

4.0 HUMAN HEALTH AND POPULATION

4.1 INTRODUCTION

This chapter has been prepared to assess the likely impacts associated with Human Health and Population for the proposed development. In accordance with the *Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* (EPA, 2017), *Draft Advice Notes for Preparing Environmental Impact Statements* (EPA, 2015), and European Commission (EC), *Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report* (EU, 2017) this chapter has considered the “existence, activities and health of people” with respect to “topics which are manifested in the environment such as employment and housing areas, amenities, extended infrastructure or resource utilisation and associated emissions”.

- Population and Demographics;
- Socioeconomics;
- Population Health;
- Natural Resources;
- Tourism;
- Social Infrastructure;
- Health and Safety.

Impacts on humans from other issues such as natural hazards, soils, geology and hydrogeology, water, air quality, noise and vibration, traffic and landscape are discussed in their respective EIAR chapters:

- Chapter 6 - Soils, Geology and Hydrogeology;
- Chapter 7 –Hydrology;
- Chapter 9 –Air Quality and Climate;
- Chapter 10 –Noise and Vibration;
- Chapter 11 –Landscape and Visual Impact; and
- Chapter 13 – Traffic and Transportation.

Where these topics are dealt with in further detail elsewhere in this EIA Report, the relevant chapters have been cross referenced in this chapter.

4.2 METHODOLOGY

As per Article 3 of Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment, as amended by Directive 2014/52/EU:

“1. The environmental impact assessment shall identify, describe, and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on the following factors:

(a) population and human health;

(b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC;

(c) land, soil, water, air and climate;

(d) material assets, cultural heritage and the landscape;

(e) the interaction between the factors referred to in points (a) to (d).

2. The effects referred to in paragraph 1 on the factors set out therein shall include the expected effects deriving from the vulnerability of the project to risks of major accidents and/or disasters that are relevant to the project concerned.”

A 2017 publication by the European Commission, *Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report*, considered that:

“Human health is a very broad factor that would be highly Project dependent. The notion of human health should be considered in the context of the other factors in Article 3(1) of the EIA Directive and thus environmentally related health issues (such as health effects caused by the release of toxic substances to the environment, health risks arising from major hazards associated with the Project, effects caused by changes in disease vectors caused by the Project, changes in living conditions, effects on vulnerable groups, exposure to traffic noise or air pollutants) are obvious aspects to study. In addition, these would concern the commissioning, operation, and decommissioning of a Project in relation to workers on the Project and surrounding population.”

This chapter will follow these EC guidelines, and will examine the health effects relevant to the Proposed Development as they relate to a relevant, defined study area. The effects of the Proposed Development on the population and human health are analysed in compliance with the requirements of the EPA Draft EIA Report Guidelines 2017.

4.2.1 Assessment of Significance & Sensitivity

The assessment of significance of is a professional appraisal based on the sensitivity of the receptor and the magnitude of effect.

Within any area, the sensitivity of individuals in a population will vary. As such, it would be neither representative of the population, nor a fair representation of the range of sensitivities in a population, were an overall sensitivity classification assigned to the population in question. As such, the precautionary principle has been adopted for this assessment, which assumes that the population within the study area is of a uniformly high sensitivity.

4.2.2 Magnitude of Impact

The magnitude of predicted impacts has been quantified in this assessment using the terms outlined in Table 4.1 below.

Table 4.1 Description of magnitude of predicted impacts

Magnitude	Description of Magnitude
High	Change in an environmental and/or socio-economic factor(s) as a result of the Proposed Development which would result in a major change to existing baseline conditions (adverse or beneficial)

Medium	Change in an environmental and/or socio-economic factor(s) as a result of the Proposed Development which would result in a moderate change to existing baseline conditions (adverse or beneficial)
Low	Change in an environmental and/or socio-economic factor(s) as a result of the Proposed Development which would result in a minor change to existing baseline conditions (adverse or beneficial)
Negligible	Change in an environmental and/or socio-economic factor(s) as a result of the Proposed Development which would not result in change to existing baseline conditions at a population level, but may still result in an individual impact (adverse or beneficial)
No change	No change would occur as a result of the Proposed Development which would alter the exiting baseline conditions (adverse or beneficial)

4.2.3 Significance of Effects

The assessment of significance of effects in this assessment is a professional appraisal and has been based on the relationship between the magnitude of effects (Section 4.2.2) and the sensitivity of the receptor. Table 4.2 below provides a matrix on the measure of the significance of effects based on these parameters.

Table 4.2 Matrix illustrating the significance of effects as determined by the relationship between the magnitude of impact and the sensitivity of receptors

		Magnitude of Impact			
		Negligible	Low	Medium	High
Sensitivity of Receptor	Negligible	Negligible	Negligible or minor	Negligible or minor	Minor
	Low	Negligible or minor	Negligible or minor	Minor	Minor or moderate
	Medium	Negligible or minor	Minor	Moderate	Moderate or major
	High	Minor	Minor or moderate	Moderate or major	Major

4.3 RECEIVING ENVIRONMENT

The Proposed Development is to be located on a primarily greenfield site (60 hectares) located on lands at Tooreen Ennis (Refer to Figure 1.1). The site includes areas of local environmental sensitivity and buffer zones have been incorporated in the Proposed Development to protect these habitats during construction and operation.

The area is primarily rural with a number of individual residents located along the surrounding roadways. The closest residents are along the southern boundary (R352). The M18 Motorway is located to the west of the site.

The surrounding area is described in further detail in Chapter 2 (Description of the Proposed Development).

4.4 EXISTING BASELINE CONDITIONS

The most recent census of population was carried out by the CSO on the 24th April 2016. The previous census was completed on the 10th of April 2011 and before that on 23rd April 2006. The census compiles data for the whole state as well as smaller individual areas including counties, cities, towns and electoral divisions. Taking into consideration the location of the Proposed Development, the census information on population, age profile, employment and social class, has been analysed in relation to the Clare County Council Region.

4.4.1 Population and Demographics

The latest census data shows that the population in the Clare County Council (CCC) area grew by only 1.3% between the years 2011 and 2016 compared with 3.8% nationally. Spancelhill, the electoral division (ED) for the site, saw a decline with a decrease of 0.8% (Table 4.3). Ennis Rural (ED), which is most significant population centre in the area grew the most by 2% and highlights the expansion of the town beyond the urban quarter. Projections for the national and the County populations are predicted to continue this trend of moderate to high population growth into the short-term future.

Table 4.3 Population change at National, primary and secondary hinterland level from 2011 – 2016 (Source: www.cso.ie)

Area	2011	2016	% Change 2011-2016
State	4,588,252	4,761,865	+ 3.8%
County Clare	117,196	118,817	+ 1.3%
Spancelhill (ED)	694	688	- 0.8%
Ennis Rural (ED)	17,359	17,709	+ 2%
Ennis Urban No. 1 - 4 (EDs)	4,965	4,962	- 0.06%

Age Profile

The age profile of the population in the area is an important parameter as it provides a good insight into the potential labour force, the demand for schools, amenities, other facilities and the future housing demand. Table 4.4 shows the age profiles Nationally and in Clare County for 2016.

Table 4.4 Age profile at National and County level 2016 (Source: www.cso.ie)

Area	0-14	15-24	25-44	45-64	65+	Total Persons
State	21%	12%	30%	24%	13%	4,761,865
County Clare	21.5%	11.5%	26.2%	26%	14.8%	118,817

This table shows that both Nationally and in the CCC area, the dominant age grouping is 25-44 at 30% and 26.2% of the total population, respectively, indicating a respectable young working age population in the area which is just below the national level. While older age groups 45-64 and 65+ are just above the national average.

The overall labour force population (15-64 age group) in CCC is 63.7% which is only 2.3% below the National level of 66%.

4.4.2 Socioeconomics

Employment

Table 4.5 presents the employment statistics in 2016 compared with 2011. The data shows that unemployment decreased significantly in the County, as well as nationally, reflecting the economic recovery in recent years.

Table 4.5 Employment statistics Nationally and at County level in 2011 and 2016 (Source: www.cso.ie)

	At Work	Looking for first regular job	Unemployed having lost or given up previous job	Total in labour force	% Unemployment
2011 Labour Force					
State	1,807,360	34,166	390,677	2,232,203	19
Clare County	45,606	737	9,805	91,115	11.6
2016 Labour Force					
State	2,006,641	31,434	265,962	2,304,037	12.9
Clare County	49,511	666	6,352	93,245	7.5

The 2016 census data shows that the majority of people in employment in the CCC area are in 'Managerial and Technical' employment (28.4%) with the least represented social class being 'Unskilled' workers at (3.3%).

At a local level, the dominant social class in the Spancelhill area is 'Managerial and technical' labour (39.2%) with 'Unskilled Workers' being the least representative (3.1%).

Education

Census data presenting the highest level of education completed by people living in the Spancelhill community and CCC is presented in Table 4.6 (Note the table presents key milestone education levels and excludes lower secondary, technical or vocational qualification, advanced certificate/completed apprenticeship, higher certificate, ordinary bachelor degree/national diploma, Ph.D./higher or where information was not stated).

Table 4.6 Highest level of education completed locally and at County level in 2016 for key educational levels. (Source: www.cso.ie)

Area	No formal education	Primary education	Upper secondary	Honours Bachelor's Degree, Professional qualification or both	Postgraduate Diploma or Degree	Total Persons
Spancelhill	0.6%	5.9%	19.4%	9.5%	10.4%	456
Clare County	1.4%	9.9%	20.3%	9.6%	7.8%	77,762

Labour Force Survey

The Labour Force Survey (LFS) is a large-scale, nationwide survey of households in Ireland carried out every three months. It generates labour force estimates which include the official measure of employment and unemployment for the state.

The results Nationally for Q4 2018 showed that there were 2,281,300 people employed in the State with 128,800 registered as unemployed. This represents a 2.3% increase in employment since the start of 2018 and an increase of 3.1% compared to the start of 2017 to Q4 in 2017.

In both Q4 2017 and 2018, the majority of people were employed in the wholesale and retail trade and repair of motor vehicles and motorcycles sectors, with industry, and human health and social work activities following closely.

Income

The below data, obtained from CSO Statbank (CIA01), demonstrate that the levels of total income per person County Clare are marginally lower than that within the State.

Table 4.7 Total Income per Person (Euro) for Clare and the State (Source: CSO Statbank CIA01)

	2010	2011	2012	2013	2014	2015
Clare County	23,743	22,347	22,926	22,086	22,275	23,386
State	24,840	24,596	25,273	24,910	25,388	26,698

A similar pattern of income distribution is observed in data on disposable income per person, where in the Clare County Local Authority district the disposable income per person was significantly lower than that of in the State in 2015.

Table 4.8 Total Disposable Income per Person (Euro) for Clare and the State (Source: CSO Statbank CIA01)

	2010	2011	2012	2013	2014	2015
Clare County	18,949	17,387	17,887	17,060	17,234	18,082
State	19,558	18,889	19,429	18,898	19,265	20,334

Deprivation

Deprivation in small areas is mapped using the Pobal HP Deprivation Index. This Index draws on data from censuses and combines three dimensions of relative affluence and deprivation: Demographic Profile, Social Class Composition and Labour Market Situation. Figure 4.1 below shows graphical representation of how the concepts of Demographic Growth, Social Class Composition and Labour Market Situation are measured by ten key socio-economic indicators from the Census of Population. In this EIA Report, the Relative Index Score is considered as the measure for deprivation, as these Relative Index Scores are rescaled such that the mean is 0 and standard deviation is 10 at each census wave. This allows for the provision of descriptive labels with the scores, which are grouped by standard deviation as seen in Table 4.7 below.

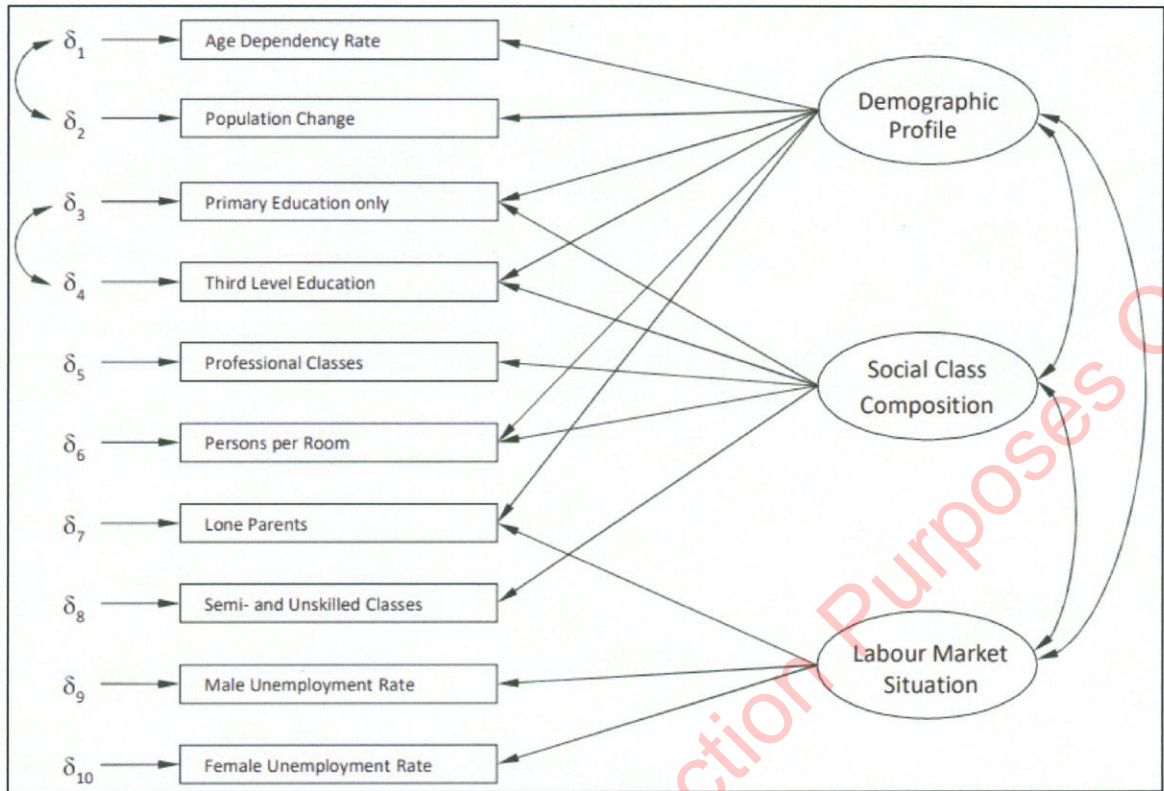


Figure 4.1 Graphical representation of how the concepts of Demographic Growth, Social Class Composition and Labour Market Situation are measured by ten key socio-economic indicators from the Census of Population.

Table 4.9 Pobal HP Index Relevant Index Score labels (Source: Pobal HP Deprivation Index)

Relative Index Score	Standard Deviation	Label
> 30	> 3	Extremely affluent
20 – 30	2 – 3	Very affluent
10 – 20	1 – 2	Affluent
0 – 10	0 – 1	Marginally above average
0 – -10	0 – -1	Marginally below average
-10 – -20	-1 – -2	Disadvantaged
-20 – -30	-2 – -3	Very disadvantaged
< -30	< -3	Extremely disadvantaged

The data in Table 4.10 show that the population living within the electoral division for the site, are generally classified as ‘Marginally above average’, with a Relative Index Score of 7.3

Table 4.8 Pobal HP Index Relevant Index Score Figures at a local and County level (Source: Pobal HP Deprivation Index)

	Relative Index Score	Pobal HP Description 2016
Clare County	-0.22	Marginally below average
Spancelhill (ED)	7.3	Marginally above average

4.4.3 Social Infrastructure

Residential Dwellings

The lands are currently used for agricultural purposes. The south and west of the site are bounded by the R352 (Tulla Road) and the M18 motorway. Ennis town and surrounding areas of urban fabric are located to the West, with small commercial and light industrial developments to the West and Northwest of the site. Agricultural land to the North, South and East are representative of the typical rural landscape in the area. The light industrial and commercial developments to the West comprise the Liffey mills, Hogan Motors, Breens Farm Machinery and Cummins Car centre/Dealership. Circle K, Topaz & O'Keefes petrol stations, and O'Connors bakery and Liddys Eurospar shop which are located on the R352 west of the M18 overpass. The site is bound to the North and East by privately owned lands. The extent of these privately-owned lands are undeveloped farmlands and domestic properties. A halting site with 6 No. houses is located on the opposite side of the M18 motorway c. 200m West of the site.

Schools

There are a number of primary and secondary schools in the vicinity of the Proposed Development including:

- Knockanean National School in Knockanean, Ennis. c. 650m south of the site.
- An Daingin National School in Rosslevan c 1.5km West of the Site.

The closest third level institution in the area is Limerick Institute of Technology's Ennis campus located c. 3.5km to the southwest of the site.

Health

The nearest hospital to the site is Ennis General Hospital located c. 3.2km to the southwest of the site. The Ennis Medical Centre is also located c. 3.25 km southwest of the site along Francis street.

Security

There is a Garda station located on Abbey Street in Ennis c. 3.3km southwest of the site and a fire station on New road in Ennis (c. 2.9km to the southwest).

4.4.4 Landscape, Amenity and Tourism

In terms of landscape amenity of the Proposed Development site, there are no listed or scenic views, or tree preservation orders ~~protected trees~~ pertaining to the site, and no protected structures. The site is located within the 'Working Landscape' designation of the Clare County Development Plan 2017–2023 and outside of the 'Heritage Landscapes' designation. Working Landscapes are described in the Development Plan as... *intensively settled and developed areas within Settled Landscapes or areas with a unique natural resource*. There is also one Recorded Monument and Place (RMP) within the site, a 'Ringfort – Cashel' (SMR No. CL-034-007) in the northeast of the site as described in Chapter 12 Cultural Heritage and Archaeology of this EIA Report.

The primary areas of landscape amenity in the immediate vicinity of the Proposed Development site are located within the settlement of Ennis on the opposite side of the M18 motorway from the site. These are mainly small amenity greenspaces within the

various housing developments that comprise the settlement. The Oysterman's Marsh Natural Heritage Area (NHA) is located just over 5km away from the site.

The Landscape and Visual Impact Assessment (LVIA), Chapter 10 of this EIAR, did not identify any significant impacts upon the landscape or visual receptors as a result of the proposed development. As stated in Chapter 3, the lands are appropriately zoned in the Clare County Development Plan 2017–2023 Variation No.1 (11th March 2019) as ENT3 with the aim to ... *“accommodate a Data Centre campus which consists of one or more structures, used primarily for the storage, management and dissemination of data and the provision of associated power electricity connections and energy generating infrastructure.”* The buildings have been located within the landform in such a way as to minimise as far as possible any potential visual impact. Potential visual impacts have been further minimised by proposed berms and large extents of structure planting which will largely contain views of the proposed buildings to the area within the site. Further discussion is presented in Chapter 11 (Landscape and Visual).

Tourism is a major industry in the immediate environs of the Proposed Development site. The town of Ennis is seen as a gateway town to the west coast of Clare with attractions such as the Burren National Park and Cliffs of Moher accessible via a short drive. As a ‘Gaelic medieval’ town Ennis also hosts many significant historic features and attractions itself. Coupled with its narrow streets, collection of independent retailers, cafes, bars, landmark hotels, and a strong tradition of Irish Music the town has a lot to offer visitors as well as the surrounding communities.

The closest shopping centres include the Roslevan Shopping Centre c. 1.5km west-south-west of the site and the Ennis Shopping Centre c. 3km south west of the site. Several major hotels are located in Ennis town centre such as the ‘Queens Hotel’, ‘Ashford Court’ and ‘Old Ground Hotel’, as well as many other smaller accommodation providers located closer to the site such as ‘Newpark House’ located c. 1.6km west-south-west of the site.

4.4.5 Natural Resources

Natural resources and land use in the hinterland of the Proposed Development have also been considered as they may have implications for the development of the lands.

The site itself was previously in agricultural use. Historical Ordnance Survey (OS) maps indicate that much of the surrounding land has been in agricultural and fallow use for 20-30 years. The construction of the M18 motorway which was completed in 2007 is one development that has negatively impacted the natural resources of the surrounding area. Regardless of the M18, much of the agricultural resources in the surrounding area has been left intact over recent decades.

Data from the Geological Survey of Ireland indicates that there are no areas of geological heritage within the vicinity of the proposed site. In terms of extractive industries, the closest active quarries are the Quinn Limestone Quarry in Carrowmeer (c. 5.3km South of the site) and the Whelans Limestone Quarry at Fountain Cross (c. 6km west of the site). There are no anticipated impacts on these facilities from the Proposed Development. Further detail on extractive industries is presented in Chapter 5 (Land, Soils, Geology and Hydrogeology).

4.5 POTENTIAL IMPACTS OF THE PROPOSED DEVELOPMENT

The impact of construction, commissioning, operation and decommissioning of the Proposed Development are considered below.

4.5.1 Potential Impacts on Businesses and Residences

The main potential impacts on local businesses and residences associated with the Proposed Development will be in relation to air quality, noise, visual impact and traffic. The potential impacts and mitigation measures to address them are dealt with within the corresponding chapters of this EIA Report as follows:

- Chapter 8– Air Quality and Climate
- Chapter 9 – Noise and Vibration
- Chapter 10 – Landscape and Visual Impact
- Chapter 11 – Traffic and Transportation

It is predicted that there will be a slight positive impact on local business activity during the construction phase with the increased presence of an average of 600 construction workers using local facilities with a peak construction number of 1,200 construction workers. The positive impact during the operational phase will be c. 400-450 employees and contractors anticipated for the datacentre and energy centre (staff will be present on a shift basis, numbers will vary throughout the day). The development of the on site vertical farm will generate employment of c. 40 staff.

During operation, there will be potential additional housing demand in the wider commuter area as a result of increased employment provided by the Proposed Development. It is also anticipated that the Proposed Development will have indirect positive effects on employment in terms of construction material manufacture, maintenance contracts, equipment supply, landscaping etc.

The potential increase in the temporary population of the area during construction as a result of the employment of workers from outside the wider Clare area that may choose to reside in the immediate and wider local area is likely to amount to only a small percentage of the workforce employed during the construction phase but will result in some additional trade for local accommodation and services. It is expected that the majority of the work force will travel from existing places of residence to the construction site rather than reside in the immediate environs of the site. However, some local employment from within the wider local area is expected.

Construction will have an indirect positive effect on support industries such as builder suppliers, construction material manufacture, maintenance contracts, equipment supply, landscaping and other local services. There will also be a need to bring in specialist workers on a regular basis that may increase the above estimated working population at times. Specialists are only likely to stay for shorter periods depending on the nature of the work. The construction phase therefore is considered to have the potential to have a moderate short to medium term positive impact on the economy and employment of the local and wider area.

The completed development will also have a positive impact in the provision of additional capacity in cloud computing and data storage, the demand for which remains high. The operator offers a broad set of global computer, storage, database, analytics, application and deployment services that help organisations (both locally, nationally and internationally) operate faster, lower ICT costs and scale applications. The

provision of these services will also improve individual's online experience and accessibility.

4.5.2 Potential Impacts on Human Health from Air Quality

As outlined in Chapter 8 of this EIA Report (Air Quality and Climate), National and European statutory bodies have set limit values in ambient air for a range of air pollutants. These limit values or "Air Quality Standards" are based on the protection of the environment as well as the protection of human health. Additional factors such as natural background levels, environmental conditions and socio-economic factors are also considered in the limit values which are set (see Chapter 8, Table 8.1). The ambient air quality standards established are designed to minimise harmful effects to health.

4.5.2.1 Construction Phase

As detailed in Chapter 8 (Air Quality & Climate), best practice mitigation measures are proposed for the construction phase of the Proposed Development which will focus on the pro-active control of dust and other air pollutants to minimise generation of emissions at source. The mitigation measures that will be put in place during construction of the Proposed Development will ensure that the impact of the development complies with all EU ambient air quality legislative limit values which are based on the protection of human health. The impact of construction and commissioning phase of the Proposed Development is likely to be *short-term* and *imperceptible* with respect to human health. Similar mitigation measures and impacts exist for decommissioning.

4.5.2.2 Operational Phase

As detailed in Chapter 8 (Air Quality & Climate), air dispersion modelling was undertaken to assess the impact of the Proposed Development with reference to EU ambient air quality standards which are based on the protection of human health. As demonstrated by the dispersion modelling results, emissions from the site, assuming scheduled testing as well as emergency operation of the data centre back-up generators and the energy centre engines, are compliant with all National and EU ambient air quality limit values and, therefore, will not result in a significant impact on human health. Conservative assumptions were made when determining the input data for the air modelling assessment and the approach used in the study leads to an over-estimation of the actual levels that will arise. In relation to the spatial extent of air quality impacts from the site, ambient concentrations will decrease significantly with distance from the site boundary.

The stack heights for the proposed back-up generators have been modelled in an iterative fashion (i.e. with incremental increases in stack heights modelled) to ensure that an adequate height was selected to aid dispersion of the emissions and achieve compliance with the EU ambient air quality standards at all off-site locations (including background concentrations). Further details of the air dispersion modelling assessment can be found in Chapter 8. The impact of the operation phase of the Proposed Development is likely to be *long-term* and *imperceptible* with respect to human health.

4.5.3 Potential Impacts on Human Health from Noise & Vibration

Noise and vibration impacts associated with the Proposed Development have been fully considered within Chapter 9 of this EIA Report. Commentary on the impact

assessment and related noise levels are summarised below with respect to potential environmental health impacts.

4.5.3.1 Construction Phase

As detailed in Chapter 9 (Noise and Vibration), there will be some impact on nearby noise sensitive properties due to noise emissions from site activity and traffic. The application of noise limits and limits on the hours of operation, along with implementation of appropriate noise and vibration control measures, will ensure that noise and vibration impact is kept to a minimum. The noise impact is assessed to be *short-term* in duration with a *slight to moderate* significance considering the existing background low level of noise in this rural location. As reported, the noise impact will reduce to *slight* as construction moves above ground. Due to the distance between the site and the nearest sensitive locations, vibration impacts generated during construction are expected to be *short term* duration and *imperceptible* significance.

4.5.3.2 Operational Phase

As detailed in Chapter 9, noise modelling was undertaken to assess the impact of the Proposed Development of the site. As demonstrated by the modelling results, the predicted noise emissions associated with the Proposed Development of the site during the operational phases are within the relevant noise criteria considered suitable for the development considering the guidance outlined in EPA: *Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4 – 2016)*. These guidelines consider impacts on human health. As such the modelling has due consideration to human health, and has shown that although there will be an increase in noise as a result of the operation of the facility, this is not considered to have a significant impact on human health.

The Proposed Development will not generate any perceptible levels of vibration during operation and therefore there will be no impact from vibrations on human health.

4.5.4 Potential Impacts on Local Amenities and Tourism

In terms of landscape amenity of the Proposed Development site, there are no listed or scenic views, or protected trees pertaining to the site, and no protected structures. The site is located within the 'Working Landscape' designation of the Clare County Development Plan 2017–2023 and outside of the 'Heritage Landscapes' designation. Working Landscapes are described in the Development Plan as...*intensively settled and developed areas within Settled Landscapes or areas with a unique natural resource*. There is also one Site and Monument Record (SMR) within the site, a 'Ringfort – Cashel' (RMP No. CL-034-007) in the northeast of the site as described in Chapter 11 of this EIA Report.

The primary areas of landscape amenity in the immediate vicinity of the Proposed Development site are located within the settlement of Ennis on the opposite side of the M18 motorway from the site. These are mainly small amenity greenspaces within the various housing developments that comprise the settlement. The Oysterman's Marsh Natural Heritage Area (NHA) is located just over 5km away from the site.

The Proposed Development site is not considered to be significant or sensitive from a landscape and visual aspect. As stated in Chapter 3, the lands are appropriately zoned in the Clare County Development Plan 2017–2023 Variation No.1 (11th March 2019) as ENT3 with the aim to ...*accommodate a Data Centre campus which consists of one or more structures, used primarily for the storage, management and dissemination*

of data and the provision of associated power electricity connections and energy generating infrastructure.” The buildings have been located within the landform in such a way as to minimise as far as possible any potential visual impact. Potential visual impacts have been further minimised by proposed berms and large extents of structure planting which will largely contain views of the proposed buildings to the area within the site. Further discussion is presented in Chapter 11 (Landscape and Visual).

Tourism is not a major industry in the immediate environs of the Proposed Development site. As such it will have a negligible impact on tourism in the area.

4.5.5 Potential Impacts on Material Assets

The Proposed Development will require electrical power supply and gas supply from the national grid and the requirements for these supplies have been detailed in Chapter 14 (Material Assets) of this EIA Report.

4.5.6 Potential Impacts from Additional Traffic

An assessment of the additional traffic movements associated with the Proposed Development during the construction and operational phases is presented in Chapter 12 (Traffic and Transportation).

The increase in traffic volumes associated with the construction (see Section 12) and operational phases of development will not have any adverse transport-related environmental effects in terms of noise, air quality, vibrations, etc.

The traffic assessment shows that the additional traffic movements associated with the Proposed Development were found to be *short-term, negative* and *slight* for the construction phase and *long-term, negative* and *slight* for the operational phase.

The Stage 1 Road Safety Audit undertaken for the proposed development includes information on traffic collisions over the most recent 12 year period in the vicinity of the site. Based on the collision data analysis, it can be concluded that there are no accident black spots or notable accident patterns that would indicate a road safety design flaw on the road infrastructure surrounding the site. All minor issues identified in the Stage 1 Road Safety Audit relating to the infrastructure proposed as part of the development have been addressed.

4.5.7 Unplanned Events/Impacts on Health and Safety

The Proposed Development has been designed in accordance with the Safety, Health and Welfare at Work Act 2005 (S.I. 10 of 2005) as amended and the Safety, Health and Welfare at Work (General Application) Regulations 2007 (S.I. 299 of 2007) as amended and associated regulations. The plant has been designed by skilled personnel in accordance with internationally recognised standards, design codes, legislation, good practice and experience based on a number of similar existing facilities operated by the operator.

The Proposed Development has the potential for an impact on the health and safety of workers employed on the site, particularly during the construction phase. The activities of contractors during the construction phase will be carried out in accordance with the Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. No. 291 of 2013) as amended to minimise the likelihood of any impacts on worker's health and safety. The health and safety planning for the construction phase of the Proposed

Development will consider any appropriate measures to safeguard workers' health and safety with regards to Covid-19.

During the operational phase of the development, the operator will implement an Environmental Safety and Health (EH&S) Management System and associated procedures at the facility. Full training in the EH&S Management System and relevant procedures will be provided to all employees. The Operator will also implement any appropriate health and safety measures to safeguard workers' health and safety with regards to Covid-19.

The EIA Directive and associated EPA Guidance (2017) require that the vulnerability of the project to major accidents and/or natural disasters (such as earthquakes, landslides, flooding, sea level rise etc.) is considered in the EIA Report.

The site has been assessed in relation to the following external natural disasters; landslides, seismic activity, volcanic activity and sea level rise/flooding as outlined below. The potential for major accidents to occur at the facility has also been considered with reference to Seveso/Control of Major Accident Hazards (COMAH) Regulations.

There is a negligible risk of landslides occurring at the site and in the immediate vicinity due to the topography and soil profile of the site and surrounding areas. There is no history of seismic activity in the vicinity of the site. There are no active volcanoes in Ireland so there is no risk of volcanic activity.

The potential risk of flooding on the site was also assessed. A site-specific flood risk assessment was carried out by the project engineers, Clifton Scannell Emerson (CSEA) and localised flood zones have been identified relating to natural features on the site. These locations are within buffer zones proposed as part of the Proposed Development and will not impinge on any buildings or services. The Proposed Development design has adequate attenuation to ensure there is no potential impact on flood risk for other neighbouring properties. This is further discussed in Chapter 6 (Hydrology). The Proposed Development will not be a Seveso/COMAH facility. The only substance stored on site controlled under Seveso/COMAH will be diesel for generators and the amounts proposed do not exceed the relevant thresholds of the Seveso Directive. The Proposed Development site is not located within the consultation distance of any COMAH establishment that is notified to the HSA.

There is a potential impact on the receiving environment as a result of minor accidents/leaks of fuel/oils during the construction and operational phases. However, the implementation of the mitigation measures set out in Chapter 5 (Land, Soils, Geology and Hydrogeology) and Chapter 6 (Hydrology) of the EIA Report and in the pollution prevention Plan outlined in the Construction environmental Management plan (CEMP) will ensure the risk of a minor/accident is low and that the residual effect on the environment is imperceptible.

4.6 REMEDIAL AND MITIGATION MEASURES

The impacts on the local population in terms of residents and businesses are considered to be mainly positive in the sense of creating direct employment opportunities and indirect additional business, both during the construction and operational phases.

Mitigation measures proposed to minimise the potential impacts on human health in terms of air quality and climate and noise and vibration are discussed in the relevant sections of Chapters 8 and 9, respectively.

Chapter 12 Traffic and Transportation addresses mitigation measures proposed to reduce the impact of additional traffic movements to and from the development.

Chapter 13 Material Assets addresses the impact of the Proposed Development on material assets and mitigation measures in place.

4.7 CUMULATIVE IMPACTS

Construction Phase

Due to the phasing of the project, there is a possibility that multiple developments in the area could run concurrently or overlap in the construction phase and contribute to additional impacts in terms of traffic, dust and noise. However, the mitigation measures highlighted above and included in the individual chapters of this EIAR along with the fact that any other significant construction project in the area would require an EIAR and consideration of the same/ similar mitigation measures would reduce the cumulative impact to receptors in the area. The construction phase of the proposed development together with any/all relevant other planned or permitted developments would have a positive impact in terms of employment. Contractors for the proposed development will be contractually required to operate in compliance with a project-specific Construction Environmental Management Plan (CEMP) which will include the mitigation measures outlined in this EIAR. It is considered that there would be no cumulative effects on human health.

The overall cumulative effect during construction is therefore concluded as *neutral imperceptible*, and *short-term* with respect to human health.

Operational Phase

The air, noise and traffic assessments indicate that the proposed development is not likely to result in significant adverse impacts either alone or in combination with any likely future projects. There are no significant cumulative impacts predicted for Human Health and Populations during the operational phase of the proposed development. The cumulative impact is predicted to be *long-term* and *imperceptible* with regards to human health.

4.8 RESIDUAL IMPACTS

It is expected that the Proposed Development will have a positive and long-term impact on the immediate hinterland through continued employment opportunities and the associated economic and social benefits.

There will be a loss of private agricultural land due to the Proposed Development but this land is zoned for development. As such there is no predicted adverse impacts with respect to socio-economic factors, land-use or the amenity value and tourism potential of the area.

All other environmental aspects relating to the human environment which have the potential to impact on the local population such as air quality and climate, noise and

vibration, traffic and material assets are addressed in Section 4.8 and in more detail in the relevant chapters of this EIA Report.

Measures outlined in Section 4.5.7 will be put in place to ensure the health and safety of all site personnel during both construction and operational phases.

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