



Environmental Impact Assessment Report

Development of Two Data Halls and Ancillary Structures

on lands adjacent to Huntstown Power Station,
Huntstown, North Road (R135), Finglas, Dublin 11.

Volume 1 – Non-Technical Summary

Prepared by: AWN Consulting, August 2021

Prepared for: Huntstown Power Company Limited

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NON-TECHNICAL SUMMARY

1.0 INTRODUCTION

This is the non-technical summary of an Environmental Impact Assessment (EIA) Report prepared by AWN Consulting (AWN) on behalf of Huntstown Power Company Limited herein referred as ‘the Applicant’ to accompany a planning application to Fingal County Council (FCC).

The proposal comprises the demolition of two residential properties fronting the R135 (North Road), and the development of two no. data hall buildings arranged over 3 storeys and associated structures. Associated structures and infrastructure including water treatment facility, sprinkler tanks, external plant equipment, emergency generators and diesel fuel storage, vehicular access roads, car and bicycle parking, attenuation ponds and sustainable urban drainage measures, underground foul and storm water drainage network, associated landscaping and boundary treatment works.

The Proposed Development site is c. 13.3 hectares of predominantly greenfield land to the north west of the M50 orbital ring in the townland of Johnstown and Coldwinders, North Road, Finglas, Dublin 11. The surrounding area is characterised by a variety of energy, industrial, commercial, quarrying, agricultural and residential uses. The subject site is generally bounded to the north by the Dogs Trust (Dog Rescue and Rehoming Charity), to the south by a vehicular entrance leading to the Huntstown Quarry and further south west by the Huntstown Bioenergy Plant, to the east by the North Road (R135) and two residential properties fronting the R135 which form part of the subject site and to the west by Huntstown Power Station.



Figure 1.1 Proposed development Lands (Red boundary) (Source: Google Earth)

Methodology for Preparation of the EIAR

This EIA Report has been developed in accordance with the most relevant guidance, including:

- EIA Directive (2011/92/EU) as amended by EIA Directive (2014/52/EU)
- Planning and Development Act 2000 (as amended)
- Planning and Development Regulations 2001 (as amended)
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Housing, Planning and Local Government, 2018)
- Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2017)
- Guidance on the preparation of the Environmental Impact Assessment Report (European Union, 2017)
- Draft Advice Notes for Preparing Environmental Impact Statements (EPA, 2015)

This report has been laid out using the grouped format structure, the EIA Report examines each environmental aspect in a separate chapter. Each specialist chapter generally covers the following for the construction and operational phases:

- Assessment Methodology;
- Receiving Environment;
- Characteristics of the Proposed Development;
- Potential Impacts of the Proposed Development;
- Remedial and Mitigation Measures;
- Predicted Impacts of the Proposed development
- Monitoring or Reinstatement; and
- Cumulative Impacts of the Proposed Development.

A Non-Technical Summary of the findings of the EIA Report is provided as a separate document.

The cumulative impact of the development and the potential cumulative impacts of the Proposed development with any/all relevant other planned or permitted developments are discussed in each chapter. Chapter 16 of this report shows where Cumulative Impact Assessment, Residual Impacts and Interactions have been identified and how they have been addressed.

Consultation

The current application has been subject to a pre-application consultation meeting with the Planning Authority. The application reflects and responds to the points of discussion during the course of the pre-application consultations with FCC Irish Water, National Monuments Service, Eirgrid, ESB, etc.

The scope of the EIAR has been defined at an early stage of the planning process in order to identify and ensure that the environmental studies address all the relevant issues. This included a review of the context of the development site, locality, and previously permitted development on site, and of the development proposed to identify the matters to be covered within this environmental impact assessment.

Regulatory Control

The Proposed development is located directly adjoining to the combined cycle gas turbine power plant owned and operated by Gensys Power Ltd. The power station is a notified lower tier Seveso site, and the proposed development site is located within the consultation distance of this site. The Proposed development will not be a Seveso/COMAH facility or an extension of the existing facility. Under the COMAH directive a Land Use Planning assessment been developed and is included with the planning documentation.

The stationary combustion plants on site (emergency generators) will exceed 1 MWth, in accordance with the European Union (Medium Combustion Plant) Regulations 2017 this plant will be registered in advance of the commissioning phase as required with the Environmental Protection Agency (EPA).

The rated thermal input of relevant on-site fuel consuming equipment (emergency generators) will exceed 20 MWth; therefore, a Greenhouse Gas Permit is required. This will be applied for in advance of the commissioning phase, as and when the site fuel consuming equipment exceeding 20 MWth.

An Appropriate Assessment (Stage 1) Screening comprises an initial impact assessment of a project; examining the direct and indirect impacts that it might have on its own or in combination with other plans and projects, on one or more Natura 2000 sites in view of the sites' conservation objectives. An Appropriate Assessment Screening has been undertaken for this the results of which are presented in the Appendix to Chapter 8 (Biodiversity).

Contributors to the EIA Report

The preparation and co-ordination of the EIA Report has been completed by AWN in conjunction with experienced specialists. The role and responsibility of each contributor, their qualifications and relevant experience are detailed in Chapter 1 (Introduction) of the EIA Report.

2.0 DESCRIPTION OF THE PROPOSED DEVELOPMENT

This chapter provides a description of the subject site, receiving environment and proposed development.

The subject site is located to the north west of the M50 orbital ring in the townland of Huntstown, North Road, Finglas, Dublin 11. The overall site extends over 13.3 ha comprising of mainly greenfield (agricultural) lands and existing residential dwellings located within the administrative area of Fingal County Council (Blanchardstown Division).

The surrounding area is characterised by a variety of energy, industrial, commercial, quarrying, agricultural and residential uses. The subject site is generally bounded to the north by the Dogs Trust (Dog Rescue and Rehoming Charity), to the south by a vehicular entrance leading to the Huntstown Quarry and further south west by an Anaerobic Digestion Plant, to the east by the North Road (R135) and two residential properties fronting the R135 which form part of the subject site and to the west by Huntstown Power Station.

The greenfield site is free from development. The topography of the site falls slightly in an east west direction (77.5AOD - 79.5AOD). An archaeological feature is identified south of the northern site boundary. A series of hedgerows are located throughout the site including the site perimeter. There are no known protected structures on site, nor is the site located within an architectural conservation area.

A drainage ditch located on the western site boundary separates the subject site from the adjoining Huntstown Power Plant. A set of 110kv and 38kv overhead lines traverse the site in a north - south direction connecting to the Finglas 220Kv substation complex to the south east of the site. The overhead lines are subject of the separate planning application which proposes the undergrounding of lines and removal of lattice towers and polesets (Concurrent application Reg. Ref. FW21A/0144 refers).

The subject site is highly accessible to the national road network and is located less than 1km from the M50/N2 interchange and approximately 0.1km from the Coldwinters exit on the N2. The site is directly accessible from the R135 via a service road to the south leading to Huntstown Quarry and Power Station.

The proposed development is described as follows:

- Demolition of 2 no. existing residential dwellings and ancillary structures to the east of the site (c.344sqm total floor area);
- Construction of 2 no. data hall buildings (Buildings A and B) comprising data hall rooms, mechanical and electrical galleries, ancillary offices including meeting rooms, workshop spaces, staff areas including break rooms, toilets, shower/changing facilities, storage areas, lobbies, loading bays and docks, associated plant throughout, photovoltaic panels and screened plant areas at roof levels, circulation areas and stair and lift cores throughout;
- External plant and 58 no. emergency generators located within a generator yard to the east and west of Buildings A and B at ground level. The area is enclosed by a c.6.5m high louvred screen wall;
- The proposed data halls (Buildings A and B) are arranged over 3 storeys with a gross floor area of c.37,647sqm each;
- The overall height of the data hall buildings is c.28m to roof parapet level and c.32m including roof plant, roof vents and flues. The total height of Buildings A and B does not exceed 112m OD (above sea level);
- The proposed development includes the provision of a temporary substation (c.32sqm), water treatment building (c. 369sqm and c.7.5m high), 7 no. water storage tanks (8,200m³ and c.6.35m high), 2 no. sprinkler tanks (c.670m³ each and c.7.2m high) with 2 no. pump houses each (c.40sqm c. 6m high);
- The total gross floor area of the data halls and ancillary structures is c.75,775sqm;
- All associated site development works, services provision, drainage upgrade works, 2 no. attenuation basins, landscaping and berming (c.6m high), boundary treatment works and security fencing up to c.2.4m high, new vehicular entrance from the North Road, secondary access to the south west of the site from the existing private road, all internal access roads, security gates, pedestrian/cyclist routes, lighting, 2 no. bin stores, 2 no. bicycle stores serving 48 no. bicycle spaces,

208 no. parking spaces including 10 no. accessible spaces, 20 no. electric vehicle charging spaces and 8 no. motorcycle spaces.

A proposed 220kv substation located to the south west of this site will be subject of a separate Strategic Infrastructure Development application to An Bord Pleanála under section 182A of the Planning and Development Act 2000 (as amended). Existing electricity overhead lines traversing the site will be undergrounded under concurrent application Ref. FW21A/0144.

Building A

- 37,647sqm Gross Internal Floor Area
- 3 no. storeys with roof plant at third floor. 28.57m high to roof parapet and 32m including roof plant, roof vents and flues.
- Ground floor amenity/administrative areas and data hall, first and second floor data halls and third floor roof plant.
- 2 no. generator yards to the east and west of Building A containing 29 no. emergency generators and diesel belly fuel tanks (28 no. for the data hall and 1 no. for the administrative area).

Building B

- 37,647sqm Gross Internal Floor Area
- 3 no. storeys with roof plant at third floor. 28.57m high to roof parapet and 32m including roof plant, roof vents and flues.
- Ground floor amenity/administrative areas and data halls, first and second floor data halls and third floor roof plant.
- 2 no. generator yards to the east and west of Building B containing 29 no. emergency generators and diesel fuel belly tanks (28 no. for the data hall and 1 no. for the administrative area).

Ancillary Structures

- 481sqm Gross Internal Floor Area
- Water treatment facility and 6 no. storage tanks, 2 no. sprinkler tanks and 2 no. pump houses, temporary substation, 2 no. bicycle shelters, 2 no. bin stores and associated car parking.

Landscaping

- 2 no. attenuation basins, perimeter berming and boundary treatment works.

Lighting

- The internal access routes will be lined with street lighting. Bat-sensitive lighting techniques will be incorporated into the lighting plan, which will avoid or minimise any potential impacts of lighting on bats for the operational phase.

Access/Car Parking

- Main vehicular and pedestrian access to the east from the North Road with secondary access to the south on the privately owned road.

- Car parking provision for 208 no. spaces for the development to include for staff and visitor parking including 10 no. accessible spaces, 20 no. ev charging spaces and 8 no. motorcycle spaces within the proposed site.
- A total of 48 sheltered cycle spaces adjacent to the entrance of the buildings are provided on the basis that this number is considered to be commensurate with the staffing numbers proposed for the site.

3.0 PLANNING AND DEVELOPMENT CONTEXT

This chapter provides an overview of compliance with national, regional and local planning policy.

The Department of Business, Enterprise and Innovation released a statement on the Role of Data Centres in Ireland in 2018 in which it sets out the role and significance of data centres in Ireland's wider enterprise policy objectives.

The statement outlines the presence of data centres in Ireland has raised the country's visibility internationally as a technology-rich, innovative economy. The statement goes on to state that data centres directly contribute to job creation and generate significant added economic benefit by providing a range of services to other firms.

A significant proportion of existing, permitted and proposed data centres are located in the Dublin Region. The statement notes that *"The potential cost benefits which could be provided by data centres are dependent on location, existing network capacity and the infrastructure required to supply the site."*

Under the National Strategic Outcome 5 – A Strong Economy Supported by Enterprise, Innovation and Skills of the Project Ireland - National Planning Framework (2040), Ireland is being prompted as a suitable international destination for ICT infrastructure.

It is our considered view that the current proposal complies with and exceeds the vision of the National Planning Framework on the following basis:

- The proposal makes the most efficient use of the site. The multi-storey nature Buildings A and B creates a compact and efficient development that utilises existing site services and road infrastructure.
- The overall development is appropriately located in West Dublin with excellent connectivity to the N2, N3 and M50.
- The proposal will contribute to the emerging digital infrastructure in Fingal County Council that helps to support a strong Irish economy through its enterprise, skills and innovation sectors.
- The proposal will continue to maintain high quality international connectivity, that Ireland is quickly becoming renowned for.

One of the Guiding Principles for Investment Prioritisation in Placemaking for Enterprise Development as set out in the Regional Spatial and Economic Strategy (2019-2031) is to *"Align to national strategy and approach for data centres – right location for use and energy demand."*

It is submitted that the current proposal and wider development site is supportive of the growth strategy and growth enables for the metropolitan region of the RSES – RPO 8.25.

The subject site and is zoned HI Heavy Industry under the current Fingal County Development Plan 2017-2023. The objective is “Provide for heavy industry”.

The vision for Heavy Industry is as follows;

‘Facilitate opportunities for industrial uses, activities and processes which may give rise to land use conflict if located within other zonings. Such uses, activities and processes would be likely to produce adverse impacts, for example by way of noise, dust or visual impacts. HI areas provide suitable and accessible locations specifically for heavy industry and shall be reserved solely for such uses.’

It is considered that as a sui generis use, the characteristics of this data centre project are most appropriately considered ‘industrial’ and therefore in accordance with the land use zoning objective. The County Plan provides for such instances where the use does not readily fit the categories provided:

Each land use zoning objective has a supporting Vision which elaborates on the zoning objective and sets the context for the type of development which would be acceptable. Uses which are neither ‘Permitted in Principle’ nor ‘Not Permitted’ will be assessed in terms of their contribution towards the achievement of the Zoning Objective and Vision.

The rationale for the site location and zoning strategy is discussed further in Section 5.2 of the Planning Report prepared by Brock McClure Planning and Development Consultants.

The subject site was identified as an ideal location for the proposed large scale data centre development based on the following key characteristics:

- 1) Utilising Existing Infrastructure
- 2) Large Data Centre Requirements
- 3) Appropriate Transitional Use

The subject site is zoned as “HI” and is surrounded by HI zoning to the north, south and west of the site.

The zoning to the immediate east of the site is zoned for General Employment “GE” with residential properties also located within this zoning.

The subject site is located within what could be considered a “transitional zone” between the two land use zonings. The proposed site layout is cognisant of the transitional nature of the site from heavy industry (quarry, power plant) to residential and general employment.

The proposed data halls are located predominantly in the central portion of the site. The proposed future substation associated with the data centre (subject to a separate application with An Bord Pleanála) will be located on the south western most portion of the site.

A generous green belt is proposed around the site providing a soft transition from sensitive neighbours and public roads. The proposed berming (up to 7m in height) with substantial native planting is proposed along the eastern portion of the site.

The more traditional existing heavy industry uses such as the power plant and quarry are located to the west of the site. The general site arrangement has been carefully assessed and is considered a suitable transition between land-use zonings.

All heavy industry uses associated with the proposed development are located within the western to central portions of the site, with softer uses located within the central to eastern areas.

Further detail in relation to the review alternative site layouts can be found in the Chapter 4 Consideration of Alternatives in the EIAR accompanying this planning application.

The subject site is located along the boundary of the Outer Airport Noise Zone. The proposed uses considered appropriate in the context of the area and heavy industry site's zoning.

The subject site is located directly adjacent to the Huntstown Power Station, Huntstown Quarry, Finglas, D11 Seveso site which is owned by Huntstown Power Company Limited and operated by Gensys Power Ltd. This is a lower tier Seveso Site with a consultation distance of 300m. The proposal accords with Objective DMS180 and DMS183 of the County Plan as follows:

A Land-Use Planning report has been prepared by AWN Consulting and accompanies this planning application. This report examines hazards associated with Fuel Oil, LPG, and Natural gas installations on site. It is concluded that the proposed data hall buildings is outside of the LUP Outer zone (1E-07) of Huntstown Power Station; therefore, the level of individual risk at the proposed development is acceptable.

The proposed development was designed with regard to the Design Guidelines for Business Parks and Industrial Areas and Objective DMS103.

The reduced car parking provision is in accordance with Policy DM113 of the plan which states: "*Limit the number of car parking spaces at places of work and education so as to minimise car-borne commuting.*" It is proposed that the quantum of car parking provision is 208 no. spaces for the development to include for staff and visitor parking. It is proposed to provide a total of 10 mobility spaces within the proposed site, to comply with the FCDP. The mobility impaired spaces exceed the requirements set out in the WCC Development Plan. The FCDP requires notes that "*One space or more per 100 spaces should be reserved for electric vehicles with charging facilities.*" It is proposed to provide a total of 20 no. designated Electric Vehicle parking spaces and the associated sharing points. The electric vehicle spaces have been designed in accordance with the requirements set out in the FCDP. 8 no. motorcycle spaces are also provided on site.

A total of 48 sheltered cycle spaces adjacent to the entrance of the buildings are provided on the basis that this number is considered to be commensurate with the staffing numbers proposed for the site.

As set out in Section 2.3.1 of the County Plan, a maximum of 1 car parking space shall be provided for every 100 sq.m GFA for Data Centres.

This development underlines a commitment by the applicant to the Huntstown site and ensures long term occupancy. The proposal to develop the site will enhance the land use under the current Development Plan and contribute to the overall sustainability of the site.

In addition to the above points, the proposed development has incorporated highly efficient technologies and methodologies allowing for the a high degree of sustainability. Such measures include:

- The data halls will be air cooled by air handling units via free air cooling for the majority of the time with evaporative (adiabatic cooling) during unusual high temperature periods (temperatures typically greater than 25 degrees Celsius).
- During normal operation the data storage buildings will be air cooled which significantly reduces the requirement for water compared to mechanical chilling, or a fully water cooled design. The chosen design efficiencies significantly reduce water demand on site.
- The protection and enhancement of landscape and ecology will be of continuing benefit to the area. Substantial perimeter landscaping and permeable boundary fencing will provide an effective corridor for wildlife around the site., whilst providing a green edge to the development. The green edge will enhance visual amenity at the interface of the development with the public road and encourage its assimilation into the area.
- Waste management during and post-construction will actively control the generation, recycling and disposal of waste material.
- Roof surfaces will be finished with white cap sheets with a high solar reflectance index (SRI) to minimise heat absorption.
- Low/zero carbon technologies such as, low energy lighting, sensor lighting controls, variable speed pumps etc., are proposed to be included in the detailed design.
- The location of the facility in Ireland allows for the use of free-cooling media without the need for excessive mechanical cooling. To take advantage of this resource, the air handling units will be direct evaporative (adiabatic) cooling type.
- Airside heat recovery systems with air-to-air heat pumps shall be installed in the office areas. These systems are to accommodate the fresh air and heating/cooling requirements for the space.
- Energy efficient Direct Drive Electrically Commutated (EC) Fans and motors shall be utilized where possible and variable speed drives (VSD's) will be utilized when EC Fans are not viable. Premium Efficiency motors will be specified on all equipment.
- All other data storage engineering services installations proposed have been considered in detail from an energy perspective.
- The design can accommodate the installation of a heat recovery system to supply low heat energy to a potential future district heating scheme.
- With respect to Building Regulations, Technical Guidance Document (TGD) Part L notes that spaces with installed heat capacity of less than 10W/m² are exempt from meeting the requirements of the TGD Part L document. As such the data storage operational space is exempt from TGD Part L 2017.
- The office space is fully air conditioned and will meet the requirements of the TGD Part L 2017. Building Energy Rating BER A3 or higher is targeted for the office areas with the utilization of high efficiency VRF Air Conditioning and roof mounted PV Panels to generate on site renewable electricity to be compliant with nZEB "Nearly Zero Energy Buildings" requirements.

4.0 ALTERNATIVES

This chapter provides an outline of the main alternatives examined during the design phase. It sets out the main reasons for choosing the development as proposed, taking into account and providing a comparison on the environmental effects.

This chapter assesses the evolution of development and the alternatives examined by the Applicant relating to the location, size and scale and project design and technology of the Proposed Development. This section provides a full justification for the proposed development and provides a comparison of the environmental effects of each alternative option.

The requirement to consider alternatives within an EIAR is set out in Annex IV (2) of the EIA Directive (2014/52/EU) and in Schedule 6 of the Planning and Development Regulations, 2001, as amended (“the Regulation”), which state:

*“A description of the **reasonable alternatives** studied by the person or persons who prepared the EIAR, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the proposed development on the environment.”*

As such, the consideration and presentation of the reasonable alternatives studied by the project design team is an important requirement of the EIA process. The main alternatives examined throughout the design process are set out as follows:

Alternative Locations

Having regard to these various environmental and development considerations, Huntstown was considered the most appropriate location for the proposed data hall buildings having regard to:

- the co-locational benefits beside the power station, in line with ‘Eirgrid’s Data Centre Connection Offer Process and Policy, 2020’ (which necessitates the provision of on-site dispatchable generation for firm capacity for data hall buildings within the Greater Dublin Area);
- the short grid connection to the electricity network, thus decreasing energy losses associated with the transmission of energy and increasing the overall energy efficiency of the Proposed Development;
- excellent transport connections to the M50 and N2; and
- large scale data centre requirements relating to site scale and size.

Given the transitional nature of the site between traditional heavy industry uses to the west and commercial uses to the east, the proposed development is the most appropriate use for the site. The proposed development is in accordance with the zoning and other relevant policies and objectives of the Fingal County Development Plan 2017-2023. Having regard to the site specific nature of the development, further consideration of alternative site locations are not considered essential in respect of the EIAR legislation and guidance.

Alternative Designs and Layouts

Several design iterations were undertaken by HJL Architects to determine the most efficient design and layout having regard to the surrounding site context and requirements of the end user. We refer to the Design Statement prepared by HJL Architects for more information.

The design evolved as part of a multi-disciplinary process with input from the EIAR Team, design team, Applicant and advice received as part of the pre-planning process with representatives of Fingal County Council.

The process ensured that the proposal is fully site responsive and all environmental factors, including archaeology, architecture and cultural heritage, have been taken into account.

Site layout considerations were primarily made based on the following factors:

- Minimising potential impacts on the environmental and visual impact sensitivities associated with the surrounding land uses;
- Location of the proposed substation and its proximity to the future grid connection; and,
- Orientation of the main buildings to optimise the use of the space available and minimise visual and noise impact.

Option 1

Option 1 of the proposed development shown in Figures 4.1 (alternative layout) and Figure 4-1 (alternative elevation) (See Chapter 4) was presented to FCC during the first pre-planning consultation meeting on the 22 September 2020. This layout included for 3 no. data centre buildings occupying the majority of the site, with 2 no. large attenuation basins both in the north-east and south-west, with the water treatment plan building located to the south of Building A. The layout reserves space on the western boundary for the future substation development. Buildings A and C are orientated in an east-west direction adjoining the eastern site boundary. Building B is orientated in a north-south direction adjoining the western boundary. The three buildings require individual external plant/generators with significant visual impact to the public road – North Road. The substation is significantly smaller in Option 1 as it was developed prior to detailed design.

Option 2

Option 2 shown in Figures 4.3 and 4.4 (See Chapter 4) was presented to FCC during the second pre-planning consultation meeting on the 11 November 2020. The scale, massing and site coverage reduced from previously proposed in Option 1. The buildings are reduced from three to two buildings but the footprint and height remains largely as proposed. The set-back distances from sensitive receptors are greatly improved. Although the overall height remains as proposed in Option 1, the revised building design provides an additional storey of accommodation. A generous green belt is proposed around the site providing a soft transition from sensitive neighbours and public roads. Generous perimeter landscape mitigation allows the site to breathe. The proposed berming (up to 7m in height) with substantial native planting compensate for hedgerow removal and the integration of storm water attenuation and vehicle parking. The revised masterplan provides mitigation to visual impact, noise and emissions with improved set-back distances and screening.

Option 3

The general form, massing and siting of Buildings A and B remain as proposed at our pre-planning meeting 11 November 2020. Design efficiencies reduce the number of storeys from 4 storeys to 3 storeys. The overall building height remains at 28m with an overall flue height of 32m in keeping with the proposal presented at pre-planning (November 2020). Overall flue heights are in accordance with aviation height limits.

Design efficiencies significantly reduce water demand on site. The proposal will be cooled using a free air cooling system. The redesign results in a slightly larger building floor area but the proposal maintains generous separation distances to the northern and eastern boundaries. Building A is located c.64m from the eastern site boundary (at its closest point) and c.77m to the residential dwellings further east. Building A is located c.64m from the Dogs Trust Building to the north of the site. Landscaped berming is provided along the site perimeter to enhance vegetative screening and tree cover when viewed from adjoining properties. All access and wayleave requirements are incorporated into the proposed layout.

Option 4

Option 4 consisted of the following key elements:

- Buildings A and B arranged over three storeys with associated plant and ancillary structures total floor area of 75,775sqm.
- Plot ratio 0.57 and site coverage 0.20 based on a site area of c.13.3ha
- Total footprint (excluding plant) 26,321sqm.

The main alternative layouts considered are illustrated in Figures 4.1 - 4.5. Figure 4.6 (See Chapter 4) shows the chosen layout for the Proposed Development (Option 4 - chosen), this places two data centre buildings in a north south arrangement, with attenuation basins located on the northern boundary, and the water treatment plant in the south-east. The layout reserves space on the western boundary for the future substation development. The site now includes the two existing residential units, proposed for demolition as part of the subject application.

The building orientation and main site entrance is as proposed under the previous options. Buildings and plant installations are tightly contained centrally to maximise landscaping mitigation around the full perimeter of the site in the form of a landscaping belt, and in particular along the most sensitive aspects to east (North Road) and north (Dogs Trust Ireland), softening transition areas and screening installations visible from site boundaries.

The perimeter berming has been further refined to enhance visual screening from the adjoining sites and the North Road. The separation distances created by the wayleaves and berming provide visual relief and noise attenuation to the adjoining properties, particularly to the north at the Dogs Trust facility. All office areas within the site have a south aspect looking onto this landscaped belt along the southern and eastern site boundaries.

The revised external façade elevates the architectural quality of the data centre improving the visual appearance of building to the public facing North Road. The façade comprises a mosaic of square panels of varying depths and angles, powder coated to juxtapose the colour finish of the cladding face. In this instance, the southern elevations of Buildings A and B act as the visual focal point of the site directing staff and visitors to the administration areas.

The data halls are free-cooled therefore reducing water consumption and storage on site, as agreed in principle with Irish Water. Option 4 mitigates against visual impact, noise and emissions while protecting and enhancing the ecological value of the site.

The proposed development layout struck the right balance between providing sufficient capacity on the site to make the development economically viable and providing a suitable layout for the environmental factors considered.

The proposed layout, with the two buildings, is considered to be the optimal design. The two building layout prevents the overdevelopment of the lands and allows for movement around the site and appropriate separation from the boundary and road frontage. The configuration shown in Figure 4.6 represents the most practical configuration for reasons of the proposed development in relation to the environmental sensitivity of the site's surroundings. The layout chosen provides provide the optimum arrangement for the operation of the facility and to minimise any environmental and landscape effects.

Alternative Processes

The global development of data centres has seen significant design and construction improvements relating to energy efficiency of buildings. Use of alternative energy technologies were explored as part of the process.

The environmental impact of the proposal is minimised through energy saving technologies including: solar power/PV panels, low energy lighting, sensor lighting controls, variable speed pumps.

The proposed development was carefully designed, taking into consideration the site context and existing neighboring commercial and residential properties to the north and east on North Road, the existing heavy industry uses to the west and the local environmental conditions including air quality, noise and vibration, visual impact and traffic considerations.

The development maximises the development potential of the site, adjoining an existing power station while improving natural screening through landscaping treatments along to site perimeter particularly along the northern and eastern boundaries.

5.0 POPULATION AND HUMAN HEALTH

This chapter evaluates the impacts if any, of the proposed development on population and human health. The potential receptors within the environs of the site including residential properties, industrial, agricultural, and commercial businesses in the area. 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 detail their respective EIAR chapters: Where these topics are dealt with in further detail elsewhere in this EIA Report, the relevant chapters have been cross referenced in this chapter.

Receiving Environment

The sensitivity of the surrounding area has been considered based on the details of the published data. The local area has seen a population growth between the 2011 and 2016 census, there is a large proportion of the population within working age (24 – 44 years old) reflective of the national level. The area surrounding the site is divided between electoral divisions, such as The Ward with relatively low unemployment (11.57%), and a high proportion of residents with a university education (36.2%), and electoral divisions, such as Finglas North A with higher unemployment rate (28.71) and a low percentage with university education (4.8%). The disposable income in the Dublin region is higher than average, relative to the national level disposable income. The Pobal HP Deprivation Index shows a disparity between adjacent electoral divisions with three ranking “marginally above average”, two ranking “marginally below average”

and two ranking “disadvantaged”. The general health of the population is on trend with the state averages.

The initial analysis indicates the site has good access to social infrastructure and emergency services within 5 km of the site and in general a lack of vulnerable persons within the immediate vicinity (schools or public amenity). There are few residential receptors within close proximity to the site as the land is located beside the Huntstown Power Station and Huntstown Quarry.

Potential Impacts

The proposed development has potential for a positive impact in regards to increased job opportunities and improved accessibility to jobs during construction and operation to the Fingal area. The potential 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.

The location of the proposed development within lands zoned for heavy industry, adjacent to a national motorway the proposed development will have a minimal impact on the local landscape amenity. There will be no impact on the local parks.

The power supply for the proposed development will be drawn directly from the national grid and there is no anticipated impact to local residential or business users. A connection to mains water can be facilitated with Irish Water. The anticipated diesel usage for the entire development during normal operation is minimal. There are no groundwater source protection zones in the immediate vicinity of the site, and the GSI Well Card Index does not show any wells drilled or springs at the site. No significant impact to Natural Resources or Material Assets is predicted, other than loss of a small portion of greenfield land.

During construction, operation and decommissioning, there will be impacts in relation to noise, dust and traffic. Modelling has been undertaken to confirm the impact on the environment and human health and this is described in the relevant chapter of the EIAR.

Specifically in relation to air quality, the mitigation measures that will be put in place to manage dust during construction and the project design to manage emissions during operation 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.

Construction noise and vibration will be typically limited to daytime periods only. There are no health risks associated with operational noise resulting from the construction of the development subject to implementation of good site management practices and mitigation measures. During operation, the noise limits at the nearest noise sensitive locations are set in line with the EPA NG4 (2016) guidelines, and the below those set by the WHO *Guidelines for Community Noise (WHO 1999)* document. There are no health risks associated with operational noise resulting from the development.

Due to the proximity to the Huntstown Power Station that is notified to the Health and Safety Authority (HSA) as a Lower Tier COMAH site. A Land Use Planning (LUP) Assessment under the COMAH directive has been prepared by AWN Consulting and is included as Appendix 5.1. The LUP report examines hazards associated with Fuel Oil, LPG, and Natural gas installations on the proposed development site. The LUP report concluded that the proposed development is outside of the LUP Outer zone (1E-

07) of Huntstown Power Station; therefore, the level of individual risk at the proposed development is acceptable. The proposed development is located sufficiently far away from the lower tier Seveso site to have no effects with regard to COMAH related effects.

Mitigations and Residual Impacts

Any perceived nuisance impacts on the immediate local population will be short-term and temporary in nature due to the length of the construction process for the Proposed Development. No remedial or reductive measures are therefore required beyond normal landscaping, noise and construction mitigation that are outlined elsewhere within this EIA Report, and the Construction Environmental Management Plan (CEMP) included with the application documentation. The impact of construction of the proposed development is likely to be **negative, imperceptible** and **short-term** with respect to human health.

As outlined in Chapter 9 (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. Chapter 9 demonstrate that the impact from air quality the operation of the proposed development on human health will be **negative, slight, and long-term**.

As detailed in Chapter 10 (Noise and Vibration), proprietary noise control measures including an acoustic screen will be employed as part of design in order to ensure that noise emissions from building services plant do not exceed the adopted criterion at any nearby noise sensitive locations. The resultant noise impact is **negative, not significant** and **long-term**.

6.0 LAND, SOILS, GEOLOGY AND HYDROGEOLOGY

This chapter of the EIA Report assesses and evaluates the potential impacts of the Proposed development on the land, soils, geological and hydrogeological environment.

Inspection of the available GSI maps show that the bedrock geology underlying the site belongs to Tober Colleen formation consisting of rocks from the Late Chadian to Asbian age. The site is located over dark-grey, calcareous, commonly bioturbated mudstones and subordinate thin micritic limestones. Site investigations carried out in 2020 confirmed that overburden clays overlying the bedrock were at variable depths from 3 to 10.45 metres below ground level (mbgl). This GSI categorise the bedrock aquifer underlying the site as having an ‘Extreme’ vulnerability to the north and western boundary and ‘High’ vulnerability throughout the rest of the site. However, according to the site investigations, site-specific vulnerability can be more accurately described as ‘High’ (3-5 m of thickness) at the north eastern section and ‘Moderate’ (5-10 m) to ‘Low’ (> 10 m) throughout the rest of the site.

The GSI/Teagasc subsoil mapping database of the quaternary sediments in the area of the subject site indicates one principal soil types: Limestone Till Carboniferous (TLs). This till is made up of glacial Clays which are less permeable than alluvium subsoils.

The Groundwater Body (GWB) underlying the site is the Dublin GWB. Currently, the most recent WFD groundwater status for this water body (2013-2018) is ‘Good’ with a current WFD risk score ‘Under Review’

Based on the TII criteria (refer to Appendix 6.1) for rating the importance of geological features, the importance of the bedrock and soil features at this site is rated as **High importance** with high significance or value on a local scale. This is due to the existence of an existing quarry in the vicinity of the subject site (Huntstown quarry) which is located c. 300 m to the west of the site.

The importance of the hydrogeological features at this site is rated as **Low Importance**. This is based on the assessment that the attribute has a medium quality significance or value on a local scale. The aquifer is not widely used for public water supply or generally for potable use. In addition, there would not be direct or indirect hydrogeological connection between the site and any protected sites.

It is estimated that approximately 35,617 m³ of topsoil, subsoils, and (eventually) bedrock, will be excavated to facilitate construction of the development. Suitable soils and stones will be reused on-site as backfill in the grassed areas, where possible. It is currently envisaged that all of the excavated material will not require removal offsite as this soil will be reused on site

The potential impacts of construction and operation and mitigation measures proposed have been identified and will be included in the Construction Environmental Management Plan (CEMP) for the proposed development.

The excavation will require soil and rock excavation and infill. Temporary storage of soil will be carefully managed in such a way as to prevent any potential negative impact on the receiving environment and the material will be stored away from any open surface water drains. Although there is no evidence of contamination of soil at the site, where any excavated material is found to be contaminated, an appropriate disposal method shall be selected depending on the type of contaminant found. Testing will be carried out in pre-construction works by the contractor to determine the soil classification.

All fill and aggregate for the Proposed development will be sourced from reputable suppliers. All suppliers will be vetted for the appropriate certificates, management status and regulatory compliance standards.

All fuel tanks shall be stored in designated areas, and banded to a volume of 110% of the capacity of the tank within the bund (plus an allowance of 30 mm for rainwater ingress). Refuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles, will take place in a designated area (or where possible off the site) which will be away from surface water gully's or drains.

It is unlikely that contaminated material will be encountered during construction of the Proposed Development. Nonetheless, excavation works will be carefully monitored by a suitably qualified person to ensure that potentially contaminated soil is identified and segregated from clean/inert soil. In the unlikely event that potentially contaminated soils are encountered, they should be segregated, tested and classified as hazardous or non-hazardous in accordance with the EPA Guidance Document: *Waste Classification – List of Waste and Determining if Waste is Hazardous or Non-Hazardous* (2015) and *Council Decision 2003/33/EC*. It should then be removed from site by a suitably permitted waste contractor to an authorised waste facility.

Following implementation of mitigation measures detailed in Chapter 6 of the EIA Report, the predicted impact during construction of the Proposed development will be **short-term, imperceptible and neutral**.

During the Operational phase, there are limited activities that could potentially impact on the land soils, geological and hydrogeological environment. The development includes the storage of emergency generators and diesel fuel belly-tanks for each data hall. However, it is noted that any accidental discharge will more likely impact stormwater drainage due to the hardstand and drainage infrastructure proposed which include 2 no. petrol interceptors. Generator yard passes through petrol interceptor prior to connection to the onsite drainage networks. This together with hardstand cover will minimise the potential for any impact to the underlying aquifer.

An environmental management plan will apply to the overall development during the operational phase incorporating mitigation measures and emergency response measures.

The predicted impact during operation of the Proposed Development, following implementation of mitigation measures detailed in Chapter 6 of the EIA Report will be **long-term, imperceptible** and **neutral**.

7.0 HYDROLOGY

This chapter of the EIA Report assesses and evaluates the potential impacts of the Proposed development on the surrounding water and hydrological environment. There are a network of shallow ditches running along the field boundaries which consist of a series of local manmade drainage, with intermittent or ephemeral characteristics and likely fed from surface runoff and therefore are not considered to be a significant watercourse or stream

The local drainage ultimately flows in a northerly direction towards the Huntstown Stream (located c. 800 m to the north of the site). The Huntstown Stream leads to the Ward River c. 6.6km downstream and the Ward River discharges to the sea at Malahide Estuary over 15 river km downstream of the site.

The Huntstown Stream belongs to the Ward River WFD surface water body and is classified as having 'Moderate' status and has a rating of 'At risk of not achieving good status'. This moderate status is related to the nitrogen (nitrate, specifically) and orthophosphate conditions measured in the Ward River.

The potential risk of flooding on the site was also assessed. There is no risk of flooding affecting the site from fluvial or coastal sources, since the site lies within Flood Zone C (i.e., where the probability of flooding from rivers is less than 0.1% or 1 in 1000). However, an existing ditch that crosses the site will need to be diverted. The diversion has been designed in accordance with OPW Guidelines in order to ensure there will be not impact on the site in terms of flood risk

Based on the TII methodology (refer to Appendix 7.1), for rating the importance of hydrological features, the importance of the hydrological features at this site is rated as **low importance**, based on the assessment that the attribute has a low quality significance or value on a local scale.

The potential impacts of construction and operation and mitigation measures proposed have been identified and will be included in the Construction Environmental Management Plan (CEMP) for the Proposed Development.

Temporary storage of soil will be carefully managed with excavations remaining open for as little time as possible and weather conditions will be considered when planning construction activities.

Any discharge of construction water during the construction phase will be discharged to foul sewer. Pre-treatment and silt reduction measures on site will include a combination of silt fencing, settlement measures and hydrocarbon interceptors. Any minor ingress of groundwater and collected rainfall in the excavation will be pumped out during construction. Extensive monitoring will be adopted to ensure that the water is of sufficient quality to discharge to the sewer.

To minimize any impact from material spillages, all oils, paints etc. used during construction will be stored within temporary bunded areas. All tanks will be bunded to 110% of the capacity of the largest tank/container within the bunded area(s) (plus an allowance for 30 mm of rainwater ingress). Refuelling of construction vehicles and the use of any hydraulic oils or lubricants will take place in a designated area (or where possible off site) which will be away from surface water gullies or drains. All contractors will be required to implement the CEMP.

The implementation of mitigation measures detailed in Chapter 7 of the EIA Report will ensure that the potential impacts on the surface water environment do not occur during the construction phase and that the residual impact will be **short-term-imperceptible- neutral**.

During operation there are limited risks to surface water receptors. The development includes the storage of emergency generators and diesel fuel belly-tanks for each data hall. However, it is noted that any accidental discharge will more likely impact stormwater drainage due to the hardstand and drainage infrastructure proposed which include 2 no. petrol interceptors. Generator yard passes through petrol interceptor prior to connection to the onsite drainage networks. This together with hardstand cover will minimise the potential for any impact to the underlying aquifer.

An environmental management plan will apply to the overall development during the operational phase incorporating mitigation measures and emergency response measures. During operation the site will operate in compliance with the requirements of an Irish Water (IW) connection agreement licence for discharge to sewer.

The implementation of mitigation measures highlighted in Chapter 7 will ensure that the potential impacts on the surface water environment do not occur during the operational phase and that the predicted impact will be **long-term-imperceptible-neutral**.

8.0 BIODIVERSITY

This chapter provides an assessment of the impacts of the proposed development in question on the ecological environment, i.e. flora and fauna. The development site is predominately comprised of fallow farmland of relatively low local ecological value. Hedgerows and mature trees present opportunities for roosting and commuting bats.

The subject site is drained by internal ditches which primarily drain to ground and during extended periods of rain into a large deep drainage ditch adjacent to the Huntstown Power Facility at the western perimeter. This larger ditch is intermittently hydraulically linked to the Huntstown Stream depending on flow rates, which is a

tributary of the Ward River, which flows northeast to Malahide Estuary over 15 river km downstream. Malahide Estuary is designated as both an SAC and SPA.

There are no rare or protected habitats recorded in the study area. The site may be considered of Low Local Ecological Value. There are no predicted significant impacts on local ecology.

None of the qualifying habitats or species of the European sites considered in the potential zone of impact occur under the footprint of the proposed works areas.

The proposed development will have no predicted impacts on European sites or on local ecology, therefore cumulative impacts can be ruled out.

Standard mitigation measures for the avoidance of impacts on breeding birds is included along with avoidance measures with regard to potential impacts on bats from lighting on the site.

The development is located in an area of low local ecological value and, as such, is predicted to have a **neutral** and **imperceptible** effect on biodiversity.

9.0 AIR QUALITY AND CLIMATE

This chapter of the EIA Report evaluates the impacts which the proposed development may have on air quality and climate.

In terms of the existing air quality environment, baseline data and data available from similar environments indicates that levels of nitrogen dioxide, carbon monoxide, particulate matter less than 10 microns and less than 2.5 microns are generally well below the National and European Union (EU) ambient air quality standards.

The existing climate baseline can be determined by reference to data from the EPA on Ireland's total greenhouse gas (GHG) emissions and compliance with European Union's Effort Sharing Decision "EU 2020 Strategy" (Decision 406/2009/EC). Data from the EPA in 2020 estimates that Ireland had total GHG emissions for 2019 of 59.9 million tonnes carbon dioxide equivalent (Mt CO₂eq). This is 6.98 Mt higher than Ireland's emission ceiling for 2019 as set under the EU's Effort Sharing Decision (ESD), 406/2009/EC. Emissions are predicted to continue to exceed the targets in future years.

Air Quality

During the construction phase there is the potential for dust emissions to impact nearby sensitive receptors resulting in potential dust soiling and human health impacts. Best practice mitigation measures have been proposed for the construction phase of the Proposed development in order to mitigate potential dust impacts. Provided the mitigation measures outlined within Chapter 9 are implemented construction dust impacts will be short-term, negative, localised and imperceptible at nearby sensitive receptors.

Air dispersion modelling of operational phase emissions from the Proposed development was carried out using the United States Environmental Protection Agency's regulatory model AERMOD. The aim of the study was to assess the contribution of operational emissions of NO₂ from the Proposed development to off-site levels of this pollutant. Both the methodologies of the USEPA and UK Environment

Agency were included within the assessment as per guidance issued by the Irish EPA. An assessment was conducted for the following three scenarios:

- **Do Nothing Scenario:** Under the Do Nothing Scenario no operations will occur and the previously identified impacts of air emissions. .
- **Proposed development Scenario:** This scenario involves the emergency operation of all 56 no. diesel generators. The scenario also includes a worst-case approach to testing for all 56 generators.
- **Cumulative Impact Scenario:** The cumulative impact scenario assessed the combined impact of the Proposed development as outlined above as well as the nearby Huntstown Power Station (see Appendix 9.3).

USEPA Methodology

The modelling assessment has found that ambient NO₂ concentrations as a result of the emergency operations and scheduled testing of the standby diesel generators are in compliance with the relevant ambient air quality limit values at all locations at or beyond the site boundary under all scenarios modelled. The impacts to air quality from operation of the Proposed development are therefore deemed long-term, slight, localised and negative.

For the Do Nothing Scenario, the ambient air quality at the site will remain as per the baseline and will change in accordance with trends within the wider area (including influences from new developments in the surrounding industrial estates, changes in road traffic, etc.). Therefore, this scenario can be considered neutral in terms of both air quality and climate.

For the Proposed development Scenario, emissions from the site assuming scheduled testing as well as emergency operation of the standby generators for 100 hours per year will lead to an ambient NO₂ concentration (including background) which is 59% of the maximum ambient 1-hour limit value (measured as a 99.8th percentile) and 80% of the annual limit value at the worst-case location at or beyond the site boundary.

For the Cumulative Impact Scenario, emissions from the site assuming scheduled testing as well as emergency operation of the standby generators for 100 hours per year, and including the nearby Huntstown Power Station, will lead to an ambient NO₂ concentration (including background) which is 59% of the maximum ambient 1-hour limit value (measured as a 99.8th percentile) and 81% of the annual limit value at the worst-case location at or beyond the site boundary.

UK EA Methodology

The results for the Proposed development Scenario indicate that in the worst -case year, the standby generators can operate for up to 33 hours per year before there is a likelihood of an exceedance of the ambient air quality standard (at a 98th percentile confidence level).

For the Cumulative Impact Scenario, the results indicate that in the worst-case year the standby generators can operate for up to 33 hours per year before there is a likelihood of an exceedance of the ambient air quality standard (at a 98th percentile confidence level).

However, the UK guidance recommends that there should be no running time restrictions placed on these generators which (aside from testing) are only used to provide power on site only during an emergency scenario.

Climate

Based on the scale and temporary nature of the construction works, the potential impact on climate change and transboundary pollution from the construction of the Proposed development is deemed to be short-term and imperceptible in relation to Ireland’s obligations under the EU 2020 target.

On the basis that the Proposed Development will consume 150MW of power this equates to 1,310 GWh annually based on the assumption of the national fuel mix. This translates to approximately 490,000 tonnes of CO₂eq per year. Without any commitments from the applicant, this will have an **indirect, long-term, negative and slight** impact on climate.

However, the applicant is committed to running its business in the most environmentally friendly way possible and has developed an approach which will (i) use existing infrastructure; and (ii) provide a mechanism which will aim to secure additional renewable energy generation.

<p>USE OF EXISTING INFRASTRUCTURE</p>	<p>The Proposed Development has been strategically located to adjoin the Huntstown Power Station. Co-locating power generation and electricity consumption on the same site is beneficial in the following ways:</p> <ul style="list-style-type: none"> • Minimises the need for national grid network improvements, including new high voltage wires and cables, that would otherwise be the case to transfer additional electricity to a new location, the cost of which would be partly paid for by all electricity users; and • Provides the most energy efficient location for the electricity consumer that minimises electrical losses that occur when transferring electricity longer distances. • In addition, this ‘co-location’ approach will avoid the requirement to build new on-site dispatchable gas power generation, thus avoiding the potential introduction of additional new fossil fuel generations and associated greenhouse gas emissions. The development is also adjacent to the Huntstown Bioenergy plant and feasibility studies will be undertaken to understand the suitability of any excess heat generated from the Data Centre being used in the Anaerobic Digestion process at the neighbouring site, hence making both developments more efficient.
<p>RENEWABLE ENERGY GENERATION</p>	<p>Working alongside the proposed development, the Applicant will obligate the facility end user, to enter into arrangements which are capable of underpinning new renewable energy generation calculated to offset the energy consumed by the proposed development from the electricity grid. These arrangements will:</p> <ul style="list-style-type: none"> • Be in the form of Corporate Power Purchase Agreements between the Applicant’s group and the facility end user; • Provide for the establishment of new renewable energy generation projects by the Applicant’s group, that will not be supported by government or consumer subsidies – these new renewable energy projects will be:

	<ul style="list-style-type: none">○ Located throughout Ireland;○ Phased over the expected ramp up of the energy demand of the proposed development; and○ In total, are calculated to exceed the expected annual volume of energy consumed on site by the proposed development; <p>Through these obligations, it is the goal of the Applicant that for every unit of energy consumed by the data centre, a unit of new renewable energy generation would be despatched to the wider electricity system to off-set it, thus delivering the objective of operating the proposed development on a net zero carbon basis that would not impact Ireland's overall climate targets. Any associated additional renewable energy supply would also increase energy security through indigenous energy sources.</p>
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Human Health

The best practice dust 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. Therefore, the impact of construction of the Proposed development is likely to be short-term and imperceptible with respect to human health.

As demonstrated by the dispersion modelling results, pollutant concentrations with the Proposed development operational are compliant with all National and EU ambient air quality limit values and, therefore, will not result in a significant impact on human health.

Mitigation Measures

A dust management plan will be implemented during the construction phase of the Proposed development to ensure that no significant dust nuisance occurs outside the site boundary.

With regards to the operational phase, provided each stack is built to the minimum heights determined by the air dispersion modelling, no further mitigation measures are required.

Residual Impacts

If the mitigation measures outlined in this assessment are implemented, there will be no residual impacts of significance on air quality or climate from the construction or operational phases of the Proposed Development.

10.0 NOISE AND VIBRATION

This chapter assesses the anticipated noise and vibration impact associated with the proposed development at nearby noise sensitive locations.

The existing noise climate has been surveyed at nearby noise sensitive receptors over the course of typical day and night-time periods. Road traffic movements, both distant and local, were noted as the most significant source of noise during both daytime and night-time periods. Other noise sources included aircraft activities and other typical noise sources expected in a suburban environment (e.g. pedestrian activity, dogs barking, distant plant noise etc.).

When considering a development of this nature, the potential noise and vibration impact on the surroundings must be considered for each of two distinct stages: the short-term impact of the construction phase and the longer-term impact of the operational phase.

During the construction phase of the proposed development 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 resultant impact is **moderate, negative and short-term**.

The primary sources of noise during the operational phase of the proposed development will be long-term and include the introduction of additional building services plant for general site operation, additional building services plant (i.e. generators) for emergency site operation and the introduction of additional vehicular traffic on existing public roads. Proprietary noise and vibration control measures will be employed in order to ensure that emissions from building services plant do not exceed the relevant criteria at nearby noise sensitive locations. Any change in noise levels associated with additional vehicles at road junctions in the vicinity of the proposed development is expected to be imperceptible. The resultant noise impact is **imperceptible, negative and long-term** while being within all adopted noise criteria.

No significant sources of vibration will be present during the operational phase. There are therefore no predicted vibration impacts at neighbouring dwellings during the operational phase. The resultant vibration impact is **imperceptible, neutral and long-term**.

11.0 LANDSCAPE AND VISUAL

Characteristics of the Site and Environs.

The Proposed development site has the character of an agricultural field with traditional hedgerow field boundaries. The tree cover on the site is primarily contained within the hedgerows on the perimeter of the site and the field boundaries with the site. The landscape of the subject lands has no inherent aesthetic qualities of note

The flat topography of the wider area reduces the opportunity for expansive views over the landscape. The visual sensitivity is reduced further by the large industrial facilities close to the site, most notably the power station abutting the site to the west. The area is zoned in the development plan for Industrial uses as it considered in planning terms to be an extension of the surrounding industrial landscape. The industrial development general infrastructure in the area have created a landscape where there are no views of any notable landscape value in local and wider area. There are also no landscape planning objectives that relate specifically to the site

Impact on Landscape Character

The operational phase will give rise to a noticeable change in the landscape character. The overall impact on the landscape character would therefore be considered negative, long-term and moderate in magnitude.

Landscape and visual impacts due to the introduction of a new landscape.

The native woodland to be created will be visible from the surrounding landscape and will result in a positive impact on local views. The impact of the proposed landscape scheme would be considered positive, long-term, and significant in magnitude

Landscape and Visual impacts due to the introduction of new buildings and built structures;

The overall visual impact of the Proposed development is considered negative, long-term and moderate due to the extent of screening associated with the development paired with the level of similar scale development in the surrounding area.

12.0 ARCHAEOLOGICAL, ARCHITECTURAL AND CULTURAL HERITAGE

This chapter assesses the predicted impacts of the proposed development on archaeological, architectural and cultural heritage using a number of sources including the Record of Monuments and Places, the National Inventory of Architectural Heritage, the Excavations Database, cartographic, aerial photography and documentary sources.

The construction of the Proposed development will not impact directly on any sites included in the RMP. However, the baseline survey, geophysical survey and archaeological testing has identified archaeological sites located within the boundary of the Proposed Development, most notably in (but not limited to) Field 2.

The Proposed development works will have direct, negative and profound impacts on these sub-surface features.

However, these sub-surface features would not have been known had archaeological testing not been undertaken.

The implementation of mitigation measures, detailed in Section 12.6.1, will facilitate the excavation of these features in advance of the Proposed Development. Although the excavations will result in the removal of these archaeological features, the excavation will add to the academic understanding of the history of the area through archaeological research and reporting.

Therefore, the overall impact of the proposed development on the archaeological heritage is deemed to be neutral and not significant, and long term.

Please note that the recommendations given in Chapter 12 are subject to the ongoing approval of the National Monuments Service, Department of the Culture, Heritage and the Gaeltacht.

13.0 TRAFFIC AND TRANSPORTATION

This chapter assesses the traffic impact that the proposed development will have on the surrounding road network during construction and operation. The proposed site is

located on lands adjacent to the R135 regional road. It is accessed via agricultural accesses off the R135 and the Huntstown Quarry and Power Station access road (private) to the south. The R135 is known locally as the North Road. The North Road is approximately 7.5 metres wide with a footpath on the eastern side of road to the site frontage. The North Road intersects with the N2 Dual carriageway at the Cherryhound Interchange to the north and forms a cul-de-sac to the south.

Traffic Generation and Distribution

At the construction stage the site will generate a maximum of 200 operatives' vehicles per day accessing the site together with up to 110 HGV and 30 LGV movements. Excess operative's vehicles will be parked at an existing surface car park (DAA surface car park or similar such established facility) and workers bused to and from the site. Construction shifts will commence at 07.00 hours and finish c.15.30. These measures will be implemented to reduce the impact on the local road network during peak times which are 08.00-09.00 hours and 16.30-17.30 hours for the respective AM and PM peaks. At operational stage there will be a maximum of 16 two-way trips to and from the site for the AM peak and 161 for the PM peak which reflects the anticipated change of shift times. As the development will be phased the traffic impact for three scenarios – Phase 1 construction; Phase 1 operational with Phase 2 construction; and complete development operational were considered.

Vehicular and pedestrian access to the development will be from the R135 (North Road) from the east. An emergency/secondary entrance will be provided via the Huntstown Quarry and Huntstown Power Station access road to the south-west. Temporary access for construction works and to enable a phased delivery of the development is proposed through an existing site entrance off the North Road.

Construction Phase Impacts

Construction activities will therefore be largely contained within the boundary of the site. There will be a requirement for construction materials to be brought to the site as well as specialist plant. It is anticipated that these deliveries will occur throughout the day and will be infrequent.

It has been established that the existing priority junction at the N2 off Slip/R135 North Road is operating above capacity during the AM peak, and the signalised junction at Kilshane Crossroads is operating above capacity during both the AM and PM peaks for the Do-Nothing scenario in 2022 (ignoring the impact of the Covid pandemic on traffic) based on grown 2019 traffic survey information combined with committed developments. The impact of the construction phases will result in a relatively small decrease in network/practical residual capacity due to the development traffic at the two junctions. The operation of the R135 North Road/Elm Road signalised junction will operate within capacity for both the Phase 1 Construction and Phase 1 operation/Phase 2 construction scenarios.

The estimated increase in traffic associated with the construction phases of the proposed development will be short term, negative and slight.

Operational Phase Impacts

It is expected that the overall development will be operational by 2027. The operational shifts are such that the assessment of the N2 off Slip/R135 North Road priority junction at PM peak was warranted, and that the junction capacity would be exceeded slightly in the 2032 5 years after opening scenario. However, in the knowledge that the local

authority will be carrying out signalisation of the junction it was demonstrated that such works would ensure sufficient reserve capacity at the junction for the 2042 design horizon. It was found that the capacity of the R135 North Road/Elm Road signalised junction will operate within capacity with the development up to the 2042 design horizon.

The estimated increase in traffic associated with the proposed development will have a slight negative impact on the road network in the vicinity of the site.

14.0 MATERIAL ASSETS

This chapter prepared evaluates the potential impacts, from the proposed development on Material Assets as defined in the EPA Guidelines. The impacts on some of the material assets described in the above guidance have already been considered in the following chapters and therefore these aspects have not been addressed in specific detail within this chapter.

- Chapter 5, Population and Human Health;
- Chapter 6, Land, Soils, Geology & Hydrogeology;
- Chapter 7, Hydrology;
- Chapter 9, Air Quality & Climate;
- Chapter 12, Cultural Heritage
- Chapter 13, Traffic & Transportation; and
- Chapter 15, Waste Management.

This chapter assesses ownership and access, built services and infrastructure, which have not already been addressed elsewhere in this EIA Report

Land Use and Property, and Access

The majority of the proposed development site is under third party ownership, the applicant has an options agreement between the existing landowners for future purchase of the site. A right of way exists at the secondary entrance that is to be established from the Huntstown Quarry entrance road. Letters of consent, to apply for development on the lands from the site owners are included with the planning documentation.

In advance of work starting on site, the works contractor will prepare a detailed Construction Environmental Management Plan (CEMP) to manage potential nuisance impacts on nearby residential receptors. The potential impact associated with land use and property for the construction phase will be **localised, negative, not significant** and **short term**.

It is proposed that the new development will be accessed via a newly developed entrance from the R135, this will be the main entrance also serving pedestrian and cyclists. A Secondary entrance is to be established via a right-of-way from the Huntstown Quarry entrance road that will also serve the lands reserved for the future substation development.

The site is zoned 'HI – Heavy Industry', the presence of a generally low impact activity would remove uncertainty in the minds of landowners with regard to the potential of a more onerous developments on the site in the future.

Power and Electrical Supply

The lands are traversed by 110kV and 38kV overhead lines. An application to divert these lines has been made by TLI Group as discussed in Chapter 2 (Description of Development). The site is strategically located directly to the east of the existing Huntstown Power Station, and the existing Finglas 220 / 110 kV substation is located to the south.

During construction, contractors will require power for onsite accommodation, and construction equipment / plant. The potential impact associated with power and electrical supply for the construction phase will be a **neutral, imperceptible** and **short term**.

During the operational phase the data halls IT hardware require a consistent electrical supply to operate. Once completed is anticipated to require 150MW to operate. In the event of a loss of power to the site diesel-powered back-up generators will be activated to provide power pending restoration of mains power.

It has been confirmed by EirGrid through the Transmission Connection Agreement that there is sufficient power available from the existing area network to facilitate the Proposed Development. EirGrid as the national authority for the grid has the requirement to ensure that the connection will not impact or reduce the capacity available within the local network to support the neighbouring area. If there was a potential impact or inadequate capacity this would have been confirmed to the developer during consultation.

The future 220 kV electrical substation and the underground cable connections to the adjacent ESB substation will be designed to support power demand for the full development of the Proposed development of the site and will ultimately be owned and operated by ESB Networks.

There is a potential impact on material assets during the operational phase of the proposed development is **neutral, slight** and **long term**.

Surface Water Infrastructure

The site is currently agricultural land, and stormwater currently discharges through a series of land drains into the onsite ditches and flows northwards towards the Huntstown Stream, and the Ward River. There is no existing public surface water infrastructure available on the site.

During construction run-off into excavations/earthworks cannot be prevented entirely and is largely a function of prevailing weather conditions. Any discharge water will be treated using a silt-buster or similar to removed suspended solids prior to discharge. With appropriate and standard mitigation in place, as outlined in the CEMP, the potential impact on surface water for the construction phase is **neutral imperceptible**, and **short term**.

The proposed development will capture rainwater runoff from building roofs, yards and the internal road network and divert into the newly constructed gravity stormwater drainage network. The surface water network has been designed following the Greater Dublin Strategic Drainage Strategy (GSDSDS) guidelines. The design measures will ensure that the development does not contribute to flooding on neighbouring properties.

In addition to the management of rainwater runoff; in order to facilitate the proposed development includes infilling existing land drain along the western side of the site and replacing with a pipe. This existing land drain flows south to north and is proposed to be replaced with a new 900mm \varnothing pipe. This replacement pipe has been designed in accordance with OPW Guidelines that requires pipes to be capable of passing a fluvial flood flow with a 1% annual exceedance probability (AEP) or 1 in 100 year flow without significantly changing the hydraulic characteristics of the watercourse.

Foul Drainage

There is an existing 225mm \varnothing foul sewer located in the R135 Regional Road to the north-east of the site.

Welfare facilities will be provided for the contractors via portable sanitary facilities within the construction compound site during the construction works.

The effluent from the proposed development will comprise domestic sanitary waste and cooling water discharge. Domestic effluent arising from occupation of the buildings, and cooling water discharge from the data hall cooling systems will be collected in a newly constructed foul drainage network and directed to an on-site pumping station. Irish Water have confirmed through consultation that the connection to the mains is feasible without infrastructure upgrade works. The foul drainage network ultimately discharges to Ringsend WWTP.

Potable Water Supply

There is an existing 150mm \varnothing water main located in the R135 Regional Road to the east of the site.

The proposed development shall have a requirement for water to cater for the potable demand (for drinking and sanitary facilities) as well as the water demand for the cooling system for the data hall air handling units (AHUs). The Average Day/Peak Week Demand for domestic use is 0.17 l/s with a peak water demand of 0.85 l/s. The potential impact on potable water infrastructure for the construction phase is **neutral, imperceptible, and short term.**

The process water supply demand for the proposed development when temporary evaporative cooling is required has been estimated to have a peak demand of 48 l/s. The evaporative cooling is only required during unusual high temperature periods (temperatures typically greater than 23 degrees Celsius ($^{\circ}\text{C}$)) and the vast majority of this water is consumed in the cooling process, cooling water that is not evaporated is collected and treated for reuse in the cooling system. When the ambient temperature is below 23 $^{\circ}\text{C}$ the process water usage will be 0 l/s. The system requires a portion of this water c. 25% to be drained to foul sewer.

Irish water have confirmed through consultation that there is available supply within the network and that the connection is feasible subject to additional off site upgrade works. Irish Water is the National Authority for water management and should there have been an inadequate supply this would have been confirmed to the developer during consultation. Thus, the potential impact on potable water infrastructure for the operational phase is **neutral, imperceptible, and long term.**

The extent of the required off site upgrade works include the upgrade of approx 1500m of new 450mm diameter main, and the upgrade of pumps at Ballycoolen Highlands Tower. These works located in public domain and will be undertaken by Irish Water,

thus there is no requirement for third-party consent to undertake such works. The applicant intends to engage with Irish Water regarding funding a portion of these upgrading works at connection application stage. It is proposed to connect a new 250mm \varnothing watermain to the proposed 450mm \varnothing water main in the R135. These works are detailed further in the Engineering Planning Report – Drainage and Water Services.

Telecommunications

Telecommunications including fibre required during the construction phase will be provided via a mobile connection or temporary connection to the nearby telephone network.

There are telecommunication lines in existence for telephone and broadband services in the area. A fibre optic cable distribution network will be installed with a separate incoming fibre infrastructure and provided to each building via underground fibre ducts. There are existing underground carrier ducts adjacent to the site that will be utilised for the development. The connection into the wider telecommunications network will be undertaken by a statutory telecommunications operator.

The installation of a new fibre optic cable network on the site will be carried out in accordance with best practice standards.

Residual Impacts

The works contractor will be obliged to put best practice measures to ensure that there are no interruptions to service from the existing telecommunications network, watermain, sewer and electrical grid. The predicted impact will be **neutral**, **imperceptible**, and **short term** for the construction phase.

The operator has engaged with Irish Water and EirGrid to ensure that there is sufficient capacity in the water supply network, public sewer, and electrical grid. Irish water and EirGrid have confirmed that there is adequate capacity. It is not anticipated that connections to these would have any significant offsite impact. The predicted impact will be **neutral**, **imperceptible**, and **long-term** for the operational phase.

15.0 WASTE MANAGEMENT

This chapter has been prepared to address issues associated with waste management during the construction and operational phases of the proposed development.

An assessment was carried out of the potential impacts associated with waste management during the construction and operational phases of the proposed development. The receiving environment is largely defined by FCC as the local authority responsible for setting and administering waste management activities in the area through regional and development zone-specific policies and regulations.

During the construction phase, typical construction waste materials will be generated which will be source segregated on-site into appropriate skips/containers and removed from site by suitably permitted waste contractors to authorized waste facilities. Where possible, materials should be reused on-site to minimize raw material consumption. Source segregation of waste materials will improve the re-use opportunities of recyclable materials off-site.

Excavations across the site are required for the site preparation and levelling works, to achieve foundation level and facilitate construction, along with arising from the installation of underground services. The project engineers have estimated that c. 35,616 m³ of material will require excavation for the Data Centre site, an additional excavation of c. 12,045 m³ will be required for the future substation development located within the site boundary. It is envisaged that the majority of this material will be reused on site as part of the site levelling works. This will be used as back fill and to establish the proposed landscaping berms. The estimates will be refined prior to commencement of construction. In addition to this there is a net import of suitable engineering fill up to c. 81,929 m³ Data Centre site, and c. 5,000 m³ associated with the future substation development. These estimates will be refined prior to commencement of construction. The environmental ground investigations completed on site shows no evidence of subsurface contamination encountered. There has been no evidence of residual contamination on the site to date and therefore it is anticipated that excavated soils/stones if removed will be clean/inert material suitable for re-use, recovery and/or disposal offsite.

A carefully planned approach to waste management and adherence to the site-specific Construction and Demolition Waste Management Plan during the construction phase will ensure that the effect on the environment will be **short-term, neutral** and **imperceptible**.

Dedicated areas have been allocated for storage of waste materials generated during the operational phase of the development. This waste will be generated from the building staff and will comprise of typical commercial waste types. Waste storage areas have been allocated to ensure a convenient and efficient management strategy with source segregation a priority. Waste will be collected from the waste storage areas by permitted waste contractors and removed off-site for re-use, recycling, recovery or disposal.

With mitigation in place and a high rate of reuse, recycling and recovery achieved, the predicted impact of the operational phase on the environment will be **long-term, neutral** and **imperceptible**.

16.0 CUMULATIVE IMPACTS

This chapter of the EIA Report considers the potential cumulative impacts on the environment of the Proposed development with other proposed, permitted and existing developments in the locality.

The potential cumulative impacts are assessed for each environmental aspect and the predicted impact for each aspect for each scenario is described in Chapter 16 of the EIA Report. With mitigation for each environmental aspect, it is predicted that there will be no significant, long-term cumulative effects.

17.0 INTERACTIONS – INTERRELATIONSHIPS BETWEEN THE ASPECTS

This chapter of the EIA Report addresses potential interactions and inter-relationships between the environmental factors discussed in the preceding chapters. This covers both the construction and operational phase of the proposed development.

The interactions between the environmental factors and impacts discussed in this EIA Report have been assessed and the majority of interactions are neutral.

During operation the noise impact will be greater than in the current agricultural environment although it will not at risk of impact on human health. The proposed development will create significant temporary direct and indirect employment This will have a positive benefit on the economic development for the area in which the development is located.

There are no significant negative impacts are predicted from the interactions of the constituent elements of the proposed development when viewed in the light of their associated mitigation measures.