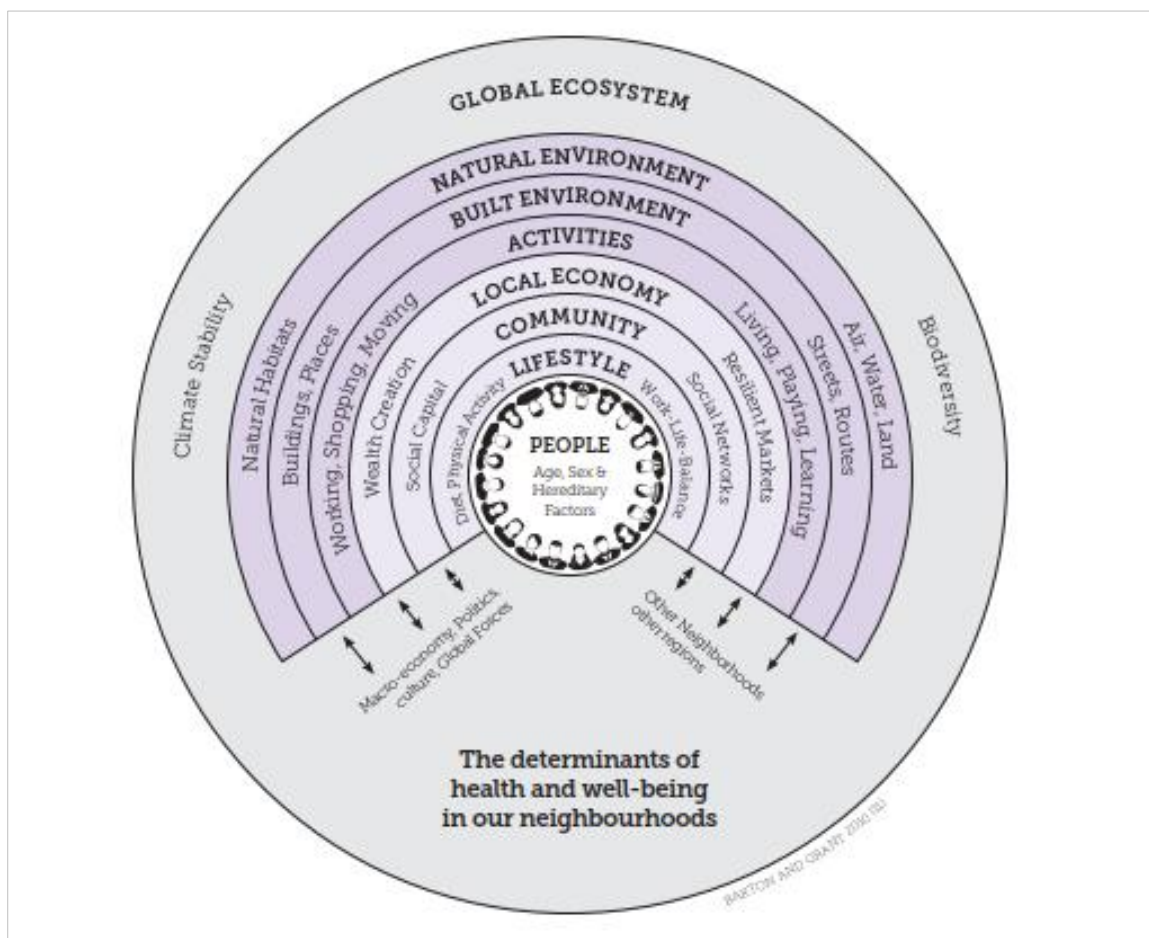


Plate 15.1: Social Determinants of Health¹²

An initial scoping exercise was undertaken to determine the criteria within the HUDU guidance which is relevant to this assessment. The criteria which has been assessed as part of this chapter is provided in the following bullet points. Other criteria in HUDU guidance¹³ but not in the following list, have been scoped out:

- Access to open space and nature.
- Access to employment and social infrastructure (severance).

¹² Barton and Grant (2006).

¹³ NHS (2019).

- Air quality, noise, and neighbourhood amenity.
- Climate change.

The assessment of human health is a qualitative rather than quantitative assessment, due to the diverse nature of health determinants and health outcomes which are assessed. Although the assessment of human health effects describes the likely qualitative health outcomes, it is not possible to quantify the severity or extent of the effects which give rise to these impacts. As such, the potential health impacts are described as outlined in Table 15.4, based on broad categories for the qualitative effects identified. Where a likely significant effect has been identified, actions have been recommended to mitigate any negative impact on health, or opportunities to enhance health benefits. It should be noted that in many cases, embedded mitigation to reduce these effects or measures to enhance certain benefits already form part of the Proposed Development and the assessment has considered these impacts as such.

Table 15.4: Human Health Impact Categories

Impact category	Impact symbol	Description
Positive	+	A beneficial impact is identified
Neutral	0	No discernible health impact is identified
Negative	-	An adverse impact is identified
Uncertain	?	Where uncertainty as to the overall impact

15.3.5 Limitations and Assumptions

This population and human health assessment is based on professional judgement and considers both the adverse and beneficial impacts that the Proposed Development can have upon existing and surrounding receptors.

The assessment is based on information available at the time of drafting the chapter. It draws upon other specialist topic inputs to aid the assessment of the impact of the Proposed Development on population and human health receptors.

Community resources are mentioned expressly in the environmental baseline only where they contribute to the local context or where they may be affected by the Proposed Development. Consequently, not all community resources within the study area are mentioned.

15.4 Baseline Environment

15.4.1 Data Sources

The following data sources were used to inform the baseline and gain an understanding of the community in the study area:

- A review of relevant local policy documents including the Kerry CDP, Clare CDP, Limerick DP and the Listowel Municipal District Local Area Plan 2020-2026.

- Central Statistics Office (CSO) relating to the 2022 and 2016 Census (note that 2016 data was only used where 2022 Census data has not been released).
- Spatial information relevant to planning applications and decisions in Ireland from MyPlan.ie and An Bord Pleanála within a 5km radius of the Site boundary (accessed 18 October 2023).

15.4.2 Overview

The Proposed Development is located within the SSE Tarbert site, in Tarbert, north of County Kerry. The study area for this analysis has been defined as Listowel, Newcastle West and Kilrush LEAs. Residents within this LEAs are most likely to experience effects from the Proposed Development. The following analysis compares statistics regarding the population in the study area with those in Co. Kerry, Co. Clare, Co. Limerick and Ireland as a whole.

This section establishes a comprehensive and coherent socio-economic and human health profile of the study area, including consideration of the labour market and health indicators. Dependent on the availability of data from the CSO, the baseline section presents analysis of socio-economic indicators which provide the narrative and evidence base of the current status of the area surrounding the Site. Baseline analysis in this section sets the context for the potential impacts of the Proposed Development.

15.4.3 Population

According to the 2022 Census, there are 80,607 residents in the study area (29,285 persons in Listowel, 29,033 persons in Newcastle West and 22,289 persons in Kilrush). Plate 15.2 displays the average of the combined age breakdown for both LEAs along with comparators of Co. Kerry, Co. Clare, Co. Limerick and Ireland as a whole.

The population of the combined LEAs contains more residents aged 65 or over (20.4%) compared to Co. Kerry (18.9%), Co. Limerick (16.0%), Co. Clare (16.9%), and the national average in Ireland (15.1%). The working age population (aged 15 to 64) is slightly lower in the study area at 60.7% compared to 62.7% in Co. Kerry, 65.1% in Limerick, 63.5% in Co. Clare, and 65.3% nationally. The proportion of residents aged 0 to 14 (18.9%) is similar to that of Co. Kerry (18.4%) and Co. Limerick (18.8%), and slightly below the national average (19.7%) and Co. Clare (19.5%).

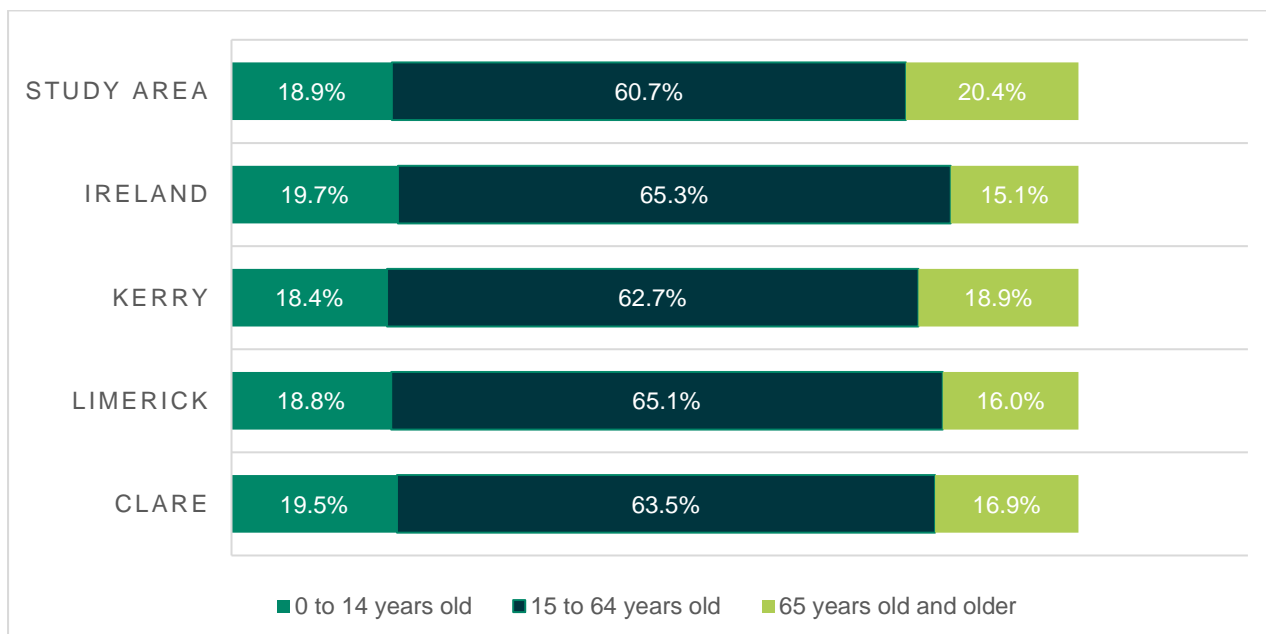


Plate 15.2: Age Breakdown¹⁴

15.4.3.1 Deprivation

The Podal HP Deprivation Index is the primary source for deprivation in Ireland. It combines three dimensions of affluence or disadvantage (demographic profile, social class composition, and labour market situation) to provide a Relative Index Score for every Small Area in Ireland. The Relative Index Scores are normally distributed around a bell-shaped curve to display the current levels of deprivation compared to other areas, with most areas clustered around the mean and comparatively fewer areas exhibiting extreme levels of affluence or deprivation. The seven classifications for deprivation range from extremely affluent to extremely disadvantaged.

According to latest available data, the majority of the Electoral Divisions (EDs) within the Listowel and Kilrush LEA were classified as 'marginally below average' (4th least deprived rank out of seven classifications) in 2022, including Tarbert with a relative score of 4.78 (Plate 15.3). A single ED within Listowel LEA (*i.e.*, Ballyhorgan) is 'marginally above average' while other two (*i.e.*, Carrig and Ardagh) are 'disadvantaged'. Within the Newcastle West LEA, EDs on the south-west are classified as 'marginally below average' while those to the north-east are 'marginally above average'. There are five EDs within Kilrush LEA (*i.e.*, Kilballyowen, Moveen, Killofin, Kilkee and Kilrush Urban) classified as 'disadvantaged' while five EDs towards the south-east (*i.e.*, Clondagad, Kilcloher, Killanniv, Lisheen, and Killone) 'are marginally above average'.

¹⁴ CSO (2022).

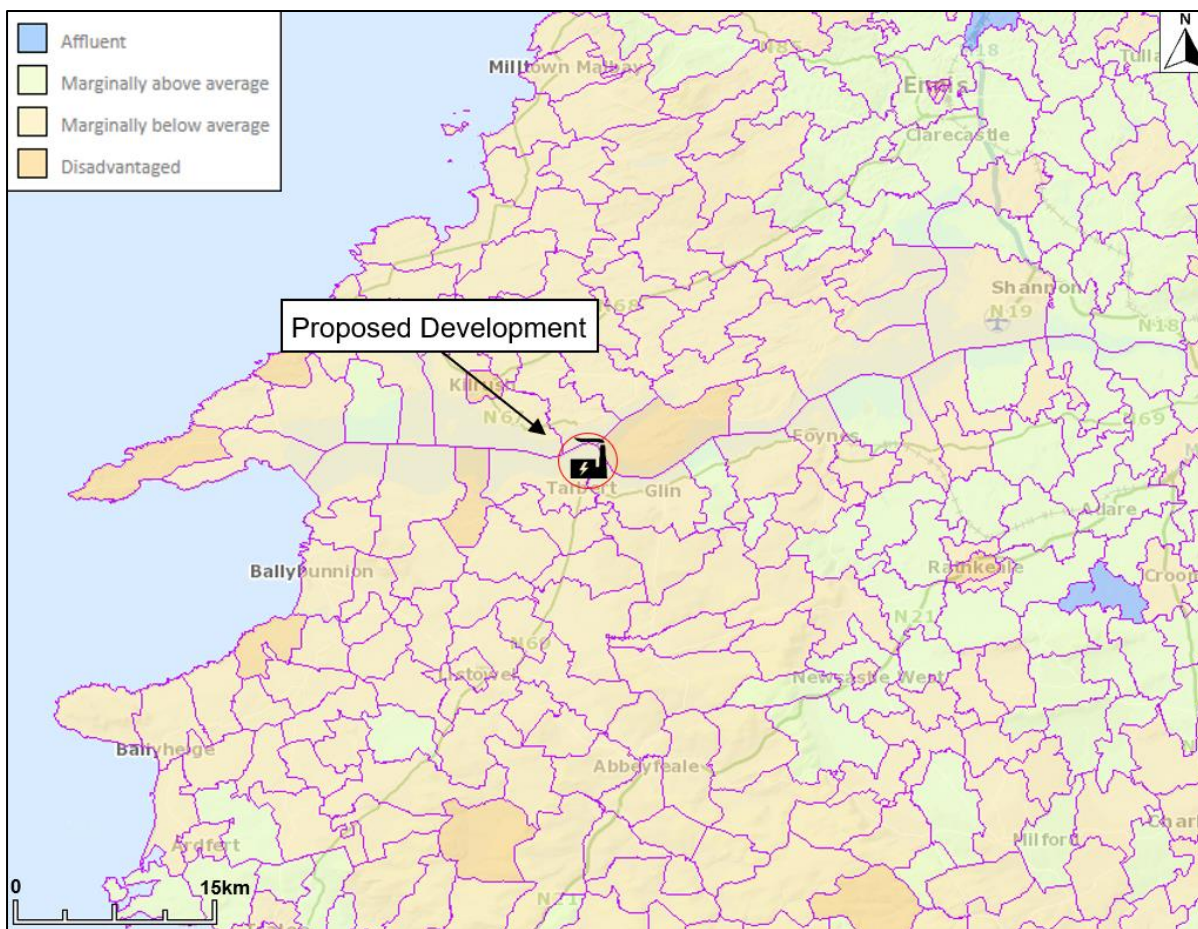


Plate 15.3: Deprivation Index¹⁵

15.4.3.2 Education and Skills

In terms of educational attainment, the study area is relatively level with Co. Kerry, Co. Clare, Co. Limerick, and Ireland for most categories except Postgraduate diploma or degree, as shown in Table 15.5. For example, 20.1% of working age residents in the study area are educated to upper secondary level, in line with 19.2% in Co. Kerry, 18.4% in Co. Limerick, 19.8% in Co. Clare and 18.1% nationally. However, the proportion of inhabitants in the study area with a postgraduate diploma or degree is just over half that of the national average. Overall, the proportion of inhabitants educated to bachelor's degree level (or equivalent) or higher in the study area is 24.2% which is lower than the rate for Co. Kerry (28.4%), Co. Limerick (30%), Co. Clare (31.4%) and Ireland (33.7%). In contrast, 10.2% and 17.2% of residents have completed primary and lower secondary education respectively, a higher proportion than in Co. Kerry (8.2% and 14.8% respectively), Co. Limerick (8.0% and 14.5% respectively), Co. Clare (7.0% and 13.1% respectively) and nationally (10.0% and 13.2% respectively).

¹⁵ Irish Deprivation Index (Pobal, 2022).

Table 15.5: Highest Level of Education Completed¹⁶

Level of Education	Study Area	County Kerry	County Limerick	County Clare	Ireland
No formal education (%)	2.9	2.5	2.3	2.0	2.4
Primary (%)	10.2	8.2	8.0	7.0	10.0
Lower secondary (%)	17.2	14.8	14.5	13.1	13.2
Upper secondary (%)	20.1	19.2	18.4	19.8	18.1
Technical / vocational (%)	8.1	8.1	7.2	7.9	7.5
Advanced certificate / completed apprenticeship (%)	7.4	6.8	5.7	6.5	5.6
Higher certificate (%)	5.8	6.1	5.4	5.9	5.5
Ordinary bachelor's degree/professional qualification or both (%)	7.6	8.5	7.3	8.4	8.1
Honours bachelor's degree/professional qualification or both (%)	9.8	11.2	12.5	12.4	13.3
Postgraduate diploma or degree (%)	6.4	8.0	9.2	9.7	11.2
Doctorate (Ph.D.) (%)	0.4	0.7	1.0	0.9	1.1
Not stated (%)	4.1	5.8	8.3	6.4	6.5

15.4.3.3 Employment

There are 33,699 persons at work in the study area, which is approximately 51.6% of the total population and slightly below the national average of 56.1%, as shown in Table 15.6. The study area is relatively level with Co. Kerry, Co. Clare, Co. Limerick, and Ireland in terms of principal economic status of the population, although it has a slightly lower percentage of students (9.3%) compared to Co. Kerry (9.8%), Co. Limerick (12.2%), Co. Clare (11.4%), and Ireland (11.1%), and a slightly higher percentage of retirees (20.6%) compared to Co. Kerry (19.3%), Co. Limerick (16.8%), Co. Clare (17.8%) and Ireland (15.9%). The existing Tarbert HFO Power Station currently employs 14 No. persons as of Q3 2023 and is due to cease operating in December 2023.

Table 15.6: Principal Economic Status (aged 15+ years)¹⁷

Principal Economic Status	Study Area	County Kerry	County Limerick	County Clare	Ireland
At work	51.6	52.9	53.3	54.5	56.1
Looking for first regular job (%)	0.7	0.9	0.8	0.8	0.8
Unemployed having lost or given up previous job (%)	4.1	4.4	4.2	4.0	4.3
Student (%)	9.3	9.8	12.2	11.4	11.1
Looking after home/family (%)	7.6	6.9	6.5	6.4	6.6
Retired (%)	20.6	19.3	16.8	17.8	15.9
Unable to work due to permanent sickness or disability (%)	5.5	5.1	5.8	4.3	4.6
Other (%)	0.7	0.8	0.5	0.7	0.7

¹⁶ CSO (2022).

¹⁷ CSO (2022).

15.4.3.4 Social Class

The 2022 Census also provides a breakdown of the total population by 'social class'. These groupings are based on the level of skill and education attainment of their occupation. For the population which does not work, the social class of the person which they are deemed to depend on is attributed to them (as per guidance issued by the CSO). As shown in Table 15.7, the study area has a lower proportion of residents who are categorised as 'professional' (6.5%) and 'managerial and technical' (29.5%) compared to Co. Kerry (7.2% and 29.5% respectively), Co. Limerick (9.8% and 27.5% respectively), Co. Clare (8.7% and 30.8% respectively) and Ireland as a whole (9.3% and 30.7% respectively). The proportion of skilled manual (16.1%) and semi-skilled (13.0%) is slightly higher compared to Co. Kerry (14.7% and 12.0% respectively), Co. Limerick (12.2% and 11.0% respectively), Co. Clare (13.3% and 11.3% respectively) and Ireland as a whole (12.9% and 11.2% respectively).

Table 15.7: Social Class¹⁸

Social Class	Study Area	County Kerry	County Limerick	County Clare	Ireland
Professional workers (%)	6.5	7.2	9.3	8.7	9.3
Managerial and technical (%)	29.5	29.5	27.5	30.8	30.7
Non-manual (%)	16.2	16.5	15.4	16.0	16.2
Skilled manual (%)	16.1	14.7	12.2	13.3	12.9
Semi-skilled (%)	13.0	12.0	11.0	11.3	11.25
Unskilled (%)	3.6	3.3	3.3	3.2	3.1
All others gainfully occupied and unknown (%)	15.0	16.7	21.3	16.6	16.6

15.4.3.5 Live Register

The Live Register is used to provide a monthly series of the numbers of people (with some exceptions) registering for Jobseekers Benefit (JB) or Jobseekers Allowance (JA) or for various other statutory entitlements at local offices of the Department of Social Protection. Table 15.8 shows that the proportion of residents in Co. Limerick on the Live Register in June 2023 (3.6%) was the same as the national average (3.6%), while it was slightly higher in Co. Kerry (4.7%) and Co. Clare (3.7%). The CSO stated that County Kerry was one of four counties that showed an increase in the number of people on the Live Register from July 2023 (2.6%).

Table 15.8: Live Register¹⁹

	Claimants	%
Co. Kerry	7,295	4.7%
Co. Limerick	7,503	3.6%
Co. Clare	4,703	3.7%
Ireland	186,396	3.6%

¹⁸ CSO (2022).

¹⁹ CSO (2023).

15.4.4 Land Use

Land use in the surrounding area is summarised in Table 15.9.

Table 15.9: Land Use

Site Boundary	Land Use
North	Tarbert Lighthouse and the Shannon Estuary.
South	Two electrical transmission substations (110kV to south-east and 220kV directly south and a lagoon south of the 220kV substation draining to the Shannon Estuary and with agricultural lands further south on the mainland, and the National Oil Reserves Agency (NORA) tank farm to the south-west.
East	The N67 National Secondary Road and the Shannon Estuary.
West	The Shannon Estuary.

A timeline of the SSE Tarbert site development and changes since it was developed from greenfield in 1966 is summarised in Table 15.10.

Table 15.10: Site Operational Timeline

Year	Operation
1966	Construction started on the ESB Tarbert Power Station.
1969	ESB Tarbert Power Station Unit One and Two becomes operational.
1976/77	Units Three and Four operational
2003	ESB Tarbert receives its Industrial Emissions (IE) Licence from the EPA (P0607-01).
2005	ESB Tarbert receives its current IE Licence from the EPA (P0607-02).
2009	Power station sold by ESB to Endesa
2012	Power station sold by Endesa to SSE
2023	Construction started on the TEG project

OSI maps show that that historical land use at the Site was as low-lying grassland land. The island portion of the SSE Tarbert site which includes the Proposed Development Site, was divided into fields and included with a lighthouse, several piers and slipways, a coastguard station and previous naval artillery facilities prior to the construction of the original Tarbert HFO Power Station. The Site is located on the southern shore of the Shannon Estuary, on Tarbert Island, originally agricultural land and made ground (*i.e.*, infilled / reclaimed land), connected to the mainland via a causeway.

15.4.5 Human Health

The results of a self-assessment of health in the 2022 Census are shown in Table 15.11. On average, general health in the study area is relatively level with Co. Kerry, Co. Clare, Co. Limerick, and Ireland. Approximately, 51.3% of residents in the study area self-assessed their health as 'very good' compared to slightly higher national rates (53.2%), but similar to Co. Kerry (51.7%), Co. Clare (51.8%) and Co. Limerick (49.4%). However, the proportion of the population in the study area who self-assessed their health as 'good' (33.3%) is slightly higher than Co. Kerry (31.7%), Co. Limerick (30.2%), Co. Clare (31.0%) and Ireland (29.7%). In addition, 1.8% of residents in the study area described their health as

'bad' or 'very bad', a similar proportion to Co. Kerry (1.7%), Co. Limerick (2.0%), Co. Clare (1.7%) and in Ireland (1.7%).

Table 15.11: Population by General Health²⁰

Self-Assessed Health	Study Area	County Kerry	County Limerick	County Clare	Ireland
Very Good (%)	51.3	51.7	49.4	51.8	53.2
Good (%)	33.3	31.7	30.2	31	29.76
Fair (%)	9.9	9.2	9.1	9	8.6
Bad (%)	1.5	1.4	1.6	1.4	1.4
Very bad (%)	0.3	0.3	0.4	0.3	0.3
Not stated (%)	3.7	5.7	9.4	6.6	6.7

The number of residents (as a percentage of total population) who live with a disability in the study area (22.8%) is similar to that of Co. Kerry and Ireland as a whole (21.6% and 21.5% respectively), and Co. Limerick (22.6.0%). The number of persons with disabilities within the study area is evenly distributed amongst people identifying as males (11.3%) and females (11.6%) (other expressions of gender-identity are not identified within the census data).

The 2022 Census does not provide further information on health limitations or physical activity data by local area. However, the Irish Health Survey provides further detail on health profiles at a regional level²¹.

The Irish Health Survey reports the mental health status of residents (aged 15 and over) at regional and national level. In 2019, 86% of Irish residents stated they experience no or minimal depression, which was slightly higher than across the south-west region (83%) and similar to the mid-west (87%). The full mental health statistics for the south-west and Ireland are shown in Table 15.12, which indicates that, on the whole, residents in the south-west experience slightly higher levels of depression compared to residents across the mid-west and the country.

Table 15.12: Mental Health Indicators²²

Mental Health Indicator	South-west	Mid-west	Ireland
None to minimal depression (%)	83	87	86
Mild depression (%)	11	9	9
Moderate depression (%)	4	2	3
Moderately severe or severe depression (%)	3	2	2

There is one healthcare facility in the surrounding area to the Site: Tarbert Medical Centre, approximately 1.5km south of the Site. The nearest hospital is Listowel Community Hospital,

²⁰ CSO (2022).

²¹ CSO (2019). *Irish Health Survey 2019*.

²² CSO (2019). *Irish Health Survey 2019*.

approximately 18km south-west, but the closest major hospital facility is the University Hospital Kerry, located approximately 42km south-west of the Site.

15.4.6 Travel Patterns and the Existing Transport Network

Table 15.13 illustrates travel time to work, school, or college for residents in the study area and its comparator areas. It shows that on average, a lower proportion of residents in the study area travel for half an hour or more compared to and the national average (31.8%), although this figure is higher than the averages for Co. Kerry (23.8%), Co. Limerick (25.2%) and Co. Clare (28.4%). However, like Co. Kerry (38.4%), Co. Limerick (30.1%), Co. Clare (33.7%) and Ireland (29.4 %), the majority of the residents in the study area commute for under 15 minutes (35.5%).

Table 15.13: Duration of Travel to Work, School, or College (population aged 5+ years)²³

Duration of Travel	Study Area	County Kerry	County Limerick	County Clare	Ireland
Under 15 mins (%)	35.5	38.4	30.1	33.7	29.4
1/4 hour - under 1/2 hour (%)	25.1	27.5	30.9	27.2	28.1
1/2 hour - under 3/4 hour (%)	16.5	14.2	16.1	16.8	17.3
3/4 hour - under 1 hour (%)	6.2	3.4	4.2	5.3	5.9
1 hour - under 1 1/2 hours (%)	6.1	3.7	3.3	4.5	6.1
1 1/2 hours and over (%)	2.5	2.5	1.6	1.8	2.5
Not stated (%)	8.1	10.2	13.6	10.6	10.7

In regard to mode of transport used to travel to work, school, or college (see Plate 15.4), the study area largely aligns with patterns in the comparator areas. Most residents in the study area travel by car (53.8%). This is also the most used mode in Co. Kerry (62.4%), Co. Limerick (58.0%), Co. Clare (65.5%) and Ireland as a whole (53.8%). Travelling on foot is the second most common method of transport across all areas except the study area, where more people travel by bus, minibus, or coach (7.2%) than on foot (6.9%).

²³ CSO (2022).

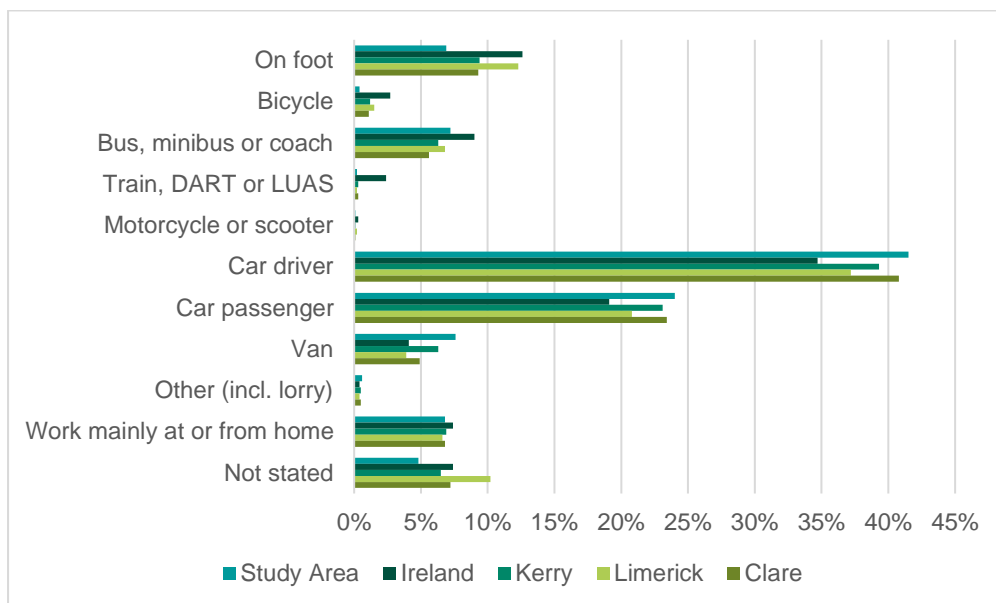


Plate 15.4: Means of travel to work, school or college (population aged 5+ years)²⁴

There is a ferry crossing from Tarbert to Killimer in Co. Clare located at the Tarbert Ferry Terminal, north of Tarbert and adjacent to the eastern boundary of the Proposed Development. This ferry crossing takes approximately 20 minutes and runs every hour from 07:00 to 21:30. This service allows people to transport car, coaches, bicycles, motorcycles and large commercial vehicles from Killimer in Co. Clare to Tarbert in Co. Kerry. This crossing reduces the need to drive around the Shannon Estuary (137km route).

Further information regarding traffic and transport is considered in Chapter 14 (Traffic and Transport).

15.4.7 Land Use

15.4.7.1 Local Community Facilities and Tourist Activities

The nearest community facilities to the Proposed Development are primarily located in the town of Tarbert which is approximately 1.8km from the Site boundary. Tarbert has two schools: Tarbert National School and Tarbert Comprehensive School and a pre-school (Wishing Tree Pre-School). There are also two churches (St. Mary's Roman Catholic Church and St. Brendan's Church of Ireland), a post office, a Garda station, an Urban Wastewater Treatment facility, multiple sport clubs (Tarbert GAA Club, Ferry Rangers Soccer Club, Shannonside Tarbert LGFA, Tarbert Rowing Club, Tarbert Island Maritime Club, Tarbert Pier Swimming Group) and a museum (Tarbert Bridewell Courthouse and Jail Museum). Recreational and amenity areas in Tarbert include the Tarbert Community Playground, John F. Leslie Woodland Walks, Tarbert House, Tarbert Fairy Trail, Illuminated Historical Bronzes, a Sensory Park, Streamside Stables and Tarbert Bird Hide (a birdwatching area).

The Shannon Estuary is well known for its unspoilt natural beauty and is home to Europe's largest group of bottlenose dolphins. Shannon Ferry Group Ltd. Operates the Killimer – Tarbert Car Ferry which links the main tourist routes of Ireland's Shannon Region on the popular "Wild Atlantic Way" from Killimer, Co. Clare to Tarbert, Co. Kerry. There are scheduled sailings daily, providing multiple attractions of

²⁴ CSO (2022).

Clare, Kerry and adjoining counties including the Dingle Peninsula, Loophead and the famous Cliffs of Moher.

The Shannon Regional Fisheries Board coastal boundaries extend from Hags Head on the Clare Coast and includes all of the Shannon Estuary to Limerick on the north side of the river, to Kerry head on the south side of the river. On the local maps there are 40 shore angling marks where excellent Ballan Wrasse can be taken as well as Mackerel, Pollack, Dogfish, Bull Huss, Ling and Conger.

Small boat fishing is available from Carrigaholt to Killadysert for thornback ray, bull huss, dogfish, conger, pollack and rockling.

Charter boats operating out of Kilrush, Killbaha and Carrigaholt for deep sea angling and have excellent inshore fishing in the Shannon Estuary for tope, bull huss, dogfish, thornback ray, conger, rockling and flatfish. Deep sea angling catches of blue shark, ling, pollack, coalfish, gurnard, etc. off Loop Head.

15.4.7.2 Commercial Facilities

Regarding commercial facilities, there are seven bars and / or restaurants in Tarbert, a hostel (Ferry House Hostel) and a bed & breakfast (Niamh Wall Bed and Breakfast (B&B)), a pharmacy (Tarbert Allcare Pharmacy) and a car dealership (Des Murphy Cars).

15.4.7.3 Planning Applications

A planning search of proposed and existing planning applications within 5km of the Proposed Development was undertaken in October 2023 (refer to Chapter 4 EIAR Volume I). The majority of planning applications captured within the search area are power related. Withdrawn, incomplete and small-scale (such as single dwelling applications) planning applications were not included.

15.5 Potential Impacts

15.5.1 Construction Phase

15.5.1.1 Land Use

The Site of the Proposed Development is located on the southern shore of the Shannon Estuary, on Tarbert Island, originally agricultural land and made ground (*i.e.*, infilled / reclaimed land), connected to the mainland via a causeway.

The Proposed Development is located in a primarily rural area outside local area plans zoning with the nearest residential property adjacent to the Site boundary. The Site is currently under the management of the Applicant.

The Site lies within the Strategic Development Location (SDL) at Tarbert / Ballylongford in North Kerry, and it is recognised for its potential as an Energy Hub and for industrial development at a regional and national level.

The Site comprises brownfield land, with the western portion being the former contractors yard and containing two disused galvanised sheds (former Mechanical Workshop and former Riggers' Store), a bunded concrete slab (Chemical Storage Compound) and a large vertical cylindrical tank in the north corner (Boiler Wash Effluent (BWE) tank) and the northern portion containing a variety of structures, including a vertical cylindrical Demineralised Water tank, horizontal, cylindrical, bunded sulphuric acid

tank, a caustic soda tank, the site Waste Water treatment system infrastructure (two caustic soda tanks and a disused ammonia tank within the water treatment building), a compressor house, a salt store and the Carpenter's workshop.

The surface of the Site consists of sealed tarmacadam and concrete (approximately 30%, mainly in the northern portion) and unsealed hardcore gravel and grassed areas (approximately 70%, mainly in the western portion).

The majority of the Site is generally flat and lies at an elevation of 3m to 5m above Ordnance Datum (AOD).

The Tarbert HFO Power Station is registered under "the COMAH Regulations 2015" as an "Upper Tier" establishment.

The existing dominant land use on the Site is industrial, as it is associated with power generation. Therefore, there are no effects associated with the change of land use for the Proposed Development activities.

Consequently, the Proposed Development will have no land use impacts during construction.

15.5.1.2 Severance

The study area of the Proposed Development is predominantly rural with limited public transport available. Local residents rely heavily on the local and regional road network to access workplaces, educational facilities, and community facilities. During the construction phase, HGV traffic, general delivery traffic and site operatives will all be required to travel to and from the Site.

The construction traffic will use both existing gated entrances to the Site.

Chapter 14 (Traffic and Transport) determines that the construction phase traffic will travel to and from the Site via the N67 and N69 National Roads.

The transport assessment finds that the percentage impacts at the junctions during peak periods range from 5% - 25%, therefore below the 30% 'significant' impacts threshold (TII Project Appraisal Guidelines for National Roads Unit 5.3 – Travel demand Projections, 2017). The impact of the Proposed Development construction traffic on the network is therefore considered to be Negligible. The increase in traffic volumes along the N67 and N69 National Roads is comfortably within the maximum capacity of the roads, resulting in a Negligible impact.

A Construction Traffic Management Plan (CTMP) has been prepared as part of this planning application (refer to EIAR Volume II Appendix 14B). All environmental protection measures contained within this EIAR have been incorporated into the CTMP, to minimise the potential impact of construction traffic. Therefore, it is not expected that there will be any congestion considerable enough to deter local residents from accessing workplaces, educational facilities or community facilities during the construction phase of the Proposed Development.

Therefore, the Proposed Development will have a Negligible impact on severance between local residents in the study area and the facilities which they use during the construction phase. Considering the frequency, extent, duration, and probability of the impact, the significance of effect is assessed to be Imperceptible.

15.5.1.3 Employment

As noted in Chapter 5 (Description of the Proposed Development), the construction phase of the Proposed Development will be up to 29 months.

During the construction period, employment opportunities will be created as a result of the works. Although these jobs are Temporary in nature, they represent a Positive economic impact that can be estimated as a function of the scale and type of construction.

Levels of employment will vary throughout the construction phase. The peak work force is expected to be up to 200 personnel per day, over an 11-month period. This is illustrated in Plate 15.5. Employment levels over the 29-month construction period is on average 130 total gross jobs per month.

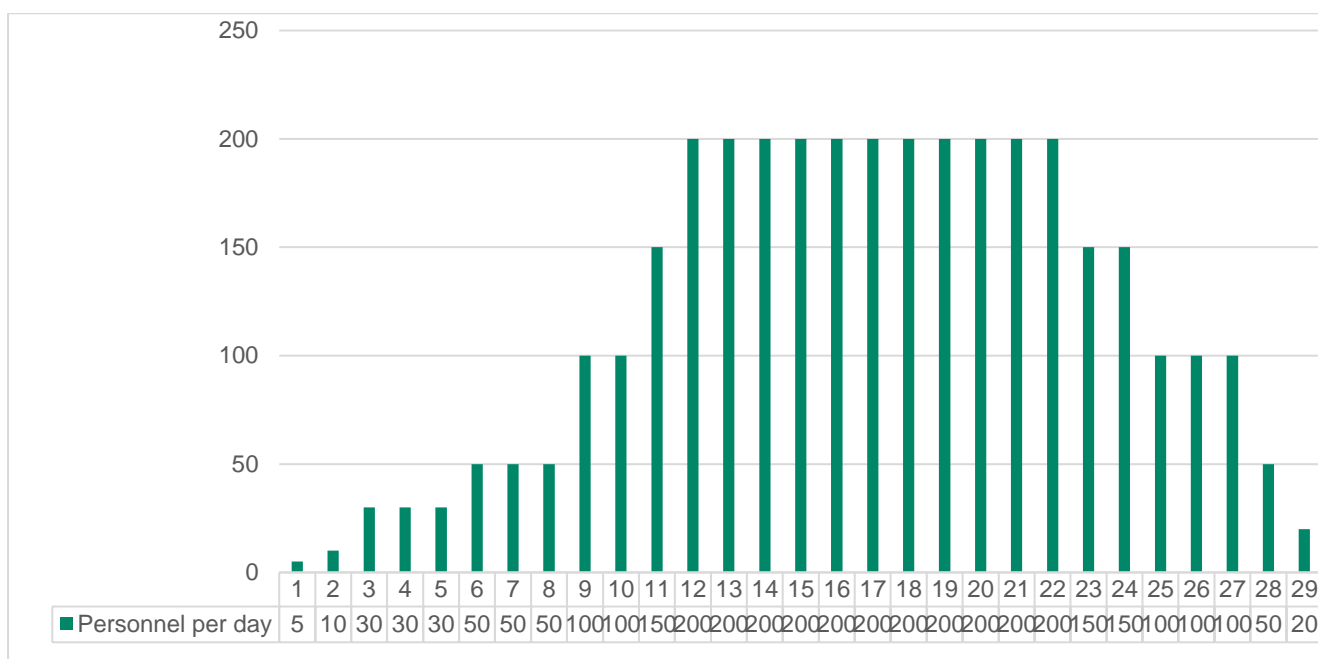


Plate 15.5: Estimated Number of Construction Workers Required On-Site

15.5.1.4 Leakage

Leakage effects refer to the proportion of jobs within a study area that are filled by residents living outside the study area, *i.e.*, defined in this case as Co. Kerry and Co. Limerick combined, as Census data does not provide this information at the LEAs level.

Commuting data²⁵ shows that 70.4% of people who work within Co. Kerry or Co. Limerick also live in the region. Therefore, the demand-side self-containment of jobs in Co. Kerry and Co. Limerick is 84% and leakage is set at 29.6%. A 29.6% discount is therefore applied to the estimated 130 jobs created by the Proposed Development. Therefore, it is expected that 100 people from within Co. Kerry or Co. Limerick, and 30 people from outside Co. Kerry or Co. Limerick will benefit from the Proposed Development.

²⁵ CSO (2022). *Census 2016. Population Aged 5 Years and Over at Work, Usually Resident and Present in the State 2016*

15.5.1.5 Displacement

Displacement measures the extent to which the benefits of a project are offset by reductions of output or employment elsewhere. Any additional demand for labour cannot simply be treated as a net benefit - it removes workers from other posts and the net benefit is reduced to the extent that this occurs.

Overall, it is assumed that due to the flexibility of a typical construction workforce (*i.e.*, they quickly move from project to project), displacement effects are considered to be low. The *HCA Additionality Guide*²⁶ suggests 25% as a 'ready reckoner' for low levels of displacement (*i.e.*, there are expected to be some displacement effects, although only to a limited extent). Applying this level of displacement to the employment generated for the Proposed Development results in a net direct employment of 97.

15.5.1.6 Multiplier Effect

In addition to direct employment generated by the construction of the Proposed Development, it is expected that there will be an increase in local employment arising from indirect and induced effects of the construction activity. Temporary indirect jobs will be created in the supply chain to provide material, specialist labour, and construction services for the workforce whilst induced employment may also be created (associated with local expenditure as a result of those who derive incomes from the direct and indirect impacts of the Proposed Development). This is known as the multiplier effect.

The *HCA Additionality Guide* provides 'ready reckoner' composite multipliers (the combined effect of indirect and induced multipliers) to account for this. This is a best practice approach in the absence of specific information that might provide a defensible justification for another multiplier effect level being used, appropriate to the sectors concerned. For the study area, a medium multiplier effect of 1.1 has been considered appropriate due to the local nature of the study area. Applying this multiplier generates an additional 10 indirect and induced jobs.

Table 15.14 provides a summary of the net construction employment for the Proposed Development.

Table 15.14: Net Construction Employment

	Co. Kerry & Co. Limerick	Outside Co. Kerry & Co. Limerick	Total
Gross Direct Employment	100	30	130
Displacement	-25	-8	-33
Net Direct Employment	75	22	97
Indirect / Induced Employment	8	2	10
Total Net Employment	83	24	107

Based on the gross construction worker requirements in the construction schedule and the additionality factors outlined above, 107 net construction jobs would be generated as a result of the Proposed Development, of which around 83 are expected to be from within Co. Kerry and Co. Limerick.

Taking into account the size of the labour pool of construction workers in Co. Kerry and Co. Limerick (7,141 combined²⁷), the Proposed Development is assessed to have a Low impact on the employment

²⁶ HCA (2014).

²⁷ CSO (2022).

workforce in the study area during the construction phase. Considering the frequency, extent, duration, and probability of the impact, the significance of effect is assessed to be a Slight Positive.

15.5.1.7 Human Health

This section summarises the impact of the Proposed Development on human health and wellbeing, structured by health determinants as set out in the *London HUDU Rapid Health Impact Assessment Tool*.

Access to Open Space and Nature

As the Proposed Development will be constructed within the SSE Tarbert site, it does not include the demolition or provision of open and natural spaces. However, this assessment considers whether the traffic, air quality, and noise and vibration effects of the Proposed Development are likely to impact the character of open and natural spaces and whether they remain welcoming, safe, and accessible for all during the construction phase.

In regard to air emissions, the Proposed Development will not result in any significant change to the local air quality environment. In regard to noise creation during the construction phase, the predicted construction levels, is within the relevant BS 5228 Category A limits for weekdays and Saturday morning construction works. During the peak construction period (month 7), Noise Sensitive Receptors (NSR), NSR2 and NSR3 remain compliant, however at NSR1 the 65dB $L_{Aeq,T}$ threshold value is exceeded by 3dB. This increase will be managed by mitigation measures which will provide reductions in the order of 5dB to 10dB for the various measures.

At NSR1, the closest and therefore potentially most sensitive NSR, the worst-case predicted level of 68dBA is comparable to the $L_{Aeq,T}$ observed at the Site already, this means that activities contributing to the existing ambient sound levels in the area may be equally as prominent in the environment at NSR 1 as the proposed construction activity in the worst-case scenario.

On this basis No Significant Adverse effects are expected at any residential NSR locations with regards construction phase noise levels generated by on-site activities with exception of NSR 1 in the peak month (month 7), the impacts are assessed to be Not Significant, Short-Term and Reversible.

Traffic generation associated with the Proposed Development is expected to have a Temporary Negative effect, Slight in significance impact on the N67 and a Temporary effect with a Not Significant impact on the N67. However, the total proposed traffic flow is therefore comfortably within the maximum capacity of the roads.

Therefore, it is expected that the Proposed Development will not impact upon the ability to access and enjoy existing open and natural spaces within the study area and the existing provision of open and natural spaces is expected to remain welcoming, safe and accessible for all. Consequently, the impact of the Proposed Development on access to open space and nature as a determinant of human health and well-being during the construction phase is assessed to be Neutral (0) and will result in a Not Significant effect.

Access to Healthcare Services and Other Social Infrastructure

As the study area is predominantly rural with limited public transport available, local residents rely heavily on the local and regional road network to access healthcare services, workplaces, educational facilities and community facilities.

During the construction phase, HGV traffic, general delivery traffic and site operatives will all be required to travel to and from the Site. The construction phase traffic will travel to and from the study area via the N67 and the N69 National Roads.

The transport assessment finds that although construction activity will cause an increase in traffic, it will not lead to congestion. The low existing number of vehicles using these roads means that even with traffic increases these junctions do not become congested. Therefore, it is expected that there will be a limited effect on the ability of residents to access healthcare and social facilities in the study area. The potential health impact during construction related to access to healthcare services and other social infrastructure is therefore assessed to be Neutral (0) and will result in a Not Significant effect.

Air Quality, Noise, and Neighbourhood Amenity

The quality of the local environment can have a significant impact on physical and mental health. Pollution caused by traffic and commercial activity can result in poor air quality, noise nuisance and vibration. Poor air quality is linked to occurrences of chronic lung disease (chronic bronchitis or emphysema), heart conditions and asthma levels among children and young people. Noise pollution can have a detrimental impact on health resulting in sleep disturbance, cardiovascular and psychophysiological effects. Good design and the separation of land uses can lessen noise impacts³.

An assessment of the impact of the Proposed Development on air quality is provided in Chapter 7 (Air Quality). The assessment finds that there is a Negligible to Low risk of dust impacts occurring during construction which could affect human health due to the limited number of receptors in close proximity to dust sources. The assessment identifies an appropriate level of mitigation that will be able to control impacts to the extent that any effect is not significant.

An assessment of noise generation caused by construction traffic is provided in Chapter 11 (Noise and Vibration). The assessment predicts that there will be a Minor impact (Not Significant) from traffic noise levels is expected during the construction phase, these impacts would be defined as Imperceptible and Temporary.

A Construction Environmental Management Plan (CEMP) has been prepared and will be further updated and expanded by the Contractor in accordance with any conditions of the grant of planning. The CEMP will also ensure no impact on any vector that would pose a significant risk to human health. Therefore, the impact of the Proposed Development on air quality, noise, and neighbourhood amenity as a determinant of human health and well-being is assessed to be Neutral (0) and will result in a Not Significant effect.

Climate Change

An assessment of the likely climate change effects arising from the construction activities of the Proposed Development is provided in Chapter 17 (Climate).

Construction is estimated to emit approximately 10,399 tonnes of greenhouse gases (GHG). Emissions from the construction of the Proposed Development contribute considerably less than 1% of any carbon budget over the construction period in comparison to Ireland's national carbon budgets.

However, increase in GHG emissions is expected as a result of the construction of the Proposed Development (Chapter 17 (Climate)), and therefore the impact of the Proposed Development in terms of climate change as a determinant of human health and well-being during construction is assessed to be Negative (-). This will result in a Not Significant effect.

15.5.2 Operational Phase

15.5.2.1 Land Use

As previously noted, the Proposed Development is located in a primarily rural area. The Site of the Proposed Development is currently brownfield and is managed by the Applicant.

There will be no requirement to purchase or to gain access to any other land not under the management of the Applicant for the operation of the Proposed Development. During the operational phase, the land use will change from a brownfield site to an industrial / power infrastructure development. The operational phase will have a Slight, Long-Term impact on land use. However, there will be no effects associated with land use ownership.

15.5.2.2 Severance

The operation of the Proposed Development will require staff to travel to and from the Site, however, it is expected that staff travelling to the Site already do so due to existing operations.

The operational phase of the Proposed Development will generate up to 20 LDV (Light Duty Vehicle) and 18 HDV (Heavy Duty Vehicles) for the delivery of HVO, arrival trips per day. This increase in vehicles on the road network is minimal and has been scoped out of the traffic and transport assessment (Chapter 14 (Traffic and Transport)). Therefore, it is unlikely that there will be any traffic congestion which may deter local residents from accessing workplaces, educational facilities, or community facilities. The Proposed Development is assessed to have no impact on severance between local residents in the study area and the facilities which they use during the operational phase.

15.5.2.3 Employment

During the operational phase, the Proposed Development will be operated, maintained, and managed by the Applicant's personnel during normal operation. The annual upkeep and outages of the plant will require outsourcing specialised workers which will constitute a Slight, Long-Term and Positive effect on employment.

15.5.2.4 Human Health

Access to Open Space and Nature

Similar to the construction phase, the Proposed Development will operate within the existing boundary of the SSE Tarbert site and will not require the demolition or provision of open and natural spaces.

It is also important to assess whether the Proposed Development physically constrains people from accessing open and natural spaces nearby. As noted in the severance assessment above, there will be

no impact on severance between local residents in the study area and the facilities which they use during the operational phase (including open spaces).

Therefore, in regard to impacts on the character of open and natural spaces and whether they remain welcoming, safe and accessible for all, there will be no significant noise, air quality or traffic effects likely to arise during the operational phase. The impact of the Proposed Development on access to open space and nature as a determinant of human health and well-being during the operational phase is assessed to be Neutral (0) and will result in a Not Significant effect.

Access to Healthcare Services and Other Social Infrastructure

During the operational phase, some additional staff will be required to travel to and from the Site. The very small number of additional trips expected (noted in the severance assessment), is not expected to lead to congestion, and it will not impact accessibility between local residents and the healthcare facilities and social infrastructure they use in the study area. The potential health impact during operation related to access to healthcare services and social infrastructure is therefore assessed to be Neutral (0) and will result in a Not Significant effect.

Air Quality, Noise and Neighbourhood Amenity

It is expected that the Proposed Development will not result in any significant change to the local air quality or noise environment during operation. Therefore, the impact of the Proposed Development on air quality, noise and neighbourhood amenity as a determinant of human health and well-being is assessed to be Neutral (0).

Climate Change

In light of Ireland's national climate objective to achieve net zero carbon by 2050, the GHG impact of the Proposed Development (construction and operational) have been reviewed in line with Ireland's current carbon budgets to 2035.

Assessing the significance of GHG emissions the Proposed Development is considered to be Minor Adverse, and therefore Not Significant when considering the ability of Ireland to achieve its stated net zero pathway.

When assessing the significance of the emissions associated with the Proposed Development it is important to consider the emissions that would arise in the case of a 'do-nothing' scenario where the Proposed Development does not go ahead. In this case, energy would need to be generated from an alternative source. For this assessment, the emissions associated with the energy output of the OCGT is compared to emissions from sourcing equivalent energy (630,00 MWh) from a diesel fuelled OCGT, a natural gas fuelled OCGT and the Irish electricity grid as of 2023. The efficiency of the OCGT turbine is assumed to be 39%. This comparison only considers the embodied and Well to Tank (WTT) emissions associated with each fuel source.

The Total Lifecycle GHGs from operating the Proposed Development over its (at least) 25-year life are estimated to be 1,533,021 tonnes of CO₂ or equivalent.

There is a clear link between climate change and health. An increase in GHG emissions as a result of the Proposed Development (Chapter 17 (Climate)), and therefore the impact of the Proposed Development in terms of climate change as a determinant of human health and well-being during

operation is assessed to be Negative (-), however Not Significant when considering the ability of Ireland to achieve its stated net zero pathway.

15.5.3 Decommissioning Phase

It is expected that decommissioning will take up to one year. The decommissioning of the Proposed Development will be subject to approvals from the relevant authorities including KCC and the EPA prior to any works commencing. Effects arising from the process of decommissioning of the Proposed Development are considered to be of a similar nature and duration to those arising from the construction phase and therefore have not been considered separately.

15.6 Mitigation Measures

A CEMP has been prepared as part of the planning application. In advance of work starting on-site, the appointed Contractor will as appropriate, expand and update the CEMP into a Contractor's CEMP to ensure that there are no impacts on any vector that would pose a risk to human health.

No additional mitigation measures related to Population and Human Health are proposed during the operation of the Proposed Development, however mitigation for air quality, noise and vibration, traffic and transport and climate, is discussed in Chapter 7 (Air Quality), Chapter 11 (Noise and Vibration), Chapter 14 (Traffic) and Chapter 17 (Climate).

No additional monitoring measures are proposed.

15.7 Cumulative Impacts

This section assesses the potential impacts of the Proposed Development in-combination with the potential impacts of other development schemes (referred to as 'cumulative schemes') within the surrounding area.

A desktop planning history search undertaken in October 2023 using the Co. Kerry, Co. Clare and Co. Limerick online Planning Systems and An Bord Pleanála noted a number of planning applications which could combine with the Proposed Development to create a cumulative impact upon population and human health (refer to EIAR Volume I Chapter 4).

Of relevance to potential significant cumulative effects on population and human health, the construction of a Temporary Emergency Generation project (Tarbert TEG), Planning Ref. EE08.315838 at the SSE Tarbert site has commenced and construction works are scheduled to be complete in advance of construction of the Proposed Development commencing. An application submitted by EirGrid for cabling works, Planning Ref. 23350 which is not yet determined (at the time this EIAR was written) is also within the SSE Tarbert site, the construction programme of when these works would commence are unknown but could potentially overlap with the construction phase of the Proposed Development.

The SSE Renewables Limited project (Planning Ref. 18392) for a battery storage facility within the SSE Tarbert site has a ten-year planning consent and will be constructed on the parcel of land currently being utilised for the TEG project. The TEG project is due to be decommissioned and dismantled in 2028/2029, meaning this battery storage facility could be progressed after the removal of the TEG plant components.

15.7.1 Land Use

The Proposed Development results in no land use impacts. There are subsequently no cumulative land use impacts during either the construction or the operational phases on the land occupied by the Proposed Development and the surrounding area.

15.7.2 Severance

The assessment of Severance is inherently cumulative as the traffic data assessment includes the change in traffic generated by other committed developments. Cumulative impacts are therefore included in the assessment of severance in Sections 15.5.1.2 and 15.5.2.2.

15.7.3 Employment

Construction of the Proposed Development is expected to generate employment. The construction of other committed developments are also expected to lead to employment generation and therefore there could be a cumulative effect on employment of the local workforce.

It is expected that there will be a Slight, Short-Term and Positive cumulative impact on construction related employment within the local area.

15.7.4 Human Health

The cumulative assessment of 'Access to Healthcare Services and other Social Infrastructure' is as per the cumulative assessment of 'Severance' set out previously.

The assessment of 'access to open space and nature' is based on assessments provided in Chapter 7 (Air Quality), Chapter 11 (Noise and Vibration), and Chapter 14 (Traffic and Transport). As noted in these chapters, there are no anticipated cumulative effects on access to open space and nature from a human health perspective.

For the assessment of 'Air Quality, Noise and Neighbourhood Amenity', there are no anticipated cumulative noise or dust effects during either the construction or operational phases.

The assessment of 'Climate Change' is based on the GHG emissions assessment provided in Chapter 17 (Climate). The GHG assessment is by nature a cumulative assessment as it considers whether the Proposed Development will contribute significantly to emissions on a national level.

15.8 Do Nothing Scenario

The 'do nothing' scenario would not result in any significant changes to the baseline population and human health receptors.

15.9 Residual Impacts and Summary

As part of the assessment of impacts on population and human health, the overall classification and significance of each effect has been assessed across the study area. A summary of the potential effects on population and human health is identified in Table 15.15 and Table 15.16.

Table 15.15: Summary of Potential Effects on Population Receptors

Population Determinant	Sensitivity of Receptor	Nature of Effect / Geographic Scale	Magnitude of Impact	Initial Classification of Effect (with embedded mitigation)	Additional Mitigation	Residual Effect Classification and Significance
Construction						
Land use	N/A	N/A	N/A	No Impact	None	No Impact
Severance	N/A	Temporary / Local	Negligible	Imperceptible	None	Imperceptible
Employment	N/A	Temporary / Local	Low	Slight / Positive	None	Slight / Positive
Operation						
Land use	N/A	N/A	N/A	No Impact	None	No Impact
Severance	N/A	N/A	N/A	No Impact	None	No Impact
Employment	N/A	N/A	N/A	No Impact	None	No Impact

Table 15.16: Summary of Potential Effects on Human Health Receptors

Health Determinant	Potential Health Impact	Additional Mitigation	Residual Effect Classification
Construction			
Access to Open Space and Nature	Neutral (0)	None	Neutral (0) / Not Significant
Access to healthcare services and other social infrastructure	Neutral (0)	None	Neutral (0) / Not Significant
Air Quality, Noise and Neighbourhood Amenity	Neutral (0)	None	Neutral (0) / Not Significant
Climate Change	Negative (-)	None	Not Significant
Operation			
Access to Open Space and Nature	Neutral (0)	None	Neutral (0) / Not Significant
Access to healthcare services and other social infrastructure	Neutral (0)	None	Neutral (0) / Not Significant
Air Quality, Noise and Neighbourhood Amenity	Neutral (0)	None	Neutral (0) / Not Significant
Climate Change	Negative (-)	None	Not Significant

15.10 References

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