

ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE DEMOLITION OF AGRICULTURAL STRUCTURES AND THE DEVELOPMENT OF A MATERIALS RECOVERY FACILITY AT DERRYARKIN, RHODE, CO. OFFALY

VOLUME 2 – MAIN BODY OF THE EIAR CHAPTER 7 – POPULATION AND HUMAN HEALTH

Prepared for: Oxygen Environmental Unlimited Company



Date: September 2022

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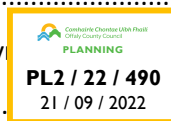
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7. POPULATION AND HUMAN HEALTH

7.1 Introduction

The proposed development is defined in Chapter 1 – Introduction and a detailed description of the proposed development is set out in Chapter 4 - Existing and Proposed Development. This chapter has been prepared to examine the potential effects of the development of the proposed Materials Recovery Facility at Derryarkin, Co. Offaly on the Population and Human Health in the local environment, referred to in this chapter as the study area.

Directive 2011/92/EU, as amended by Directive 2014/52/EU requires the assessment of the potential impact of the proposed development on Population and Human Health. Population and Human Health comprise a significant element of the overall environment. In carrying out a new development, one of the principal concentrations is that people should experience no diminution in their quality of life, their health and well-being or economic well-being because of the construction and operational phases of a development.

Ultimately, the effects of a potential development on the environment may impinge upon Population and Human Health, directly and indirectly, positively and negatively. The key issues examined in this section of the EIAR include population, land use, economic activity and employment, human health and safety, and recreation, amenity and tourism (including landscape and visual impacts).

The predominant land use in the vicinity of the development site is either bog or agricultural farmland. The area in which the development site is located is sparsely populated.

The potential significant impacts of the proposed development are considered, having taken account of mitigation measures to reduce or eliminate any residual impacts on Population and Human Health.

7.1.1 Statement of Competency

This chapter of the EIAR was prepared by Richard Deeney (B.Sc. CEnv. MIEMA, MIEnvSc). Richard is a Senior Environmental Scientist with 9 years' consultancy experience in Ireland. Richard has completed numerous impact assessments for a wide variety of EIAR's for projects in Ireland. Richard has extensive experience scoping, planning, coordinating and executing EIS's/EIAR's for various types of industry, including metal processing facilities, quarries, waste facilities, landfills, power plants, holiday parks and wind farm development. Richard has a vast amount of experience completing Population and Human Health Impact Assessments for EIAR's.

7.2 Study Area

The study area for the population and human health chapter of this EIAR is identified in Figure 7-1 and is defined in terms of the District Electoral Divisions (DEDs) within 500 m of the proposed development site.

The proposed development site is wholly situated in the Croghan Electoral Division. The Knockdrin Electoral Division is situated ca. 350 metres north-east of the site

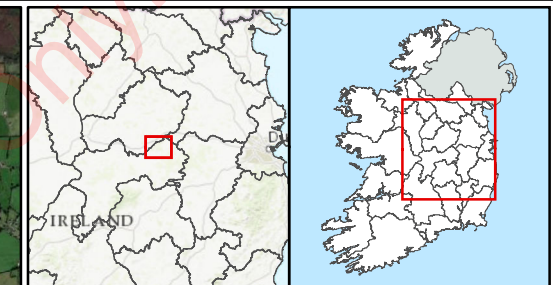





The study area for this Population and Human Health Impact Assessment therefore constitutes the Croghan and Knockdrin Electoral Divisions. The total study area comprises a total land area of 58.6 km².

Figure 7.1 shows the boundary of the determined study area relative to the development site.

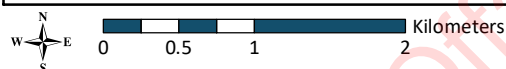
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- Legend**
- Study Area
 - Planning Boundary
 - Site Electoral Divisions


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| | |
|--|--|
| TITLE: | |
| Population and Human Health Study Area | |
| PROJECT: | |
| Oxigen Derrynarkin Materials Recovery Facility | |
| FIGURE NO: | 7.1 |
| CLIENT: | Oxigen Environmental Unlimited Company |
| SCALE: | 1:50000 |
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The site is remote from sensitive receptors. The nearest sensitive receptor is a one-off dwelling located ca. 755 metres to the south of the proposed development site. Other one-off dwellings are located ca. 760 metres to the south west, 770 metres to the south and ca. 890 metres to the south west. There are no other sensitive receptors within 1 km of the proposed development site.

The nearest area of human settlement is the village of Rochfortbridge which is situated ca. 4 km to the north. The village of Rhode is situated ca. 5.5 km to the south east of the development site.

Table 7-1 details the sensitive receptors situated within 1 km of the development site:

Table 7-1: Sensitive Receptors within the Vicinity of the Proposed Development Site

| Receptor ID | Description | Easting | Northing | Distance to Development Site |
|-------------|------------------|---------|----------|------------------------------|
| R1 | One off dwelling | 248038 | 236167 | Ca. 760 metres |
| R2 | One off dwelling | 248639 | 235957 | Ca. 755 metres |
| R3 | One off dwelling | 248552 | 235952 | Ca. 770 metres |
| R4 | One off dwelling | 247936 | 236085 | Ca. 890 metres |

7.3 Assessment Methodology

7.3.1 Overview

The following steps were carried out to assess how the proposed development at Derryarkin, Co. Offaly may impact upon population and human health in the receiving environment:

1. A walkover survey of the site and the local area was undertaken to ascertain the characteristics of the human environment on and surrounding the development site.
2. A desk-based study reviewing information and data from various relevant sources.
3. An evaluation of each proposed development and their impact upon aspects relating to Population and Human Health.
4. The identification of mitigation measures to minimize and control potential adverse impacts upon Population and Human Health aspects.
5. An assessment of residual impacts on population and human health associated with each proposed development.
6. Preparation of a Population and Human Health chapter for the EIA.



7.3.2 Relevant Guidance, Discussion Documents, Legislation and Policy

In addition to the EIA Guidance listed in Chapter 1, other reference documents used in the preparation of this chapter included the following:

- Health in Environmental Impact Assessment, A Primer for a Proportionate Approach (IEMA 2017);
- Health Impact Assessment in Planning, Thought pieces from UK practice (IEMA, 2020);
- Offaly County Development Plan 2021 – 2027;
- Project Ireland 2040 – National Planning Framework;
- Project Ireland 2040 – The Midlands;
- Eastern and Midlands Regional Assembly Regional Spatial and Economic Strategy (RSES);
- Mapping and aerial photography for the local area and wider region;
- Population information from the Central Statistics Office (CSO) for the geographical area in which the site is located, as detailed in the CSO’s Census Report for 2016;
- Employment statistics as detailed in the CSO’s Live Register and most recent Labour Force Survey;
- Health in Ireland, Key Trends 2019 (Department of Health, 2019);
- 2017 Topline Tourism Performance by Region;
- Failte Ireland Tourism Barometer September 2019;
- Failte Ireland Tourism Facts 2019.

Further information on relevant key policy documents as detailed above can be found in Chapter 5 Planning and Policy Context of this EIA.

7.3.3 Other Relevant Impact Assessment Chapters forming part of this EIA

Several other Impact Assessment chapters contained in this EIA are considered to be relevant due to the interrelationship between the impacts described in these chapters and population and human health. For example, Air Quality Impacts described in Chapter 11 of this EIA Air Quality and Climate have the potential to impinge upon human respiratory health, or Noise Impacts described in Chapter 12 of the EIA have the potential to cause nuisance for sensitive human receptors.

The following chapters have been considered in-depth whilst completing the Population and Human Health Impact Assessment due to impact interrelationships that exist between the mentioned chapter and the population and human health chapter.

- Chapter 9 - Soils, Geology and Hydrogeology;
- Chapter 10 - Hydrology and Surface Water;
- Chapter 11 - Air Quality and Climate;
- Chapter 12 - Noise and Vibration;
- Chapter 13 - Traffic and Transportation;
- Chapter 15 - Landscape and Visual Impact.



7.3.4 Consultation

The scope for this assessment has been informed by consultation with statutory consultees, bodies with environmental responsibility and other interested parties as summarised in Chapter 6 – Scoping and Consultation. Two pre-application consultation meetings regarding the project were held with Offaly County Council. One pre-application consultation meeting was held with the EPA regarding the operation of the proposed facility (which will operate under an Industrial Emissions (IE) licence enforced by the EPA during Phase 2 of operations). The views of stakeholders regarding the proposed development were also sought. pre-application consultation discussions and stakeholder engagement responses which relate to potential human health impacts have been considered in the preparation of this chapter.

7.3.5 Impact Appraisal Methodology

The following steps were carried out to ascertain and characterize in detail the potential impacts associated with the proposed development upon population and human health aspects.

1. The identification of relevant population and human health aspects to be considered during the impact assessment process.
2. An in-depth evaluation of the proposed development to take place at the site in Derryarkin, Co. Offaly.
3. The identification of potential significant effects upon the defined population and human health aspects.
4. The characterisation of identified potential impacts, having regard to the evaluation criteria as well as relevant health-based standards.
5. The identification of suitable mitigation measures for minimising and controlling potential adverse impacts upon population and human health.
6. The identification and characterization of residual (post-mitigation) impacts on population and human health associated with the proposed development.

7.3.6 Evaluation Criteria



The assessment of effects has been undertaken having regard to the evaluation criteria defined in the EPA's Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (2022). These evaluation criteria are re-produced in Chapter 1 of this EIAR.

Health based standards relating to other environmental topic chapters have also been considered when evaluating human health impacts. Health based standards by their nature are set out to protect against human health effects. The level at which the standard is set is chosen to protect the vulnerable, not the robust. Detail regarding the health-based standards taken into direct consideration in other relevant EIAR chapters is provided below:

- Chapter 9 - Geology and Hydrogeology:
 - Potential impacts on soil, geological and hydrogeological elements of the receiving environment associated with the proposed development were assessed in accordance with relevant guidance. During this assessment baseline groundwater quality monitoring results were compared with human health standards such as Groundwater Threshold Values (GTV's) (as defined in the Groundwater Regulations, as amended) and EPA Interim Guidelines Values (IGV's).



- Chapter 10 - Hydrology and Surface Water Quality:
 - An assessment of hydrological/surface water impacts associated with the proposed development was carried out. A desk top study including a review of local hydrology and surface waters as well the carrying out of baseline water quality monitoring was carried out as part to inform the assessment. The surface water quality monitoring results are compared to the quality standards as set out in the European Communities Environmental Objectives (Surface Waters) Regulations 2009, (S.I. No. 272/2009), as amended, and the European Union (Drinking Water) Regulations 2014. Both quality standards take into account the effects of surface water quality on human health.
- Chapter 11 - Air Quality and Climate:
 - Air emission modelling was undertaken for odour and traffic emissions related to the project. Odour Assessment Criteria defined in this chapter were considered when assessing potential impacts of odour associated with the proposed development. Ambient air quality standards defined under the Air Quality Standards Regulations 2011 were considered when assessing potential impacts of traffic emissions associated with the proposed development.
- Chapter 12 - Noise and Vibration:
 - The receiving noise and vibration environment at the site was characterised through baseline noise monitoring in accordance with the EPA's Noise Guidance Note 4 (NG4) (2016) guidance. Prediction of the construction and operational noise levels at the nearby noise sensitive locations were calculated having regard to noise limits (at Noise Sensitive Locations) defined in the EPA's NG4 guidance. These limits were set taking into account WHO (2000) Guidelines for Community Noise which recommends "At night-time, outside sound levels about 1 metre from facades of living spaces should not exceed 45 dB LAeq, so that people may sleep with bedroom windows open." It also recommends that "to protect the majority of people from being seriously annoyed during the daytime, the outdoor sound level from steady, continuous noise should not exceed 55 dB LAeq on balconies, terraces and in outdoor living areas." Noise prediction results were compared with these health-related noise standards to determine the potential for adverse noise effects (E.g. in terms of nuisance) due to the proposed development on people present at noise sensitive locations in the vicinity of the development site.
- Chapter 13 - Traffic and Transportation:
 - This assessment has been undertaken using a combination of desk studies, the examination of existing traffic count data, the examination of traffic movements associated with the proposed development, as well as consultation with statutory agencies and local authority representatives in line with current best practice and policy advice. An assessment of potential impacts on the road network performance and condition was then carried out having due regard to human health and safety aspects as well as latest relevant guidance documents such as the Design Manual for Urban Roads and Streets.
- Chapter 15 - Landscape and Visual Impact:
 - Both desk based and field-based assessment of the baseline landscape and visual environment were completed. Guidance from IEMA (2013), "Institute of Environmental Management and Assessment (IEMA) Guidelines for Landscape and Visual Assessment (3rd edition 2013)" was used in undertaking the impact assessment. It takes into account the fact that sensitivity of visual receptors has an anthropocentric basis, a potential impact on amenity and health and wellbeing resulting from changes in the visual environment.



This guidance considers factors such as the perceived quality and values associated with the view, the landscape context of the viewer, the likely activity they are engaged in and whether this heightens their awareness of the surrounding landscape.

While every human being is considered a sensitive receptor, clearly the vulnerable are the most sensitive particularly older people and younger children. Older people in general have greater sensitivity to air pollution and potential effects on the respiratory system and cardiovascular system for example. There are other vulnerable groups also, for example, the people with certain disabilities or those with mental illness. It is noteworthy for the purposes of this assessment that there are no schools, hospitals, health services, sports ground or community services located within 2 km of the proposed development site.

7.4 Baseline Environment

The following relevant population and human health aspects have been identified, Population, Land Use, Economic Activity and Employment, Human Health and Safety and Recreation, Amenity and Tourism. This section describes the existing, receiving environment in which the proposed development is located having regard to these identified aspects.

7.4.1 Population

The Central Statistics Office (CSO) provides data on population and socio-economic trends by region, county, town and at local levels. The most recent census by the CSO was undertaken in 2022 however only preliminary, high-level data associated with this census is available at the time of writing. The most recent census, for which comprehensive data is available, is the 2016 census. The development site is contained within the Croghan Electoral District. The Knockdrin Electoral District is situated ca. 350 metres to the east.

These electoral divisions constitute the study area for the purpose of this assessment. The CSO population statistics relevant to these areas, the Statistical Small Area in which the development site is located defined by CSO, and the wider Offaly area are set out in Table 7-2:

Table 7-2: Population Change 2011 and 2016

| Area | Number of Persons | | |
|------------------------------|-------------------|-----------|--------------------------------|
| | 2011 | 2016 | % change between 2011 and 2016 |
| Ireland – State (EY004) | 4,588,252 | 4,761,865 | + 3.8% |
| Offaly | 76,687 | 77,961 | + 1.7% |
| ED Croghan | 526 | 547 | +4.0% |
| ED Knockdrin | 189 | 204 | +7.9% |
| Small Area 187024001, Offaly | - | 314 | - |



From a review of Table 7-2, it is evident that the population of the State showed a growth of 3.8% from the period 2011 to 2016. Population growth within County Offaly was lower than that for the State over the same period, with an increase of 1.7%. Croghan ED experienced a 4% increase in population over the same period, in line with national population growth levels. Knockdrin ED experienced a more significant increase in population over the same period, with an increase of 7.9%.

It can generally be seen that the study area is sparsely populated, which is expected given the rural nature of the wider area. The area in the immediate vicinity of the development site is even more remote with only four one off dwellings situated within 1 km of the site.

There are already some levels of commuting to Dublin from Offaly for work and it is expected that population in the County will grow in the years to come as the Greater Dublin Commuter Belt expands and people move out from Dublin City. The National Planning Framework (NPF) Project Ireland 2040 also has the broad aim to ensure a more balanced growth away from the overconcentration of population, homes and jobs in the Greater Dublin Area which may have an influence on population in the region in the years ahead.

It is projected in the Eastern and Midlands Regional Assembly Regional and Spatial Economic Strategy that Population levels in the Midlands will grow from 292,500 in 2016 to 318,500 - 324,500 in 2026 and 329,500 - 337,000 in 2031.

In 2011 Census divisions to 'Small Areas' were established to give greater clarity to population trends. The Small Area code 187024001 covers the study area. The Small Area populations recorded in the study areas are relatively low and reflect the predominantly rural nature of the area.

7.4.2 Land Use



The existing site comprises a disused agricultural site. The site is currently unzoned in accordance with the Offaly County Development Plan 2021 - 2027.

The site is located in a largely rural/agricultural setting with some industrial/commercial activity in the wider area. A piggery operated under an IE Licence from the EPA (Licence Reference: P0938) is located immediately north/north-west of the development site. Access to this pig farm is via private access road which bounds the development site to the east and north. An active quarry / concrete batching facility / soil recovery facility is located c.80m west of the site (at its closest point). This facility is operated by Kilmurray Pre-Cast Concrete Ltd. The Yellow River Windfarm project, which has been granted planning consent, is currently being constructed in the local area. SSE Renewables are responsible for the construction and operation of this wind farm. The wind farm will consist of 32 wind turbines across a number of townlands, some of which will be located in relatively close proximity to the proposed site in the townland of Derryarkin to the north, west and south east. Large sections of the wider area surrounding the site consist of peatlands which have been subject to peat extraction by Bord na Móna.

The wider area surrounding the site is characterized by peatland and agricultural land in all cardinal directions. The agricultural land is a patchwork of small to large sized fields divided by hedgerows, which are used for both tillage and crop production and animal grazing. Areas of forestry are also found in the in the study area, with significant amounts of land forested by Bord na Móna to the north east of the development (the other side of the R400 regional road). Bord na Móna's Drumman timber storage, seasoning and chipping facility is situated ca. 1.5 km north east of the development site. A significant portion of surrounding lands also consist of peatlands which have been subject to peat extraction undertaken by Bord na Móna. Derryarkin Motocross Track is situated ca. 1.8 km north of the site at its nearest point.



The site is accessed via a site access road that connects to the R400 Regional Road ca. 2.2 km west of the site. The R400 connects to the M6 Motorway, 2.9 km north of the site.

The area in which the development site is located is sparsely populated with interspersed one-off housing. The nearest population centre is the village of Rochfortbridge which is situated ca. 4 km to the north and which is designated as a Tier 4 Local Service Town under the Westmeath County Development Plan 2021 - 2027. The village of Rhode is situated ca. 5.5 km to the south east of the development site and is designated as a Tier 5 village under the Offaly County Development Plan 2021 – 2027.

7.4.3 Economic Activity and Employment

Socioeconomics refers to the interaction between social and economic factors. The Proposed Development nature will have both economic and social impacts.

The number of people on the Live Register in the Midlands and Nationally for June 2019, June 2020, June 2021 and June 2022 for comparison is shown in the Table 7-3:

Table 7-3: Live Register Figures June 2019, June 2020, June 2021 and June 2022 for County Offaly and Nationally

| | June 2019 | June 2020 | Percentage Change | June 2021 | Percentage Change | June 2022 | Percentage Change |
|---------|-----------|-----------|-------------------|-----------|-------------------|-----------|-------------------|
| Midland | 8,184 | 8,315 | +1.6% | 6,897 | -17.0% | 6,891 | -0.09% |
| Ireland | 197,108 | 205,209 | +4.1% | 175,281 | -14.6% | 186,819 | +6.6% |

Nationally, unemployment figures rose between June 2019 and June 2020 with the reason for this being the loss of employment associated with the Covid 19 Pandemic during its very initial stages. Unemployment figures reduced again substantially however from June 2020 to June 2021. A further moderate reduction in unemployment was experienced between June 2021 and May 2022.

Unemployment figures rose in Offaly from June 2019 to June 2020, although to a lesser extent than levels seen nationally. This may be due to the predominant employment types in Offaly (such as Manufacturing, Commerce and Trade and Professional Services) being less affected by the impacts of the Pandemic in comparison with other sectors such as Tourism or Hospitality. Unemployment figures subsequently dropped in line with national figures from June 2020 to June 2021. A significant increase in national unemployment figures occurred between June 2021 and June 2022, which was mainly due to the end of the national Employment Wage Subsidy Scheme. Only a further minor reduction in unemployment in the Midlands was experienced between June 2021 and June 2022, which again may be reflective of Offaly’s relatively smaller tourism and hospitality sector.



A breakdown of employment recorded in the 2016 census for the electoral divisions of Croghan, Knockdrin and County Offaly is shown in the Table 7-4:

Table 7-4: Employment by Sector

| Sector | Croghan | | Knockdrin | | Offaly | |
|-----------------------------------|------------|-------------|-----------|---------------|---------------|-------------|
| Agriculture, forestry and fishing | 27 | 11.7% | 7 | 10.3% | 2,217 | 7.3% |
| Building and construction | 20 | 8.7% | 8 | 11.8% | 1,852 | 6.1% |
| Manufacturing industries | 47 | 20.4% | 15 | 22.1% | 5,117 | 16.9% |
| Commerce and trade | 44 | 19.1% | 13 | 19.1% | 5,970 | 19.7% |
| Transport and communications | 9 | 3.9% | 0 | 0.0% | 1,497 | 4.9% |
| Public administration | 14 | 6.1% | 2 | 2.9% | 1,834 | 6.0% |
| Professional services | 46 | 20.0% | 10 | 14.7% | 6,824 | 22.5% |
| Other | 23 | 10.0% | 13 | 19.1% | 4,976 | 16.4% |
| Total | 230 | 100% | 68 | 100.0% | 30,287 | 100% |

As can be seen from Table 7-4, the predominant sectors in terms of employment in County Offaly and the Croghan and Knockdrin Electoral Divisions are the Manufacturing, Commerce and Trade and Professional Services sectors. There are no substantial employment centres within the study area. The piggery immediately to the north west of the development site and the quarry immediately to the west of the site are significant employers in the local to the proposed development site. .

7.4.4 Human Health and Safety

The Department of Health's report 'Health in Ireland, Key Trends 2019' (Department of Health, 2019)(last reporting year) provides summary statistics on health and health care in Ireland over the past ten years. Population health at the national level presents a picture of decreasing mortality rates and high self-perceived health over the past ten years.

Ireland is among the top performers for treatable/avoidable mortality, self-perceived health status and stroke mortality rates, but is below the EU average for respiratory and acute myocardial infarction (AMI) mortality rates. Life expectancy continues to improve in Ireland. Male life expectancy has increased by 3 years and female life expectancy by almost 2 years since 2007. The gap between the life expectancy of men and women also continues to narrow, with the latest available data showing this gap now at its lowest point since the 1950's with women's life expectancy 3.6 years more than males. These improvements are largely due to lower levels of mortality and better survival from conditions such as heart disease and cancer affecting older age groups. The proposed development will be constructed and operated within this broad context.



7.4.5 Recreation, Amenity and Tourism

The concept of amenity is not defined in Irish planning legislation but a non-legislative definition of amenity states that it is “the pleasant or normally satisfactory aspects of a location which contribute to its overall character and the enjoyment of residents or visitors” (Parker, Key Concepts in Planning, 2012). This contributes to the overall wellbeing of a population and is considered an aspect of human health.

Amenity is generally taken to comprise of several elements that, in combination, create the attractive aspect of the location in question. These elements include:

1. Visual appearance/landscape
2. Traffic levels
3. Noise levels
4. Air quality
5. Recreational and Tourism
6. Open spaces

The baseline environment for elements 1 – 4 above are addressed in further detail in Chapter 11 Air Quality and Climate, Chapter 12 Noise and Vibration, Chapter 13 Traffic and Transport, and Chapter 15 Landscape and Visual Impact, in Volume 2 of this EIAR. Elements 5 and 6 are discussed hereunder.

7.4.5.1 *Recreation and Tourism*

Recreation is a vital component of any society or community and is key to the well-being of humans. Several recreational and sporting activities is available to people in the wider region including walking, cycling, horse riding, team sports and pitch putt. Various sports grounds, playing fields, parkland areas, playground and community sports facilities and a pitch and putt can be found in and around the town of Rochfortbridge to the north of the development site. Various sports grounds, playing fields, parkland areas, playground and community sports facilities can be found in Rhode also. A GAA Club and associated sports grounds and facilities can be found in both Rochfortbridge and Rhode. The Grand Canal Way is situated ca. 6.3 km to the south. This way is utilized by walker and hikers. Bord na Móna, in collaboration with Offaly County Council and other stakeholders intend on develop a cycle trail along the Grand Canal in Offaly.

Tourism is one of the major contributors to the national economy and is a significant source of full time and seasonal employment. According to Failte Irelands Tourism Barometer for 2019 however (the last reporting prior to Covid 19), the tourism industry has run into a number of challenges compared to previous years. 31% of tourism business welcomed more visitors compared to 2018, 33% have had a similar number, whilst 36% have seen a decrease in visitor numbers. There has been a reported decrease in visitors from Britain and Northern Ireland however visitor numbers from the domestic market and from North America have remained steady, which has alleviated the impact of decreasing visitor numbers from Britain and Northern Ireland. Rising operating costs, perceived low-priced competition and the restoration of the VAT rate from 9% to 13.5% have all been frequently cited as impacting performance of the sector.

Expenditure by tourists visiting Ireland is estimated to have been worth €7.7 billion in 2019, representing a growth of 1.3% on 2018 (Fáilte Ireland, 2019).





In 2017 (the last reporting year for the region in question), 218,000 overseas visitors visited the midlands regions, contributing over €85 million to the regional economy (Fáilte Ireland, 2018). County Offaly attracted approximately 52,000 overseas visitors in 2017, generating €16 million to the local economy.

In the County Development Plan 2021 - 2027, Offaly County Council identifies the importance in attracting economic investments to local areas, promoting tourism and providing local services. According to the Offaly County Development Plan 2021 - 2027 the main visitor attractions in County Offaly are the Slieve Bloom Mountains, its Lakelands and Waterways, its Monastic Heritage including Clonmacnoise and its Peatlands including Lough Boora Parklands and Clara Bog Visitor Centre. A wide diversity of recreational and sporting activities is also available to tourists including walking, cycling, golf, angling, and canoeing. A number of festivals and cultural events attract tourists to the county on an annual basis. The festival and event programme varies annually but some of the regular annual festivals include the Birr Vintage Week and Arts Festival, the Slieve Bloom Storytelling Festival, and the Tullamore Agricultural Show.

Offaly is part of 'Ireland's Ancient East', an umbrella destination brand promoted by Fáilte Ireland, to ensure the area is presented in an organised and unified manner which will provide future opportunity for Offaly. The 'Ireland's Ancient East' branding aids in attracting tourist interest in local culture and heritage.

It is noted that there are no high amenity areas or areas that are particularly sensitive from a tourism or recreational perspective present within the vicinity of either development site, with the predominant land uses within the study area consisting of either peatland, forestry or agricultural farmland, with occasional one-off housing.

7.4.5.2 Open Spaces

There are no open amenity spaces such as parks or sports grounds situated within the vicinity of either development site. The nearest open spaces for amenity are GAA pitches and parkland areas situated in the village of Rochfortbridge 4km to the north of the development site and Rhode 5.5 km to the south east of the development site.

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7.5 Potential Impacts

7.5.1 'Do Nothing' Impacts

A 'Do Nothing' scenario will result in the development site remaining as a disused agricultural site. The effects associated with the proposed development (E.g. traffic levels) will not exist. The effects of a Do-Nothing Scenario will for the most part be **Neutral** (i.e. Imperceptible).

If the proposed development does not proceed, potential exists for a deficit in waste management capacity in the Midlands region, having regard to the need for such capacity as defined in Chapter 2 – Need for the Proposed Development of this EIAR. Potential exists for the 'Do Nothing' scenario leading to the creation of a **significant adverse impact** on local population due to limited waste management capacity in the region.

7.5.2 Construction Phase Impacts

7.5.2.1 *Population*

The construction phases of the proposed development will create employment/labour demand for construction workers in the region. In this respect, it is considered that the proposed development will have a **short-term moderate positive impact** in terms of local jobs creation and the local economy.

As a consequence, the construction phases of the proposed development may have a **short-term, negligible to slight, positive impact** on local population numbers. Employees involved in construction may reside locally during the construction of the development.

7.5.2.2 *Land Use*

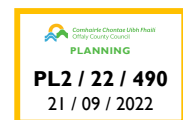
Proposed construction activities the development site will have no impact on surrounding land use. Construction activities will take place within the footprint of the existing site and will be strictly managed and controlled.

There are no sensitive land uses within the vicinity of the site which may be negatively impacted by the proposed construction activities. The nearest sensitive receptor to the site is approximately 755 metres to the south of the site. Construction activities will not have any impact on any sensitive receptor given their proximity away from proposed construction working areas.

This is supported by the results of dust impact analysis undertaken in Chapter 11 – Air and Climate, and the noise prediction modelling undertaken in Chapter 12 Noise and Vibration which show that construction works undertaken as part of the proposed development will not have any significant effect on noise sensitive locations in the vicinity of the development site, and will only have a **short-term, slight, negative impact** on the character of the surrounding noise environment.

7.5.2.3 *Economic Activity and Employment*

Construction activities forming part of the proposed development will secure employment/labour for approximately 30 employees over a 12-month period.





In this respect, it is considered that the proposed development will have a **short-term, moderate, positive impact** in terms of local job creation and the local economy during the construction phase.

The construction phase of the proposed development will positively impact on the existing businesses operating in the area through the potential for direct employment and indirectly through the purchase of construction equipment, tools, materials and ancillary products from suppliers within Offaly and beyond. This will result in a **short-term, slight to moderate, positive effect** for local businesses.

7.5.2.4 Human Health and Safety

The carrying out of construction activities during the construction phases of the proposed development will create health and safety risks for workers involved in construction. In particular, asbestos removal, site clearance and demolition, excavation and earthworks, building construction and associated machinery operations present various health and safety risks for exposed workers including falls, vehicle/mobile plant strikes, falling loads, falling rock or soil, slope failure and excavation collapse.

In the absence of any health and safety management and control/mitigation measures, such works create risks which may lead to **moderate to very significant adverse** effects on worker safety, health and welfare (i.e. serious injury, fatality). Noise emissions associated with construction phase activities may also present a risk to the health and welfare of construction workers in the absence of any mitigation (i.e. damage to hearing, tinnitus).

All health and safety aspects associated with construction activities will be comprehensively managed however in accordance with the provisions of the Safety, Health and Welfare at Work (Construction) Regulations 2013, as amended (S.I. No. 291 of 2013), the Safety, Health and Welfare at Work Act 2015, as amended, and the Safety Health and Welfare at Work (General Application) Regulations 2007, as amended. This will reduce the likelihood of a risk occurring, the severity of a risk if it occurs and will eliminate risks. Further detail on health and safety management measures and mitigation measures with regards to construction safety are contained in Section 7.1.

Due to the lack of any sensitive human receptors within the vicinity of the site, construction phase activities and the associated, potential dust, noise and aqueous emissions will not have an impact on sensitive off-site human receptors as detailed in Table 7-1. For further information on potential dust and noise impacts and mitigation measures please refer to Chapters 11 and 12 of Volume 2 of the EIAR respectively. For further information on potential effects of any aqueous emissions to groundwater or surface water respectively and associated mitigation measures please refer to Chapters 9 and 10 of Volume 2 of this EIAR. The assessment undertaken within these chapters have determined that noise, dust and aqueous emissions relating to proposed development construction activities will be controlled through the adoption of various strict mitigation measures. These mitigation measures, adopted to large extent for the purpose of minimizing impacts on human health and well-being ultimately, are addressed further in Section 7.1 within this chapter.

Construction traffic travelling to and from site will pose a risk to local road users and may lead to **moderate to very significant adverse effects on** road users in the locality (in the absence of any controls / mitigation).

The safe removal and management of Asbestos present in derelict structures on-site will have a **long-term, moderate, positive impact** in terms of human health and safety, given that the risk associated with the presence of this material on-site will be removed.



7.5.3 Recreation, Amenity and Tourism

There are no areas of high amenity or sensitive or valuable recreation or tourism areas within the study area of the development site. As such, construction phase activities will have an **imperceptible** impact on recreation, amenity and tourism in the receiving environment. The assessment carried out in Chapter -15 Landscape and Visual Impact Assessment of Volume 2 of this EIAR has determined that there will be no significant visual or landscape impacts associated with construction phase operations.

7.5.4 Operational Phase Impacts

7.5.4.1 *Population*

The development and operation proposed facility will secure 24 full-time jobs. The operation of the facility will also result in the creation of between 30 to 50 jobs directly on site and indirectly relating to waste collection activities. The securing of this employment will likely have a **long-term, negligible to slight, positive** terms of local population numbers.

7.5.4.2 *Land Use*

Proposed operational phase activities will have not have a significant adverse impact (**imperceptible**) on surrounding land use. All operations will take place within the footprint of the existing site. There are no sensitive land uses within the vicinity of the site which may be negatively impacted by the proposed activities. The nearest residential property to the site is approximately 755 m to the south. Operational phase activities will not have any impact on these sensitive receptors given their proximity away from proposed construction working areas.

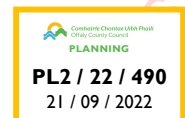
This is supported by the results of dust impact analysis undertaken in Chapter 11 – Air and Climate and by the results of the noise prediction modelling undertaken in Chapter 12 Noise and Vibration which show that facility operations will not result in the generation of noise levels at any sensitive receptors which exceed EPA limits values defined in the EPA’s Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4) (2016).

7.5.4.3 *Economic Activity and Employment*

The development and operation of the proposed facility will secure 24 full-time jobs. The securing of this employment will likely have a **long-term, significant, positive effect** in terms of local job creation and the local economy .

Facility operations will also positively impact existing businesses operating in the area through the potential for direct employment and indirectly through the purchase of goods, materials and support services for the facility from suppliers within Offaly and beyond. This will result in a **long-term, moderate positive effect** for local businesses.

The proposed facility will serve to promote and maximize the recovery and recycling of material in accordance with Circular Economy principles. In addition, the proposed facility will serve to meet project waste management capacity demands into the future. The proposed development has the potential therefore to have a **long-term very significant, positive impact** on the regional economy and economic sustainability.





7.5.4.4 Human Health and Safety

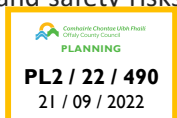
Facility operations will create occupational health and safety risks for on-site employees.

Facility operations will result in the generation of various forms of emissions which may impinge on human health (Namely air emissions, noise emissions, aqueous emission).

Details regarding the nature, characteristics and significant of these emissions is contained in the following EIA Chapters - Chapter 9 Geology and Hydrogeology, Chapter 10 Hydrology and Surface Water Quality, Chapter 11 Air Quality and Climate, and Chapter 12 Noise and Vibration.

Traffic movements to and from the development site may present health and safety risks to the general public using the local road network. (I.e. Road Traffic Accidents, Traffic related emissions) Details regarding potential traffic and transportation impacts are contained in Chapter 13 Traffic and Transportation whilst details on potential traffic emission impacts are contained in Chapter 11 Air Quality and Climate.

All of the above aspects have been addressed in the sections below. Please note that health and safety risks associated with major accidents are addressed in Section 7.1.



Potential Occupational Health and Safety Impacts

The carrying out of facility operations will create health and safety risks for employees. Operating activities such as waste material handling, mobile plant operation, vehicle movements plant and equipment servicing and maintenance, electrical works, mechanical works, and hot works create health and safety risks including risk of falls, risk of falling loads, mobile plant/vehicle strikes, excessively loud noise, electrocution, risk of burns and fire. The occurrence of such risk may result in significant to serious injury or death.

In the absence of any mitigation the health and safety risks presented on-site have the potential to lead to **moderate to very significant, negative impacts** on the safety, health and welfare of site employees (I.e. moderate injury, serious injury, fatality). All health and safety aspects associated with operations will be comprehensively managed in accordance with the Safety, Health and Welfare at Work Act 2005, as amended. Further detail on health and safety management measures and mitigation measures with regards to safe operations at the proposed facility are contained in Section 7.1

Air Emission Impacts on Human Health and Welfare

An assessment of the impact of air emissions on human health was undertaken in Chapter 11 of Volume 2 of this EIA.

Dust impact analysis and odour dispersion modelling and traffic emission modelling was undertaken within this chapter to assess the impact of proposed development emissions on human health. The analysis and modelling undertaken determined that dust, odour and traffic emissions will have **no residual impact** on human health and well-being in the locality.

Impact of Aqueous Emission on Human Health and Welfare

Impacts on receiving surface and groundwater quality have the potential to indirectly impact on drinking water quality which may be consumed and used by humans. An assessment as to the potential impacts on hydrology, hydrogeology and water quality is presented in Chapter 9 Geology and Hydrogeology and Chapter 10 Hydrology and Surface Water.



Facility operations will not give rise to any significant impacts on the hydrological or hydrogeological regimes of the study area or on the quality of the receiving surface or ground waters. Foul water and wash water generated on-site will be contained and site and tankered off-site for safe disposal at an appropriately authorized wastewater treatment plant. These liquids will not be discharged to the environment.

Given the assessments contained in Chapters 9 and 10 undertaken took into account quality standards for the purposes of human health protection defined in the European Union (Drinking Water) Regulations 2014 (S.I. No. 122/2014), as amended, the European Communities Environmental Objectives (Surface Waters) Regulations 2009 (S.I. No. 272/2009), as amended, as well as the European Union Environmental Objectives (Groundwater) Regulations 2016 (S.I. No. 366 / 2016), it can be concluded that potential aqueous emission associated with operations at the proposed facility will not have the potential to have any adverse impact upon human health (**imperceptible** impact).

Noise Impact on Human Health and Welfare.

Noise modelling was undertaken under this EIAR to assess the impact of facility operations on nearby sensitive receptors. The assessment identified that there is potential for an increase in daytime, evening and night time noise levels at the nearest noise sensitive locations in the vicinity of the site. The combined predicted and measured noise impact due to the operation of the proposed facility will not cause an exceedance of relevant noise limits at these noise sensitive locations, however.

Chapter 12 Noise and Vibration of this EIAR has concluded that this increase will have a **Slight impact** on receptors in the vicinity of the site.

Having regard to the conclusions of the noise impact assessment/noise prediction modelling it has been determined that noise associated with facility operations will not have any significant, adverse impact on amenity or human health/welfare in the local area in terms noise nuisance.

Traffic Impacts relevant to Human Health and Safety

The following conclusion was reached in the Traffic and Transportation Chapter of this EIAR (Chapter 13):

'The residual effects on traffic conditions is not significant and can reasonably be categorised as imperceptible. Any residual impacts on traffic capacity on the receiving road network can be categorised similarly.'

Having regard to the above conclusion that traffic impacts are **not significant and imperceptible**, it is concluded that increased traffic associated with the proposed development does not create any additional health and safety risks to the public on the local road network and will not have a significant impact in terms of local road network/traffic safety.

In the absence of any control and mitigation, mobile plant and traffic movement associated with facility operations on-site have the potential to result in **significant to very significant, negative impacts** on human health and well-being (I.e. Serious injury, fatality).



7.5.5 Decommissioning Phase Impacts

A Closure, Restoration and Aftercare Management Plan (CRAMP) will be developed for the proposed facility in accordance with IE licence requirements. Decommissioning/closure, restoration and aftercare of the facility will be carried out in accordance with this plan, which will be submitted to the EPA for approval prior to commencement of operations as part of the IE licence application process. This plan will be reviewed on an annual basis by the applicant. Following cessation of operation on-site, the applicant will be required to decommission, render safe or remove for disposal/recovery any soil, subsoil, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution.

As a result of the operator's plans to manage decommissioning in a careful, comprehensive and environmentally friendly manner, the decommissioning phase of the proposed development will not result in the generation of any emissions or nuisance that will have any significant adverse effect on population and human health in the receiving environment (**imperceptible** impact).

7.5.6 Risk of Major Accidents

As with all waste management facilities a risk of a major accident occurring that could have a negative impact on the receiving environment and human health exists. Potential major accidents which may occur on-site include a major fire, (associated with malfunctioning/defective combustion processes/operations; improper storage of, or fire spread to, large quantities of combustible waste material; and improper delivery, storage and/or use of diesel in the on-site storage tank resulting in loss of containment), contaminated firewater run-off (mixing waste material with firewater applied during a fire and subsequent discharge to the environment, a major plant or traffic accident (associated with associated plant and vehicle operations).

In the absence of any mitigation, such events may have a **significant to profound** impact on human health for on-site staff and visitors and the general public off-site (Serious injury, significant to profound negative environmental effects, fatality, multiple fatalities). All these risks will be comprehensively controlled and mitigated however in accordance with relevant health and safety and environmental legislation. Detail on how such risks are controlled is contained in Section 7.7.2 of this EIA.

According to assessment undertaken in Chapter 10 Hydrology and Surface Water no potential flood risks are present at the development site or its environs.

7.5.7 Cumulative Impacts

Following a review of aerial photography for the study area and the planning register, a number of impactful developments in proximity to the proposed development were identified. A list of impactful development contained within the study area and context is provided in Appendix 1.1 of Volume 3 of this EIA.

These developments may generate a cumulative impact in conjunction with the proposed development.



The cumulative impacts associated with these projects combined with the subject proposed development at has been assessed for various relevant environmental topics in the following chapters:

- Chapter 9, Geology and Hydrogeology – This chapter considered the potential hydrological and surface water impacts associated with the piggery to the north/north west of the site and quarry site to the west, and how these impacts may combine with impacts associated with the proposed development. The assessment concluded that there would be an **Imperceptible** cumulative impact in terms of demands placed on local quarries for aggregate and available void space at licensed facilities during the construction phase of the development. Other aspects of the proposed development are not expected to contribute to any significant cumulative effects on the existing geological or hydrogeological conditions at the proposed site or the study area, given the design of the development and the proposed control and mitigation measures which will be in place.
- Chapter 10 Hydrology and Surface Water Quality – This chapter considered the potential hydrological and surface water impacts associated with the piggery to the north/north west of the site and quarry site to the west, and how these impacts may combine with impacts associated with the proposed development. This chapter concluded that *'The residual significance of the effects of the proposed development on the receiving surface water environment, including the receiving surface water drainage channel, and the downstream Yellow River and River Boyne, will be negligible taking account of mitigation measures.'*
- Chapter 12 Noise and Vibration – The cumulative noise impact from turbines in the vicinity of the site associated with the proposed Yellow River Windfarm and the proposed development was assessed in this chapter. The cumulative impact of the operations of both these developments was determined not to be significant. The predicted noise impact associated with these combined operations does not result in the exceedance of EPA daytime, evening or night-time noise limits.
- Chapter 11 Air and Climate – This chapter considers the existing ambient odour levels associated with the site context, and in particular odour emanating from the existing piggery situated directly to the north/north-west of the development site. This assessment concluded that the impact of piggery odour upon the nearest sensitive receptor is currently imperceptible, and that no significant cumulative impact is predicted as such (I.e. when odour from the piggery facility and the subject waste facility are considered in-combination). This chapter also concluded that no significant cumulative impacts are predicted in terms of air quality or climate given the nature of the proposed development, and potential combining projects in the area.
- Chapter 13 Traffic and Transportation – Existing development traffic and potential future development traffic were considered when carrying out the traffic impact assessment, having regard to TII traffic growth rates. Traffic associated with the expansion of the adjoining quarry site was also considered during this assessment. It was determined that proposed development traffic in combination with existing development traffic and potential future development traffic (inclusive of envisaged quarry related traffic) will not have any significant impact on the local road network (or road safety for humans).
- Chapter 15 Landscape and Visual Impact – This chapter evaluated the cumulative impact on landscape character and visual amenity associated with the proposed development in-combination with surrounding industrial land use activity in the study area. This chapter concluded that *'As the proposed development will represent the replacement of one set of relatively large agri-industrial buildings and structures with a comparably scaled set of industrial buildings and structures, it is unlikely to generate a palpable degree of cumulative impacts.'* It further concluded that *'On balance, the potential for cumulative landscape impacts arising as a result of the proposed development in combination with existing urban development in the study area will not be significant.'*



The carrying out of the proposed development will not give rise to any cumulative health and safety effects when considered together and in combination with other surrounding development. All occupational activities will take place within the confines of the development site and there will be no relationship between the health and safety risks present at the development site and any other mentioned development site. As determined, traffic associated with proposed operations will not have a significant impact on the road network or capacity, which in turn means there will be no material change in terms of health and safety risk on the local road network as a result of the proposed development.

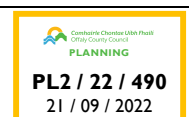
Overall, having regard to the assessments undertaken for the above mentioned environmental topics, it has been determined that the proposed development combined with the projects considered for cumulative assessment will not have any significant cumulative direct or indirect impact on population and human health (**imperceptible**).

7.5.8 Summary of Potential Effects

A summary of unmitigated potential impacts due to the proposed development are provided in Table 7-5:

Table 7-5: Summary of Potential Effects on Population and Human Health

| Activity | Potential Impact | Receptor | Quality / Duration | Probability | Significance |
|------------------------------|---|------------------------------|----------------------|-------------|------------------------------|
| 'Do Nothing' Scenario | | | | | |
| 'Do Nothing' Scenario | Continued existence of existing development | Local population and economy | Neutral, long-term | Likely | Negligible |
| 'Do Nothing' Scenario | Deficit in regional waste management capacity | Local population and economy | Negative, long-term | Likely | Significant |
| Construction Phase | | | | | |
| Construction Activity/Works | Securing / generating employment | Exiting / future employees | Positive, short-term | Likely | Moderate |
| Construction Activity/Works | Local population numbers | Local population | Positive, short-term | Likely | Negligible to slight |
| Construction Activity/Works | Impact on land use | Local population | Negative, short-term | Likely | Slight |
| Construction Activity/Works | Benefits to local businesses | Local businesses | Positive, short-term | Likely | Slight to Moderate |
| Construction Activity/Works | Health and Safety Impacts | Site Workers | Negative, short-term | Likely | Moderate to very significant |
| Traffic during construction | Health and Safety Impacts | Site Workers / Visitors | Negative, short-term | Likely | Moderate to very significant |





| Activity | Potential Impact | Receptor | Quality / Duration | Probability | Significance |
|--|---------------------------------------|--|----------------------|-------------|-----------------------------------|
| Asbestos Removal | Health and Safety Impacts | Local Population / Site Workers / Visitors | Positive, long-term | Likely | Moderate |
| Demand for aggregate and waste management capacity | Demand on quarries and inert landfill | Local economy | Negative, short-term | Likely | Slight |
| Operational Phase | | | | | |
| Operation of the facility | Securing / generating employment | Exiting / future employees | Positive, long-term | Likely | Significant |
| Operation of the facility | Local population numbers | Local population | Positive, long-term | Likely | Negligible to slight |
| Operation of the facility | Benefits to local businesses | Local businesses | Positive, long-term | Likely | Moderate |
| Operation of the facility | Circular Economy Benefits | Local population and economy | Positive, long-term | Likely | Very significant |
| Operation of the facility | Health and Safety Impacts | Site Workers / Visitors | Negative, long-term | Likely | Moderate to very significant |
| Traffic | Noise Emissions | Local Receptors | Negative, long-term | Likely | Slight (minor), insignificant |
| Traffic on local roads | Traffic Accidents | Members of the Public | Negative | Unlikely | Not significant and imperceptible |
| On-site traffic | Traffic Accidents | Site staff | Negative | Unlikely | Significant to very significant |
| Operation of the facility | Major accident | Humans on and off-site | Negative, long-term | Unlikely | Significant to profound |

7.6 Material Assets

For the purposes of completeness an assessment of the potential impacts associated with each proposed development on material assets used or utilise by humans has been carried out within this chapter. Due regard has been had for the following material asset elements at the development site:

- The site and its immediate environs
- Housing and settlement
- Land use and property





- Built services / resource usage
- Waste management
- Tourism and recreational infrastructure

It is not considered the proposed development will have any significant impact on material assets used or utilised by human for the following reasons:

- Activities and environmental impacts/emission at the proposed facility will be managed and controlled in accordance with the conditions of either a Waste Facility Permit (WFP) (during Phase 1 of operations), or an IE licence (during Phase 2 of operations).
- No sensitive receptors such as housing, high amenity areas or tourism and recreational areas of significant value are situated within close proximity to either site. The nearest sensitive receptor in terms of material assets is situated 755 metres to the south of the site.
- The proposed development will represent the replacement of one set of relatively large agri-industrial buildings and structures with a comparably scaled set of industrial buildings and structures.
- The proposed facility will not place excess demand on local/regional energy infrastructure, having regard to existing and future energy supply capacity in the region. It is noted that Edenderry Power Plant will provide energy supply to the region up to 2030. The Yellow River Wind Farm will compliment this energy supply into the future. It is noted Rhode 'Peaker' Power station is also present in the region and is available to provide power to the grid during peak demand times. The facility will be served by an on-site ESB sub-station to ensure the successful transmission of electricity to the site.
- All waste generated during the construction, operation and decommissioning phases of the proposed development will be managed at appropriately authorized waste management facilities in accordance with waste management legislation, Waste Hierarchy principles and Circular Economy.

Potential impacts on the local road network have been assessed separately within Chapter 13 Traffic and Transport.

7.7 Mitigation Measures

7.7.1 Construction Phase Mitigation

Construction Environmental Management Plan

All construction phase activities undertaken as part of the construction phase of the proposed development will be carried out in accordance with a robust Construction Environmental Management Plan (CEMP). This CEMP provides for the management and control of dust emissions, noise emissions, materials management, surface water management, spill control, waste management and archaeological, architectural and cultural heritage management. With the adoption of this plan, the proposed development will not have any significant impacts on these receiving environmental elements and associated sensitive human receptors (i.e. site staff and visitors, local dwellings, local land use, users of receiving surface water bodies).



Construction Phase Mitigation Measures defined in other EIAR Chapters

Mitigation measures defined within the following chapters would be applicable in the protection of the environment and human health during the construction phase of the proposed development :

- Chapter 9 Geology and Hydrogeology Measures in relation to water management and spill control are defined within this chapter. These measures will ensure the protection of receiving groundwater bodies utilized by humans in the local area for drinking water.
- Chapter 10 Hydrology and Surface Water Quality – Measures in relation to surface water management and spill control are defined within this chapter. These measures will ensure the protection of receiving surface water body and human users of this surface water body such as anglers, bathers or water sports enthusiasts.
- Chapter 11 Air Quality and Climate – Measures in relation to dust mitigation are defined within this chapter. These measures will ensure the minimization of dust and the prevention of dust nuisance impacting local sensitive receptors such as dwelling or farmlands.
- Chapter 12 Noise and Vibration – measures in relation to noise control/minimization are defined within this chapter. This will reduce the potential for nuisance noise affecting sensitive receptors in the locality.
- Chapter 13 Traffic and Transportation – Measures in relation to traffic management are defined within this chapter. This will reduce the risk of road traffic accidents occurring on or within the vicinity of the site.

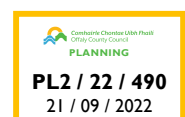
Construction Phase Health and Safety Management

Prior to construction a site-specific Safety and Health Risk Assessment/Management Plan and a Safety Statement will be prepared for the project site in accordance with the Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. No. 291 / 2013), as amended. Where elimination of the risk is not feasible, appropriate mitigation and/or control measures will be established. The contractor will be obliged under the construction contract and current health and safety legislation to adequately provide for all hazards and risks associated with the construction phase of the project. Safe Pass registration cards are required for all construction, delivery and security staff. Construction operatives will hold a valid Construction Skills Certificate Scheme card where required.

The contractor will be responsible for the implementation of procedures outlined in the Safety & Health Plan. Public safety will be addressed by restricting site access during construction. Appropriate warning signs will be posted, directing all visitors to the site manager.

During the construction phase, access to the site will be restricted to ensure that the public will not come into contact with the construction works.

Asbestos removal and management to be carried out during the site clearance and demolitions stage will be completed by a specialist asbestos removal contractor. These works will be carried out in accordance with an Asbestos Management Plan which will accord with the Health and Safety Authority's standards in their guidance document entitled *Practical Guidelines on ACM Management and Abatement*. The works will be carried out in accordance with relevant, applicable Asbestos related legislation including the Chemicals (Asbestos Articles) Regulations, 2011 (S.I. No. 248 of 2011), and the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations, 2006 & 2010. All Asbestos material removed from the site will be consigned to an appropriate authorized hazardous waste treatment facility for treatment.





7.7.2 Operational Phase Mitigation

Operational Phase Mitigation Measures defined in other EIAR Chapter

Mitigation measures defined within the following chapters would be applicable in the protection of the environment and human health during the operational phase of the proposed development:

- Chapter 9 Geology and Hydrogeology Measures in relation to water management and spill control are defined within this chapter. These measures will ensure the protection of receiving groundwater bodies utilized by humans in the local area for drinking water.
- Chapter 10 Hydrology and Surface Water Quality – Measures in relation to surface water management and spill control are defined within this chapter. These measures will ensure the protection of receiving surface water body and human users of this surface water body such as anglers, bathers or water sports enthusiasts.
- Chapter 11 Air Quality and Climate – Measures in relation to odour and dust emissions are defined within this chapter. These measures will ensure the prevention and control of odour and dust from the proposed facility.
- Chapter 12 Noise and Vibration – measures in relation to noise control/minimization are defined within this chapter. This will reduce the potential for nuisance noise affecting sensitive receptors in the locality.
- Chapter 13 Traffic and Transportation – Measures in relation to traffic management are defined within this chapter. This will reduce the risk of road traffic accidents occurring on or within the vicinity of the site.

Health and Safety

Activities at the proposed facility will be controlled from a health and safety perspective in accordance with the Safety, Health and Welfare at Work Acts 2005 (as amended). A Health and Safety Management System will be in place for the site. A Safety Statement, a Traffic Management Plan, an Emergency Plan, an Environmental Accident Prevention Procedure and a Corrective-Preventative Action procedure will in place to manage and control health safety risks posed to persons on and off-site.

A Safety Statement will be developed to allow for the comprehensive identification, assessment and control of health and safety risks present on-site.

A detailed traffic/movement plan addressing site control, gate control, speed limit, employee access/egress and visitor movement management will be in place to control movements on-site. As a result it is considered that all risk associated with mobile plant and traffic movements will be comprehensively managed and controlled.

An Emergency Plan will be in place for the site. This will address emergency preparedness and response plans in the event of an unplanned accident or emergency (E.g. fire, environmental incident, site security breach, accidents and incidents). A Fire Protection and Mitigation Plan will be developed and agreed with the fire authority prior to commencement of operations on-site. This plan will serve to ensure the prevention and management of fire on-site.

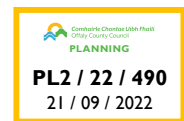
All the above health and safety plans and procedures will continue to be implemented on-site for the duration of the operational phase of the proposed development.



Major Accidents

A comprehensive and detailed emergency plan in place for managing and responding to potential accidents including major will be adopted and implemented at the facility. In addition to this, the operator has an Environmental Accident Prevention procedure in place onsite which further addresses the management and control of environmental accidents. Health and safety procedures at the proposed facility will address the following aspects:

- Controlling Access to Site;
- Emergency response and preparedness;
- Fire protection and mitigation;
- Emissions to Atmosphere;
- Emissions to Water;
- Accidents and Occupational First-Aid;
- System Safety Rules;
- Application of Safety Rules;
- Workplace Noise and Dust;
- Hot Working;
- Working in Confined Spaces;
- Work at Heights;
- Control of Chains, Ropes and Lifting Gear;
- Risk Assessments and Method Statements;
- Accident & Incident Reporting Investigation;
- Oil Spillage Control.



All the above health and safety plans and procedures will continue to be implemented on-site for the duration of the operational phase of the proposed development.

Waste Facility Permit / Industrial Emissions Licence

The proposed facility will operate under a WFP during Phase 1 of operations. The proposed facility will operate under an IE Licence during Phase 2 of operations. All site operations and activities will be undertaken in accordance with the conditions relating to environmental management and protection defined in these authorizations. Environmental emissions which may impinge upon human health including noise, air emissions and aqueous emissions will be monitored, regulated and controlled under these authorizations. As such, all potential environmental impacts and emission associated with site operations, as well as decommissioning, restoration and aftercare will be regulated, controlled and monitored in accordance with the terms of these authorizations.

Decommissioning Plan

A comprehensive closure, restoration and aftercare management plan will be in place for the proposed facility under the terms of the prospective IE licence for the facility. This plan will provide for the management, control and mitigation of known and unknown environmental risks, liabilities and impacts associated with each site.



The regulating authority, the EPA, will be responsible for enforcing the adoption and implementation of these plans and the successful and environmentally safe decommissioning of the facility.

The implementation of this plan will mitigate against the potential for any adverse impacts on the receiving environment and human health as a result of potential environmental impacts/emissions from the site.

7.8 Monitoring

Environmental monitoring will be undertaken during the operational, decommissioning/closure, restoration and aftercare phases of the proposed development, in accordance with the terms and conditions of each of the WFP then IE licence for the proposed facility. These authorizations will provide for the ongoing monitoring of surface water emissions, groundwater quality, odour and dust emissions, and noise emissions.

Such monitoring will allow for a continued understanding of potential effects upon the receiving environment as well human health aspects associated with environmental media.

7.9 Residual Impacts

With the adoption of the above mitigation measures, as well the associated mitigation measures defined in interrelated EIAR topic Chapters which are relevant to human health, it is not envisaged that the proposed development will have any significant effect on any population or human health element.

The proposed development will result in a number of negligible to slight, slight, slight to moderate, moderate and significant positive effects on population and human health elements including positive effects on employment, local population, local business and in terms of promotion of the circular economy. Post-mitigation significant impacts are summarized below:

'Do Nothing' Impact

- Significant, long-term impact on local population and economy due to a deficit in regional waste management capacity.

Residual Operational Phase Impacts

- Significant, positive, long-term impact upon employment generation.
- Very significant, positive, long-term impact in terms of promoting the circular economy.



7.10 Interactions

Population and Human Health aspects have the potential to interact with various other environmental topics. Examples of such interaction with respect to the proposed development in this instance are as follows:

- Air quality impacts can lead to negative health effects for human.
- Aqueous discharges to surface water may affect human users of the receiving surface water body (e.g. bathers, anglers, water sports enthusiasts).
- Aqueous discharges to groundwater bodies may affect humans who utilise the groundwater in question for drinking water.
- Traffic associated with a proposed development may create health and safety risks on local roads or may result in the generation of traffic emissions which pose a risk to human health.
- Noise emission associated with a proposed development may cause nuisance for sensitive human receptors in the receiving environment.
- Landscape effects associated with a proposed development may reduce visual amenity for human in a receiving environment.

The ways in which population and human health aspects interact with other environmental aspects are assessed in an intrinsic manner throughout this chapter, with other relevant chapters and sections being cross-referenced appropriately throughout. No significant negative residual interacting impacts have been identified following the carrying out of this assessment. Further detail on interactions and interrelationships contained within this EIAR are presented in Chapter 16 – Inter-relationships and Interactions.



7.11 References

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