Planning & Development Act, 2000 - 2020,
European Communities (Environmental Impact Assessment) Regulations 1989 (as amended), Planning & Development Regulations, 2001 (as amended)

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

NON-TECHNICAL SUMMARY

110kV transmission lines between permitted Coolderrig substation and the Grange Castle – Kilmahud Circuits, Grange Castle

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PLANNING CONSULTANCY

NON-TECHNICAL SUMMARY

1.1 This Non-Technical Summary of the Environmental Impact Assessment Report (EIA Report) has been prepared on behalf of Edgeconnex Ireland Ltd. to accompany a Strategic Infrastructure Development application to An Bord Pleanála (ABP) for permission for two no. 110kV transmission lines from the permitted, and under construction, 110kV GIS Substation compound to the Grange Castle – Kilmahud Circuits c. 559m and 574m to the east within the townland of Grange, Dublin 22.

1.2 The permitted and under construction Coolderrig substation, 2 no. transformer bays, Client Control Building, associated compounds and site infrastructure are located within the Edgeconnex site to the immediate west of Grange Castle Business Park and were permitted under SDCC Reg. Ref. SD18A/0298.

1.3 The proposed development primarily comprises the provision of two no. 110kV transmission lines along with associated and ancillary works. The proposed transmission lines will connect the permitted and under construction Coolderrig 110kV Gas Insulated Switchgear (GIS) substation compound that was granted permission under SDCC Reg. Ref. SD18A/0298 with the existing Grange Castle – Kilmahud Circuits. The site of the proposed development has an area of c. 1.49 hectares.

1.4 The two proposed underground single circuit 110kV transmission lines will connect the permitted Coolderrig 110kV GIS Substation, within the existing Edgeconnex landholding, to the existing Grange Castle - Kilmahud Circuits to the east. The proposed transmission lines cover a distance of approximately 559m and 574m within the townland of Grange, Dublin 22. The route of the transmission lines will pass along and under the internal road infrastructure within the Edgeconnex site and Grange Castle Business Park; above the culverted Griffeen River and along a wayleave to the north of the Griffeen River to the joint bays where it will connect into the Grange Castle – Kilmahud Circuits.

1.5 The development includes the connections to the permitted Coolderrig substation as well as to the Grange Castle – Kilmahud Circuits, as well as changes to the landscaping within the Grange Castle Business Park and all associated construction and ancillary works.

1.6 The permitted and under construction Coolderrig 110kV Gas Insulated Switchgear (GIS) substation includes a two storey GIS Substation building (with a gross floor area of 556sqm) (known as the Coolderrig Substation), associated underground services; 2 no. transformers and single storey MV switch room (180sqm) within a 2.6m high fenced compound, and all associated construction and ancillary works.

1.7 For detailed information and key mitigation and remedial measures please consult the full EIA Report document. Having regard to Article 3 of the 2014 EIA Directive, and the Circular Letter PL 1/2017 of the Department of Housing, Planning, Community and Local Government, this document has been titled an Environmental Impact Assessment Report (EIA Report).

Purpose of the EIA Report

1.8 The objective of this EIA Report is to identify and predict the likely environmental impacts of the Proposed Development; to describe the means and extent by which they can be reduced or ameliorated; to interpret and communicate information about the likely impacts; and to provide an input into the decision making and planning process. The EIA Report is the primary element of the Environmental Impact Assessment (EIA) process and is recognised as a key mechanism in promoting sustainable development, identifying environmental issues, and in ensuring that such issues are properly addressed within the capacity of the planning system.

1.9 EirGrid will be the transmission system operator (TSO). ESB Networks will be the transmission asset owner (TAO). Figure 1.1 presents a site layout plan showing the route of the proposed underground transmission lines and the permitted and under construction GIS substation.

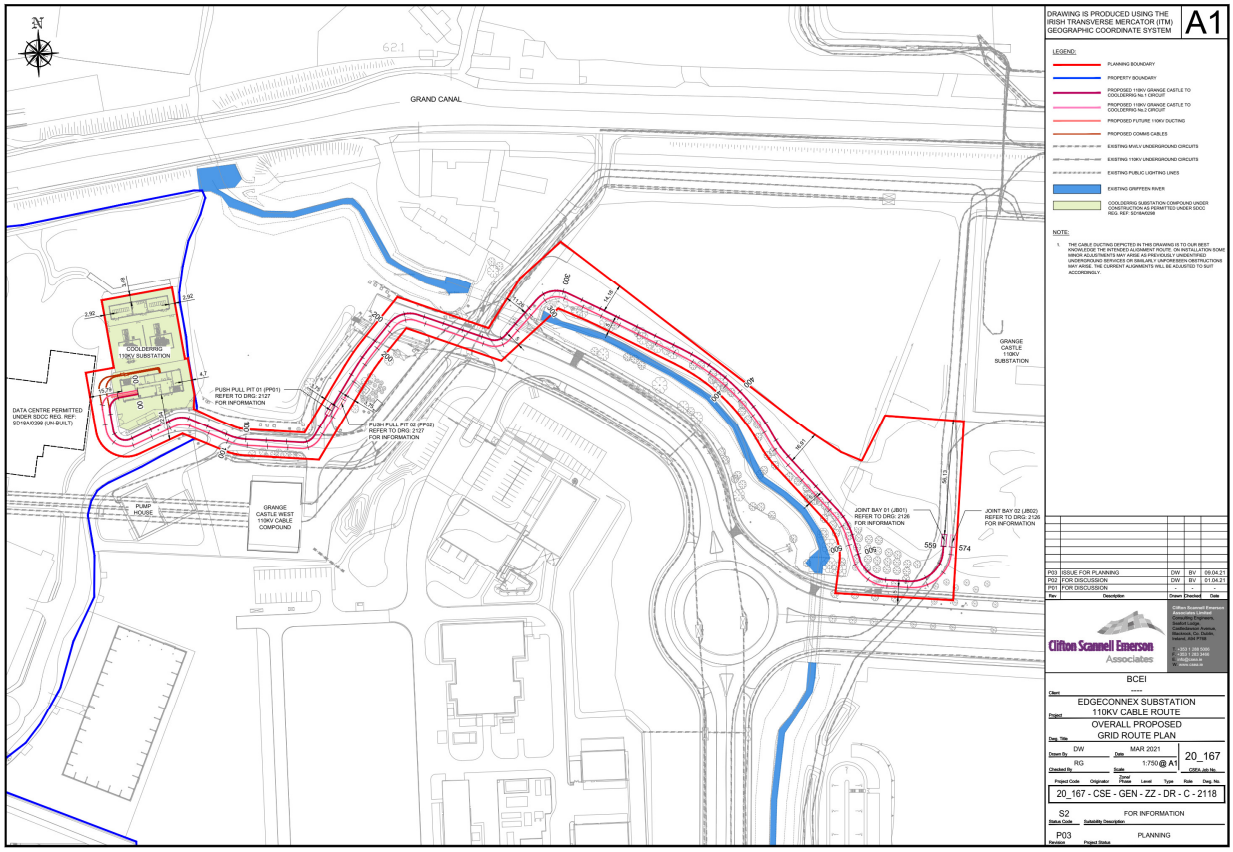

Figure 1.1 Proposed site layout plan of the Proposed Development site (red line) indicating proposed 110kV transmission lines (purple and pink lines) as well as the permitted development (shaded green) *(Source: Drawing no. 20_167-CSE-GEN-ZZ- DR-C-2118, CSEA Consulting Engineers)*

Requirements for an EIA Report

1.10 The EIA Directives list those projects for which an EIA is mandatory (Annex I) and those projects for which an EIA may be required (Annex II). With regard to Annex II projects, Member States can choose to apply thresholds or use case by case examination or a combination of both to assess where EIA is required. In Ireland, a combination of both has been applied. The Proposed Development is not listed under Annex I EIA Directives. An EIA Report has been provided as the Proposed Development is required to provide the permanent power supply for the Permitted Development of the data centres granted on the Edgeconnex site under SDCC Reg. Ref. SD16A/0214; Reg. Ref. SD16A/0345; SD17A/0141; SD17A/0392; and SD18A/0298 that included an EIA Report to accompany each planning application.

1.11 This EIA Report has been prepared in accordance with the requirements of the 2014 EIA Directive (2014/52/EU) and the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018. It is prepared in the Grouped Format Structure as set down in the Environmental Protection Agency (EPA) Draft "*Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*" (2017). In general, the EIA Report follows the framework presented in the EPA Draft "*Advice Notes for Preparing Environmental Impact Statements*" (2015)

Permitted Development

1.12 The applicant, Edgeconnex Ireland Ltd. is the same as under the various permitted developments on the Edgeconnex campus. A number of permissions cover their campus. The data centres permitted under SDCC Reg. Ref. SD16A/0214 and SDCC Reg. Ref. SD16A/0345 have been built and are in operation at the southern end of the site. The data centre permitted under SDCC Reg. Ref. SD17A/0141 and amended under SDCC Reg. Ref. SD17A/0392 is partially built at the western edge of the campus.

1.13 The permission granted under SDCC Reg. Ref. SD16A/0345 as well as granting a data centre also permitted the existing temporary gas powered generation plant that sits to the immediate east of their campus on lands owned by Takeda. The temporary gas powered generation plant has been built and has been in operation for a number of years and provides power to the two existing data centres so that they can operate. This permission received its Final Grant of permission on the 10th January 2017. Condition no. 3 of SDCC Reg. Ref. SD16A/0345 stated that the use of the temporary gas generation plant was permitted for a period of three years only. A further two years extension to this permission was granted under SDCC Reg. Ref. SD19A/0342 on the 4th February 2020. The Proposed Development will facilitate the decommissioning of this temporary gas powered generation plant.

1.14 A further permission was granted under SDCC Reg. Ref. SD18A/0298 for the full build out of the campus that included two further data centres and the substation that forms part of the Proposed Development site under this application.

The Operator

1.15 Eirgrid will be the transmission system operator (TSO) and ESB Networks will be the transmission asset owner (TAO). EirGrid will operate transmission stations, including the proposed new GIS substation, remotely from their control centres. However, ESB Networks will carry out all local operations on Eirgrid's behalf.

Consultation

1.16 The Applicant and the project team have liaised with An Bord Pleanála (ABP) in advance of lodgment of the application for the Proposed Development that included a remote meeting held on the 11th January 2021 (Ref. PL06S.308655). This meeting was to confirm the Proposed Development was an SID application and to discuss the scope of the planning application. Subsequent to that meeting, documentation showing route options for the grid were forwarded to the Board on the 16th January 2021. Previously consultation meetings were held with South Dublin County Council as part of the application for the various data centre developments on the Edgeconnex site.

1.17 In addition, the relevant specialists and project engineers (CSEA) have liaised directly and independently with statutory bodies (including the Water Services and Parks Departments of SDCC, Irish Water, Eirgrid, ESB, National Parks & Wildlife Services, etc.) by correspondence during the course of the EIA Report preparation. All EIA contributors/authors have incorporated advice and comments received from consultees into the relevant chapters of this EIA Report.

Regulatory control

1.18 The proposed transmission of electricity is not an EPA regulated activity in terms of the Industrial Emissions Directive (Directive 2010/75/EU) (which replaced the IPPC directive). The TSO and TAO will ensure the relevant regulatory requirements relating to power activities are met.

Contributors to the EIA Report

1.19 The preparation and co-ordination of the EIA Report has been completed by Marston Planning Consultancy Ltd. in conjunction with specialist subcontractors. The role and responsibility of each contributor, their qualifications and relevant experience are detailed in Chapter 1 (Introduction) of the EIA Report.

2. DESCRIPTION OF THE PROPOSED DEVELOPMENT

2.1 The Proposed Development is to be located on a site of c. 1.49ha. that consists of two parts. Firstly, the Coolderrig substation compound is located at the north-east corner within an under construction data centre campus of the applicant (Edgeconnex Ireland Ltd.). Their landholding and campus is bound by the Grand Canal and planting, including a road bridge (recently upgraded as part of the R120 scheme) to the north; the Takeda facility, sub-station, internal access roads and by undeveloped parts of the Grange Castle Business Park to the east; and a Microsoft data centre facility to the south. The campus is bounded by the R120 Newcastle Road and properties bounding this road to the west.

2.2 The second part of the Proposed Development site consists of a linear route from the under construction and permitted substation compound through the north-east corner of the Edgeconnex campus and under roads and lands within the Grange Castle Business Park.

2.3 The permitted and under construction 110kV GIS Substation Compound and short length of the transmission lines are located on land within the ownership of the Applicant. The majority of the transmission lines are on lands that are in the control or ownership of SDCC.

2.4 The Proposed Development will consist of:

- The proposed development primarily comprises the provision of two no. 110kV transmission lines along with associated and ancillary works. The proposed transmission lines will connect the permitted and under construction Coolderrig 110kV Gas Insulated Switchgear (GIS) substation compound that was granted permission under SDCC Reg. Ref. SD18A/0298 with the existing Grange Castle – Kilmahud Circuits. The site of the proposed development has an area of c. 1.49 hectares.

- The two proposed underground single circuit 110kV transmission lines will connect the permitted Coolderrig 110kV GIS Substation, within the existing Edgeconnex landholding, to the existing Grange Castle - Kilmahud Circuits to the east. The proposed transmission lines cover a distance of approximately 559m and 574m within the townland of Grange, Dublin 22. The route of the transmission lines will pass along and under the internal road infrastructure within the Edgeconnex site and Grange Castle Business Park; above the culverted Griffeen River and along a wayleave to the north of the Griffeen River to the joint bays where it will connect into the Grange Castle – Kilmahud Circuits.

- The development includes the connections to the permitted Coolderrig substation as well as to the Grange Castle – Kilmahud Circuits, as well as changes to the landscaping within the Grange Castle Business Park and all associated construction and ancillary works.

- The permitted and under construction Coolderrig 110kV Gas Insulated Switchgear (GIS) substation includes a two storey GIS Substation building (with a gross floor area of 556sqm) (known as the Coolderrig Substation), associated underground services; 2 no. transformers and single storey MV switch room (180sqm) within a 2.6m high fenced compound, and all associated construction and ancillary works.

110kV transmission line to the Grange Castle - Kilmahud Circuit

2.5 The route of the underground 110kV transmission lines to the Grange Castle – Kilmahud Circuits passes from the under construction substation compound within the Edgeconnex campus along the permitted internal access of their site for 70-80m. It then passes along under the internal road and bus terminus within the Grange Castle Business Park for c. 200m to a point just south of the Griffeen River. A Push-Pull pit is proposed c. 150m along each transmission line to enable cabling to be pulled through the ducting given the length of the route from the joint bays at the Grange Castle – Kilmahud Circuits.

2.6 The route of the of the underground 110kV transmission lines will pass over the culverted Griffeen River before passing along an existing wayleave parallel and to the north of the open Griffeen River before each transmission line ties in with the Grange Castle – Kilmahud Circuits. The length of the

110kV cable routes is c. 559m and 574m. A proposed joint bay is to be installed at the connection to the Grange Castle - Kilmahud circuit.

2.7 The Proposed Development is not located directly adjacent to any areas of national or local environmental sensitivity/designation (Refer to Chapter 6 - Biodiversity for further details). The proposed Grand Canal NHA is located to the immediate north of the transmission lines.

2.8 The design of each underground 110kV transmission line will comprise a single 110kV circuit installed underground in high-density polyethylene (HDPE) ducting. The 110kV cables will be a standard XLPE (cross-linked polyethylene) copper cable. XLPE does not contain oil, therefore there is no risk of migration of oil into the ground in the event of a failure (such as a short circuit, a joint fail, a termination failure etc.). These types of failures would not have the potential to result in a perceptible environmental impact.

2.9 Site investigation works have been undertaken by Site Investigations Ltd. on the instruction of the Project Engineers, along the route, and is included in full within Chapter 7 of the Appendix document of this EIA Report. The findings of these investigations informed the route selection for the transmission lines.

2.10 The installation of the HDPE ducting will require the excavation of one trench along each of the routes; each containing one 110kV circuit. The optimum depth of excavation of the trenches will typically be 1.25m below ground level but may increase at utility crossings. A wider shallow trench will be creates at surface (generally 0.3m depth to remove topsoil etc.. The typical width of each individual trench is 0.6m, however this may vary depending on ground conditions and the location of existing services. Five separate ducts will be installed in each trench.

2.11 The entire length of the transmission lines will be undertaken by excavator and hand digging, where required, in accordance with safe work procedures and HSA Code of Practice for Avoiding Danger from Underground Services. Trenches will be excavated with stable sloping, benching where required and a suitable access and egress point. A suitable pump will be available on site and installed if groundwater is encountered to ensure trench stability and worker safety. Particular attention will be provided to the outlined requirements while working on the existing stream culvert crossing as well as in close proximity to the existing stream.

2.12 The ducting, bedding, surrounding fill material, warning marker boards and tape will be installed as per design in accordance with ESB specification while maintain safe clearance from existing utilities. Chambers and sandpits to be installed as per design in accordance with ESB specifications. Trenches will be backfilled with suitable material and surface finishes will be returned to original state.

2.13 The route of the transmission lines pass over the culverted Griffeen River within two trenches. This may require additional exploratory works to be carried out to assess existing utilities and/or culverted structure. There may be a requirement to excavate and hand dig below existing utilities at certain points to the required depth along the lines. This will involve reinstating backfill, and surrounding material to specified requirements to ensure underside of utilities are fully supported for load bearing purposes on completion.

2.14 The transmission lines pass along and parallel to the Griffeen River for c. 200m along its route and will require excavation along this part of the route. This creates the potential for sediment and/or nutrient run-off, especially if soil is stored in an unconsolidated state for a period of time. Suspended solids or nutrients resulting from the decomposition of organic material could potentially enter the adjacent Griffeen River and other drainage features. It is considered unlikely that this would happen to a significant degree given the presence of dense riparian vegetation along the existing watercourse.

2.15 The methodology for the construction of this length of the route will include a range of other mitigation measures designed to further reduce impact on the river that includes that excavation and infilling will be carried out in small progressive stages. Any topsoil that is of use for landscaping will be stored on the site. Where this is required during the construction phase, it will be stored suitably far away from the Griffeen River and covered to avoid excessive sediment run-off or wind blow.

2.16 Whilst no significant run off of silt laden run off is anticipated, given the proposed construction methodology, the site will be regularly monitored by construction staff for signs of run-off such as silt in surrounding vegetation and measures will be put in place to prevent this where necessary. This may include the erection of a silt fence. A silt fence may be constructed by attaching a sheet of geotextile membrane to a stock fence and burying the bottom of it into the ground, thus allowing water to pass through but not the heavier fraction of the sediment.

2.17 Excavations will be carried out using a suitably sized excavator and always from the northern bank of the River. Any excavated soil that is not re-used will be disposed of to a Local Authority approved waste disposal facility. In all circumstances, excavation depths and volumes will be minimised and excavated material will be re-used where possible.

Joint bays and pulling pits

2.18 The proposed Development will link in to the Grange Castle – Kilmahud Circuits via the construction of two joint bays with associated communication chambers. The jointing bays will be c. 6m x 2.5m in plan and c. 2.5m to the underside of the base. These are located at the far eastern end of the Proposed Development site. It is proposed to construct two no. push-pull chambers to the west of the crossing of the Griffeen River. The push-pull chambers will be c. 6m x 2.5m in plan and c. 2.5m to the underside of the base. These are required for the purpose of laying cables within the ducting given the length of the route.

Permitted and under construction 110kV Substation

2.19 The permitted and under construction Coolderrig 110kV GIS substation is located in the north-east part of the overall Edgeconnex campus. The substation received a Final Grant of permission on the 27th November 2018. The permission was subject to 25 conditions. The permitted substation includes a two storey GIS Substation building (with a gross floor area of 556sqm) (known as the Coolderrig Substation), associated underground services; 2 no. transformers and single storey MV switch room (180sqm) within a 2.6m high fenced compound. The substation is due to be completed in the summer of 2021. A full description of the permitted development and the overall Edgeconnex campus is outlined in Chapter 3 of this EIAR.

2.20 A summary of the proposed target dates (earliest possible dates) for the Proposed Development are as follows:

- Application for Planning Permission – Q2 2021;
- Commence Site Construction works (subject to grant of planning permission) – Q1 2022; and
- Completion of Construction and Commissioning – Q2 2022.

Phases of the Proposed Development

2.21 Under the *EPA Draft EIA Report Guidelines 2017*, the description of the each of the phases of the Proposed Development is required in order to define the aspects of the lifecycle of the Proposed Development under the following headings:

- Construction;
- Commissioning;
- Operation;
- Decommissioning; and
- Description of other related projects.

2.22 The following sections present a description of each of these aspects.

Construction

2.23 It is estimated that the civil and commissioning works will take approximately 2 months. In general, the impact of the construction period would be temporary in nature. In general, the civil works element of work will require between 5 - 10 (average) and 12 (peak) staff. It is proposed that the same access and haul roads for vehicles will be utilised as for all development on the main site. A small off-site contractor's compound will be set-up to the west of the joint bays at the connection to

the Grange Castle – Kilmahud Circuits. This hard standing area and hard standing access road from its north-west has been utilised as an access and compound area for previous projects within the Business Park.

2.24 The construction compound will facilitate office, portable sanitary facilities, equipment storage, parking etc. for contractors. It will be used for the duration of the works.

2.25 Contractors will be required to submit and adhere to a method statement and a Construction Environmental Management Plan (CEMP). The primary potential effects from construction are temporary effects (less than one year) and are anticipated to include:

- Potential effects in terms of nuisances relating to the air quality of the environs due to dust and other particulate matter generated from excavation works and effects on the noise environment due to plant and equipment involved in construction;
- Potential effects on the land, soils, geology & hydrogeology of the site during construction i.e. some loss of protection of the underlying aquifer to contaminants during site clearance, levelling and excavations etc.; and
- Potential effects on the local road network and its environs due to construction workers and other staff attending site during preparation, construction and commissioning phases.

2.26 Each chapter of the EIA Report assesses the potential impact of the construction and operation of the Proposed Development on the receiving environment and summaries of the impacts and effects are detailed below.

2.27 A Schedule of Mitigation measures to be implemented as part of the Proposed Development has been included as part of the EIA Report (Appendix 2.3).

Commissioning

2.28 Once the construction of the Proposed Development is completed, ESB Networks will be mobilised to complete the commissioning. It will be carried out over a period of months. Commissioning works primarily involve a suitably qualified individual connecting the relevant cables to a switchgear within the substations. Following this, energisation can take place. As there is no requirement for chemicals usage and minimal access to the route by personnel there is no likely environmental effect as a result of commissioning.

Operation

2.29 EirGrid will be the transmission system operator (TSO) and ESB Networks will be the transmission asset owner (TAO). EirGrid will operate transmission stations, including the proposed new GIS substation, remotely from their control centres. However, ESB Networks will carry out all local operations on Eirgrid's behalf. ESB Networks will undertake local operational activities from the substations with only interim inspections along the underground transmission lines.

2.30 There are no full-time staff required for operation of the underground transmission lines. Once constructed, they will not require any staff to operate it. Instead, two ESB Networks maintenance staff will carry out a routine inspection of the asset one year after completion and once every three years thereafter.

2.31 Once constructed, the joint bays will not require any staff to operate them. Instead, ESB Networks maintenance staff will inspect these bays as part of their existing overall maintenance operations at the permitted substation. Therefore, no additional staff (above existing requirements) will be required to maintain the joint bays and thus, there will be no additional trips generated by this element of the Proposed Development.

2.32 Whilst not forming part of the proposed development the permitted substation will become operational as a result of the proposal. The 110kV GIS substation does not require any full-time staff to operate it. However, maintenance of the substation will be required by ESB Networks, including a routine weekly inspection, and a more comprehensive inspection once per year. The weekly

inspection of the GIS substation will take a maximum of 8 hours on a single day and will be conducted by up to 2 staff.

2.33 In addition to the weekly inspections, more comprehensive maintenance works will take place annually on each cubicle. This will require up to 4 staff to conduct testing at the substation over a maximum period of 15 days (120 hours). It is expected that the proposed 3 new transformers (to be located south of the 110kV GIS substation) will also be inspected during this time. Traffic relating to staff movements have been assessed as part of the traffic and transportation chapter of this EIA Report (Chapter 12).

Decommissioning

2.34 The lifespan of the Proposed Development is not defined but it is anticipated that it will be maintained, and periodic upgrading undertaken over a long lifetime to meet future demand and upgrade in technology. If the permitted GIS substation is no longer required over the long term, then full decommissioning in accordance with prevailing best practice will be undertaken.

2.35 Retirement of any cables will involve decoupling the cable from the switchgear. An excavation pit of approximately 10sqm will then be established. The cable to be retired will be identified within this excavation pit and spiked (to ensure that decoupling from the switchgear has been successful and the cable is not live). The cable will then be cut and capped to protect the exposed cable. The excavated pit can be reinstated using the excavated material with no import of fill required for this part of the Proposed Development. The retired cable can remain in situ in the ground, with the potential for it to be returned to operation should it be required in the future.

2.36 The decommissioning and/or removal of the cable is ultimately a matter for the ESB/EirGrid in their function as TAO/TSO and does not form part of the Proposed Development.

Description of other developments

2.37 A list of the other permitted developments in the vicinity of the Proposed Development is provided in Chapter 3 (Planning and Development Context) of this EIA Report.

Sustainability energy efficiency & resource use

2.38 Eirgrid and ESB Networks are committed to running their businesses in the most environmentally friendly way possible. ESB Networks is a subsidiary within ESB Group. The ESB Group has identified energy efficiency as a strategic priority within its Brighter Future strategy. ESB Group is a commercial semi-state-owned company (95% state-owned) and is committed to supporting and being exemplar in the delivery of Ireland's 2020 public sector targets. These targets, outlined in the fourth National Energy Efficiency Action Plan (2017 – 2020) (NEEAP), include an energy efficiency target of 33% for the public sector.

Major accidents / disasters

2.39 The 2014 EIA Directive and associated EPA Draft EIA Report Guidelines 2017 requires that the vulnerability of the project to major accidents, and/or natural disasters (such as earthquakes, landslides, flooding, sea level rise etc.) is considered in the EIA Report. The site has been assessed in relation to the following external natural disasters; landslides, seismic activity and volcanic activity and sea level rise/flooding as outlined below. The potential for major accidents to occur at the Proposed Development has also been considered with reference to Seveso/COMAH.

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

2.41 The Proposed Development will not be a Seveso/COMAH facility. No substance will be stored on site that forms the proposal that is controlled under Seveso/COMAH.

2.42 The potential risk of flooding on the site was also assessed. A Stage 1 Flood Risk Assessment was carried out and it was concluded that the development is not at risk of flooding. The assessment indicates that the Proposed Development would not adversely impact on the flood risk for other neighbouring properties.

3. PLANNING AND DEVELOPMENT CONTEXT

3.1 Following consultation with An Bord Pleanála (ABP) it was confirmed that the Proposed Development meets the relevant criteria and constitutes a Strategic Infrastructure Development (SID) under Section 182A & 182B of the Planning and Development Act 2000 (as amended).

3.2 The site for the Proposed Development is within the functional area of South Dublin County Council (SDCC), and therefore the Planning and Development Framework with which the development complies is defined by the South Dublin County Development Plan 2016-2022. The Proposed Development is to be located within an area zoned EE (Enterprise and Employment) under the County Development Plan with the stated aim:

"*To provide for enterprise and employment related uses.*"

3.3 The proposed development is designed to support the power demand for the permitted data centres as permitted and built under SDCC Reg. Ref. SD16A/0214 and Reg. Ref. SD16A/0345. It will also allow the completion and operation of the data centre permitted under SDCC Reg. Ref. SD17A/0141 / SD17A/0392; and the construction and operation of the data centres permitted under SDCC Reg. Ref. SD18A/0298. The Proposed Development will also allow the decommissioning of the temporary Power Plant that was originally permitted under SDCC Reg. Ref. SD16A/0345 and was subsequently extended under SDCC Reg. Ref. SD19A/0342. The permitted and under construction 110kV GIS substation compound is located within the north-east part of the overall landholding of the Applicant.

3.4 As part of the assessment of the impact of the Proposed Development, account has been taken of developments that are currently permitted or under construction within the immediate environs of the site and proposed route for the transmission lines. The SDCC Planning Department website was consulted, and permissions granted within the previous five years (since March 2016) were examined.

3.5 The Proposed Development will be in keeping with all of the aspects of the relevant policy documents (as set out in Chapter 3) and SDCC's stated policies and objectives to conserve, protect and enhance the environmental resources and assets of the region will not be contravened by the Proposed Development as described in the relevant chapters within the EIA Report.

4. ALTERNATIVES

4.1 EIA legislation and the prevailing EPA Draft Guidelines as set out in Chapter 1 of this EIA Report and best practice require that EIA Reports consider 'reasonable alternatives', for projects with regard to their environmental effects addressing:

- Do Nothing Alternative;
- Alternative project locations;
- Alternative designs/layouts;
- Alternative processes;
- Alternative technologies; and
- Alternative mitigation measures.

Do Nothing Alternative

4.2 In the event that the Proposed Development does not proceed, the permitted data centres as granted under SDCC Reg. Ref. SD17A/0141 / SD17A/0392; and under SDCC Reg. Ref. SD18A/0298 would not be completed or built. The data centres built and in operation under SDCC Reg. Ref. SD16A/0214 and Reg. Ref. SD16A/0345 would be left without a permanent power supply.

4.3 The permanent power supply is designed to provide the full power requirement of the various permitted developments. Without the permanent power supply that the Proposed Development will

provide, the rest of the Edgeconnex campus will remain undeveloped with the potential that the currently operating data centres may not be able to operate after the 4th February 2022.

4.4 The land on which the Proposed Development would be located, would remain undeveloped outside of the campus; and the road and existing planning to the north of the Griffeen River would remain and would reach maturity. The undeveloped land with the Edgeconnex campus would likely recolonise as scrub following the completion of the currently under construction substation.

Alternative project locations

110kV Transmission Line Routes

4.5 The assessment of the alternative routes for the 110kV transmission lines considered various route options for the 110kV transmission line to the Grange Castle-Kilmahud Circuits. These included various routes and connection points relating to the Grange Castle-Kilmahud Circuits Once the connection point was established by Eirgrid, the number of alternative routes was limited primarily by the need to cross the Griffeen River as well as navigating the existing utilities in the area. There was also a need to avoid crossing the land to the west of the Grange substation and north of the Griffeen River outside of designated SDCC wayleaves.

4.6 Site investigation works have been undertaken by Site Investigations Ltd. on the instruction of the Project Engineers, along the route, and is included in full within Chapter 7 of the Appendix document of this EIA Report. The findings of these investigations informed the route selection for the transmission lines.

4.7 The alternatives considered were limited to different arrangements of linking from the permitted substation to the connection point. The aim of the alternative routes were to minimise, where possible the length of construction works, and if possible to remain within the alignment of existing wayleaves, where possible. The alternatives differed significantly in terms of length due to the need to stay close to or within wayleaves along the eastern part of the route.

GIS Substation

4.8 The location of the proposed GIS substation compound was identified as part of the Permitted Development as granted under SDCC Planning Reg. Ref. SD18A/0298. As the substation does not form part of the Proposed Development under this SID application no alternative layouts were considered.

Alternative design / Layouts

4.9 Alternative design options for the 110kV transmission cables did not consider the provision of overhead lines. By their very nature, overhead lines require corridors to run along and alignments that must be clear of all other development. In the case of both a significantly wide corridor would be required. This would effectively sterilise the land in this corridor.

4.10 Two no. single circuit 110kV underground transmission lines were chosen above the overhead alternative as it enables more power to be transferred over a particular distance and requires less land to do so – minimising ecological and visual impacts of the Proposed Development and reducing installation costs.

Alternative processes and technologies

4.11 This section typically examines the project processes in relation to likely emissions to air and water, likely generation of waste and likely effect on traffic to determine the process that is least likely to impact on these parameters. The underground 110kV transmission lines will become an integral part of the national high voltage electricity grid which is currently operated by ESB Networks.

4.12 The underground cable installations must meet ESB Network's strict specifications to ensure it will be seamlessly absorbed into the national grid infrastructure and can provide a reliable power generation, and if required a reliable power supply. From a "*process design*" point of view, therefore,

the flexibility to select alternative processes for integrating into the current national grid is not available to the Applicant.

4.13 As appropriate, alternative processes are considered on an ongoing basis by both EirGrid and ESB Networks as a part of each of their operations based on many factors including technical feasibility, environmental impact, efficiency, security, reliability and cost. Therefore, from a "*process design*" point of view, the flexibility to select alternative processes for integrating into the current national grid is not available to the Applicant. There are no reasonable alternatives available.

Alternative mitigation

4.14 For each aspect of the environment, each specialist has considered the existing environment, likely impacts of the Proposed Development and reviewed feasible mitigation measures to identify the most suitable measures appropriate to the environmental setting of the Proposed Development. In making a decision on the most suitable mitigation measure the specialist has considered relevant guidance and legislation. In each case, a comparison of environmental effects was made, and the specialist has reviewed the possible mitigation measures available and considered the use of the mitigation in terms of the likely residual impact on the environment. The four established strategies for mitigation of effects have been considered: avoidance, prevention, reduction and offsetting (not required in this development).

4.15 Mitigation measures have also been considered based on the effect on quality, duration of impact, probability and significance of effects. The selected mitigation measures are set out in each of the EIA Report Chapters 5-16 and are summarised in Chapter 2 - Appendix 2.3.

Conclusions on Alternatives

4.16 The selected route for the 110kV transmission lines is deemed to be the most suitable for the Proposed Development from an engineering and environmental perspective as they offer the shortest construction phase and thus a shorter duration of any potential environmental impacts that might arise.

4.17 During construction the proposed 110kV routes (similar to the alternative route assessed i.e. Option 1) will have a ***temporary***, ***neutral*** and ***imperceptible*** *to* ***not significant*** environmental effect. It is noted that the proposed route and the alternative routes considered were considered to have a ***neutral, imperceptible, long-term*** environmental effect during the operational phase.

4.18 The design of the new joint and pull-pit bays have been selected with due regard to minimising the environmental and visual impact once in situ. The selection of the design has been constrained to the standard specifications required by ESB Networks for connection to the national grid. In conclusion, it is considered that the Proposed Development and design is the most suitable choice to provide the support required to meet the power requirements of the Permitted Development.

5. POPULATION AND HUMAN HEALTH

5.1 This chapter evaluated the impacts, if any, of the Proposed Development on population and human health with specific focus on Employment, Human Health and Amenity. Human health in this context is addressed through a review of expected effects on air quality and climate, noise and vibration and traffic.

5.2 There will be a temporary, imperceptible, positive effect on local business with the limited presence of a very small number of construction workers of 5-10 using local facilities during the construction phase of each cable installation. However, the main potential impacts on human beings associated with the Proposed Development will be in relation to air quality, noise and visual effects during the construction stage. The potential impacts are assessed within the corresponding chapters of this EIA Report and are summarised below. These are temporary impacts.

5.3 The main potential impacts on human beings and human health associated with the Proposed Development will be during the construction stage. Mitigation measures, such as dust management,

noise management and traffic management, will be put in place during construction of the Proposed Development which will ensure that the impact of the Proposed Development complies with all EU ambient air quality legislative limit values (see Chapter 10), which are based on the protection of human health and noise limits (see Chapter 9) meet adopted noise limit values which are based with due consideration of the effect on human health. The impact of construction of the Proposed Development is likely to be ***temporary*** and ***imperceptible*** with respect to human health.

5.4 The impact on human health due to air quality is likely to be ***temporary*** and ***imperceptible*** during the construction phase; and ***long-term, imperceptible*** and ***neutral*** in relation to the operational phase. The potential impact on human health is likely to be ***temporary*** and ***not significant*** during the construction phase; and ***long-term, not-significant*** and ***imperceptible*** in relation to the operational phase.

5.5 In terms of traffic, the predicted impact of the development on human beings and in particular road users will be ***temporary, negative*** and ***not significant*** for the construction phase and ***long-term, neutral*** and ***imperceptible*** for the operational phase. Any significant construction works will take place outside of main commuter hours and at worst case a single lane carriageway will remain operational where road works are required. Mitigation measures will be put in place, including night-time and weekend works, to minimise impacts on traffic flow during the construction phase (see Chapter 12).

5.6 Overall, it is expected that the Proposed Development will have a positive and long-term impact on the immediate hinterland through facilitating additional power supply to fuel future industrial and commercial activity which in turn results in increased employment opportunities and the associated economic and social benefits.

6. BIODIVERSITY

6.1 This chapter provides an assessment of the impacts of the Proposed Development in question on the ecological environment, i.e. flora and fauna.

6.2 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 occur under the footprint of the proposed works areas.

6.3 The assessment noted that based on the potential sources of pollution from the proposed development during construction and operation phases and distance of c.20 km downstream, there is no potential for impacts to occur on European sites in Dublin Bay.

6.4 There is no possibility of any other plans or projects acting in combination with the proposed development to undermine the conservation objectives of any of the qualifying interests or special conservation interests of Natural Heritage Areas or European sites in, or associated with, Dublin Bay as a result of water quality effects.

6.5 The proposal will not cumulatively impact the bird or bat populations, or their habitats, in conjunction with other planned or permitted developments. Considering the predicted impacts associated with the proposed development, the mitigation measures proposed to protect the local biodiversity resource and the receiving environment, and the protective policies and objectives on the land-use plans that will direct future development locally, significant cumulative negative effects on biodiversity are not predicted.

7. LAND, SOIL, GEOLOGY AND HYDROGEOLOGY

7.1 The chapter assesses and evaluate the potential impacts to land, soils, geology and hydrogeology during the construction and operational phases of the Proposed Development.

7.2 The site and local area is underlain by the Lucan formation, also called the Dinantian (Upper Impure) Limestones or 'Calp' limestone. No bedrock outcrops were encountered during the site investigations or are recorded by the GSI within the red line of the Proposed Development. According to the site investigations carried out by SIL (2021), the depth to bedrock throughout the site was confirmed as 2.5-3.4mbgl. The site investigation also confirms identification of the bedrock as strong to very strong light grey fine grained muddy Limestone.

7.3 The bedrock aquifers underlying the Proposed Development site according to the GSI National Draft Bedrock Aquifer Map are classified as Dinantian Limestones (Calp). The GSI has classified this aquifer as Locally Important.

7.4 The GSI currently classifies the aquifer vulnerability in the region of the Proposed Development as 'Extreme' (E) that indicates an overburden depth of 0-3m is present, while High vulnerability indicates an overburden depth of 3-5m is present. Site investigation confirmed that presence of limestone bedrock was found at depths that were typically in the range 2.5 to 3.4 m BGL.

7.5 The site falls generally from east to west, with topographical levels ranging from c. 67mAOD in the east to c. 61 mAOD in the north of the development boundary. Regionally, topography gently decreases to the north towards the Grand Canal pNHA (proposed National Heritage Area) and River Liffey.

7.6 Subsoil stripping and localised stockpiling of soil will be required during construction. It is estimated that approximately 1,213m^3 of soils will be excavated to facilitate construction of the Proposed Development. Suitable soils and stones will be reused on site as backfill in the grassed areas, where possible. However, it is currently envisaged that majority of the excavated material along the roadways will require removal offsite.

7.7 The implementation of mitigation measures outlined in Chapter 7, including a Construction and Environmental Management Plan (CEMP) will ensure that the predicted impacts on the geological and hydrogeological environment do not occur during the construction phase and that the residual impact will be ***temporary-imperceptible-neutral***. Following the NRA criteria for rating the magnitude and significance of impacts on the geological and hydrogeological related attributes, the magnitude of impact is considered ***negligible***.

7.8 The implementation of mitigation measures highlighted in Chapter 7 will ensure that the predicted impacts on the geological and hydrogeological environment do not occur during the operational phase and that the residual impact will be ***long-term-imperceptible-neutral.*** Following the NRA criteria for rating the magnitude and significance of impacts on the geological and hydrogeological related attributes, the magnitude of impact is considered ***negligible***.

8. HYDROLOGY

8.1 The chapter evaluates the potential impacts on the surrounding hydrological environment during the construction and operational phases of the Proposed Development. The proposed route of the two 110kV transmission cables will cross above the Griffeen River, which is culverted in this section and will pass along a wayleave to the north of the Griffeen River. There is no direct or indirect hydrological or hydrogeological connection to the Grand Canal pNHA as it is fully lined; there is an indirect hydrological pathway to nationally designated sites in Dublin Bay via the Griffeen River.

8.2 The proposed development site is within the sub-catchment of the Griffeen River which is a tributary of the River Liffey. A Stage 1 Flood Risk Assessment was completed as part of the application. This concluded that the development is located within Flood Zone "C" and therefore it does not pose a risk to flooding.

8.3 To further minimise risk to water quality, mitigation measures are planned during the construction work. These include compliance of contractors with a Construction Environmental Management Plan (CEMP) including management of silty water, management of any accidental local spills from construction vehicles and management of run-off during works

8.4 The construction of the cable route will involve excavation of a small amount of soil in close proximity to the Griffeen River. This creates the potential for sediment and/or nutrient run-off, especially if soil is stored in an unconsolidated state for a period of time. Suspended solids or nutrients resulting from the decomposition of organic material could potentially enter the adjacent Griffeen River and other drainage features. It is considered unlikely that this would happen to a significant degree given the presence of dense riparian vegetation along the existing watercourses.

8.5 Machinery activities on site during the construction phase may result in contamination of runoff/surface water. Potential impacts could arise from accidental spillage of fuels, oils, paints etc. which could impact surface water if allowed to infiltrate to runoff to surface water systems and/or receiving watercourses. However, implementation of the mitigation measures detailed below will ensure that this does not occur.

8.6 The temporary storage of soil will be carefully managed. Stockpiles will be tightly compacted to reduce runoff and graded to aid in runoff collection. This will prevent any potential negative impact on the stormwater drainage and the material will be stored away from any surface water drains. Movement of material will be minimised to reduce the degradation of soil structure and generation of dust. Excavations will remain open for as little time as possible before the placement of fill. This will help to minimise the potential for water ingress into excavations. Soil from works will be stored away from existing drainage features to remove any potential impact.

8.7 Should any discharge of construction water be required during the construction phase, discharge will be to foul sewer. Pre-treatment and silt reduction measures on site will include a combination of silt fencing, settlement measures (silt traps, 20m buffer zone between machinery and watercourses, refuelling of machinery off site) and hydrocarbon interceptors.

8.8 As such the predicted impact will be ***temporary, imperceptible*** and ***neutral*** during construction. The rating the magnitude and significance of impacts on the hydrological related attributes, the magnitude of impact is considered ***negligible***. The cumulative impact of the construction phase is considered to be ***temporary, neutral*** **and** ***imperceptible.***

8.9 The implementation of mitigation measures highlighted above will ensure that the predicted impacts on the hydrological environment do not occur during the operational phase and that the residual impact will be ***long-term-imperceptible-neutral***.

9. NOISE AND VIBRATION

9.1 This chapter assesses the anticipated noise and vibration impact associated with the Proposed Development at nearby noise sensitive locations.

9.2 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, and plant noise were noted as the most significant source of noise during both daytime and night-time periods.

9.3 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.

9.4 During the construction phase of the Proposed Development there will be some impact on nearby noise sensitive properties due to noise emissions from site traffic and other activities. The application of noise limits and 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 impacts will be ***minor, negative*** and ***temporary*** in nature.

9.5 Any change in noise levels associated with vehicles at road junctions in the vicinity of the proposed development is expected to be ***imperceptible.*** The resultant noise impact is ***neutral, imperceptible*** and ***long-term.***

10. AIR QUALITY

10.1 This chapter evaluates the impacts which the Proposed Development may have on air quality & climate.

Air Quality

10.2 In terms of the existing air quality environment, data available from similar environments indicates that levels of particulate matter less than 10 microns and particulate matter less than 2.5 microns (PM10/PM2.5) are, generally, well within the National and European Union (EU) ambient air quality standards.

10.3 An assessment of the potential dust impacts as a result of the construction phase of the Proposed Development was carried out based on the UK Institute of Air Quality Management (IAQM) guidance. This established the sensitivity of the area to impacts from construction dust in terms of dust soiling of property and human health effects.

10.4 The sensitivity of the area was combined with the dust emission magnitude for the site under three distinct categories: earthworks, construction and track out (movement of vehicles) in order to determine the mitigation measures necessary to avoid significant dust impacts.

10.5 Once mitigation measures, such as dust and traffic management, are implemented the impacts to air quality during the construction of the Proposed Development are considered, ***temporary*** and ***imperceptible***, posing no nuisance at nearby sensitive receptors (such as local residences).

Climate

10.6 Based on the scale and temporary nature of the construction works and the intermittent use of equipment, the potential impact on climate change and transboundary pollution from the proposed development is deemed to be ***temporary*** and ***imperceptible*** in relation to Ireland's obligations under the EU 2030 target.

10.7 There are no predicted impacts to air quality or climate during the operational phase of the Proposed Development. Therefore, the operational phase is considered ***short-term*** and ***imperceptible*** for both air quality and climate.

Human health

10.8 Best practice mitigation measures are proposed for the construction phase of the Proposed Development which will focus on the pro-active control of dust and other air pollutants to minimise generation of emissions at source. The mitigation measures that will be put in place during construction will ensure that the Proposed 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 ***temporary*** and ***imperceptible*** with respect to human health.

10.9 The proposed cables will be underground and will have no impact on air quality in relation to human health once operational. In addition, the proposed substation does not have the potential for any emissions which could impact air quality in terms of human health during operation.

11. LANDSCAPE AND VISUAL IMPACT

11.1 The Proposed Development is primarily situated within the western edge of the Grange Castle Business Park and the north-eastern part of the Edgeconnex campus. In the wider landscape the site is within in a generally flat area. The site is located between three landscape typologies. North of the site, and to the north of the Grand Canal, development is predominantly residential, typified by areas such as Adamstown, Grange Manor and Lucan. To the south and east of the site (to west of R136) is an area that has been developed both industrially and commercially at quite an intensive level in recent years. This landscape is characterised by very large built developments and new tree lined roads, with many developments being under construction at present.

11.2 All of the existing vegetation within the Proposed Development site is located in the eastern half of the site. Vegetation includes some water tolerant trees along the existing river bank, that include Alder, Birch and Willow. There is also a belt of tree planting to the north of the river which is characterised by semi-mature parkland and woodland tree species such as Ash, Birch, Horse Chestnut, Maple, Rowan and so on. Some block planting of Dogwood can also be found between the river and the main avenue within the Business Park.

11.3 The construction of the underground transmission lines will require trenching and stockpiling of material along its route. The temporary works required to install the cables would be similar to works that have been undertaken in this area recently. The initial construction operations associated with this will give rise to temporary impacts on the landscape character, through the introduction of new temporary structures, machinery, ancillary works etc., along with the removal of any existing vegetation, grassland or scrub.

11.4 The proposed works has the potential to result in impacts due to the removal, and subsequent reinstatement, of existing parkland and woodland trees, shrubs, riverside vegetation and grass verges.

11.5 The construction compounds, temporary car parking and storage facilities etc. will be located sensitively to avoid any local visual sensitivities. Furthermore, the Proposed Development site is located within the existing Edgeconnex campus and the Grange Castle Business Park that includes a number of recent built developments, including a large amount of similar scale cabling work, sub-stations, data centres and a range of other industrial scale developments in close proximity to the subject lands.

11.6 The Proposed Development will require a number of semi-mature parkland and woodland trees to the north of the Griffeen River and the main internal Business Park access road to be removed. Trees to be removed include Ash, Birch, Horse Chestnut, Maple, Rowan etc..

11.7 With the above considered the predicted impact on the landscape character during construction would be ***negative*** and considered ***slight*** in magnitude and ***temporary*** in its duration.

11.8 The operational phase will not give rise to any noticeable change in the landscape character. The cables will be underground and will therefore cause no impact on landscape character.

11.9 The landscape proposals as part of the proposed development include the reinstatement of a large number of trees which will be planted as semi-mature specimens at heights of 5-6m on day 1 of operations. Any shrub planting which is removed will also be compensated through the planting of the same or similar species and any roadside verges or green buffers where ground is disturbed by construction works will be re-seeded appropriately with amenity grass. The retention of a number of existing trees in this area will also retain some of the original landscape character.

11.10 The overall impact on the landscape character would therefore be considered ***neutral***, ***long-term*** and ***not significant*** due to the lack of above ground physical features associated with the cabling works and due to the proposed planting scheme which, as it matures, will compensate for the removal of the existing business park planting.

12. TRAFFIC AND TRANSPORTATION

12.1 This chapter assesses the traffic impact the Proposed Development will have on the surrounding road network during construction and operation. The main entrance into the Grange Castle Business Park is from a roundabout junction on the R136 some 930m to the east of the eastern part of the Proposed Development site. Access to the business park from this junction consists of a wide dual carriageway road, with a 1.5m cycle track and 1.5m footpath set back from the carriageway on either side. The business park is also accessed via a 9m wide single carriageway road which forms a roundabout junction with the R134 Nangor Road.

12.2 Given the ongoing Covid 19 Pandemic, it has not been possible to collect representative traffic flow data. Accordingly, an assessment of the roads network performances is done by way of historic

sources of traffic data which include nearby relevant planning applications accompanied with traffic and transport assessments.

12.3 A Traffic Impact Assessment (TIA) was undertaken to evaluate the Proposed Development's traffic implications on the road network both individually and cumulatively with other permitted development.

12.4 The impact of the construction works will be temporary in nature. The number of staff on site will fluctuate over the implementation of the proposed works. The construction phase of the project is expected to last 2 months.

12.5 There will be maximum of 40 trips related to the removal of waste. This will be spread out over the construction period averaging out at 2 trips (4 two way trips in total) over a 4 week period allocated in the overall 2-month construction period. In additional to the waste from the transmission lines, it is expected that the development will generate construction waste also. For the purpose of this assessment, it is assumed that there will be 1 trip per day (2 two-way trips in total) per day.

12.6 The development will have no operational impact on the local road networks.

12.7 All construction activities will be governed by the Construction Traffic Management Plan to be prepared by the appointed Main Contractor. This document addresses a number of potential issues including the working hours of site staff, the traffic management for the site, the waste management, noise and vibration impacts as well as other issues to be addressed.

12.8 This number of construction vehicle movements is considered to be low compared to the capacity of the wider road network. It should be noted that the majority of such vehicle movements would be undertaken outside of the traditional peak hours, and it is not considered this level of traffic would result in any road capacity problems.

12.9 The potential traffic impact associated with the operational phase of the Proposed Development will be *long-term, neutral* and *imperceptible*. The traffic impact assessment for the operational phase are significantly below the thresholds stated in the TII Guidelines for Traffic and Transport Assessments, 2014 for junction analysis. Therefore, no mitigation measures in the form of junction modifications are proposed on the public road or within the Business Park to facilitate the Proposed Development.

13. CULTURAL HERITAGE

13.1 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 Place, the South Dublin County Council Development Plan 2016-2022, the National Inventory of Architectural Heritage, the topographical files of the National Museum of Ireland, the Excavations Database, cartographic and documentary sources.

13.2 There are no recorded monuments within the immediate vicinity of the Proposed Development site. A licensed archaeo-geophysical survey of the northern half of the Edgeconnex site was undertaken by Joanna Leigh of JML Surveys in June 2016 (Licence no. 16R0070, see Figure 6, Appendix 13.5). The survey area totalled 3.9 hectares to the east of the R120 and includes the western portion of the site.

13.3 The construction phase of the proposed development will not impact directly on any sites included in the Record of Monuments and Places. Geophysical survey and testing in the western portion of the proposed site did not identified any substantive archaeological features. Significant development has already occurred across the majority of the site. Should any further sub-surface archaeological features survive in areas not already subjected to testing, monitoring or development, the ground disturbance phase of the proposed development would impact negatively on them.

13.4 The operational phase of the proposed development is not predicted to have any impact on archaeological, architectural and cultural heritage.

14. WASTE MANAGEMENT

14.1 This chapter evaluates the impacts associated with waste management during the construction and operational phases of the Proposed Development.

14.2 In terms of waste management, the receiving environment is largely defined by South Dublin County Council (SDCC) as the local authority responsible for setting and administering waste management activities in the area.

14.3 The construction and installation of the underground ducting for the two underground single circuit 110kV transmission lines, will require the excavation of made ground, topsoil, subsoil and possibly bedrock (if encountered).

14.4 It has been estimated that along the route that up to a maximum of 1,213m^3 of excavated material will be generated including tarmac, made ground, soils/stones. Suitable soils and stones will be reused on site as backfill in the grassed areas, where possible. However, it is currently envisaged that the majority of the excavated material will require removal offsite. The importation of an equivalent volume of fill material to offset the removal will be required for construction of foundations and to reinstate the trenches.

14.5 Once operational, it is anticipated that very small amount of waste will be generated at the proposed development by staff during inspections and maintenance works.`

14.6 A carefully planned approach to waste management as set out in Sections 14.52 – 14.56 and adherence to the outline C&D WMP during the construction and demolition phase will ensure that the impact on the environment will be ***temporary, neutral*** and ***imperceptible***.

14.7 During the operational phase, a structured approach to waste management will promote resource efficiency and waste minimisation. Provided the mitigation measures are implemented and a high rate of reuse, recycling and recovery is achieved, the predicted impact of the operational phase on the environment will be ***long-term, neutral*** and ***imperceptible***.

15. MATERIAL ASSETS

15.1 This chapter evaluates the impacts, if any, which the Proposed Development may have on Material Assets. The EPA Draft EIA Report Guidelines 2017 state that material assets are now taken to mean built services and infrastructure, roads and traffic as well as waste management. In this EIA Report, the impacts on some of the material assets described above have been considered in the following chapters:

- Chapter 5, Population and Human Health;
- Chapter 10, Air Quality & Climate;
- Chapter 12, Traffic & Transportation; and
- Chapter 14, Waste Management.

15.2 This chapter assesses ownership and access (including buildings and other structures), built services and infrastructure.

Ownership and access

15.3 The site of the Proposed Development as described in Chapter 2 Description of the Proposed Development is under the following ownership:

- GIS substation and Transformer / MV Building Compounds (which don't form part of the application, but are included within the red line of the application) and the first c. 80m of the two transmission lines are within the applicants ownership; and
- The rest of the 110kV transmission lines to the Grange Castle-Kilmahud circuits continues for c. 490m along and under the internal access road to their site and bus turnaround area within the Grange Castle Business Park; and then above the culverted Griffeen River and along a wayleave

to the north of the Griffeen River to the joint bays where it will connect into the Grange Castle – Kilmahud Circuits. This part of the route is in the ownership of SDCC.

15.4 A letter of consent, to apply for development on the lands has been obtained from SDCC and is included with the planning application.

15.5 As detailed in Chapter 2, the permitted GIS substation and Transformer / MV Building compound (SDCC Reg. Ref. SD18A/0298) is currently under construction and is due to be completed in early summer 2021. The main access to the GIS substation compound will be via the permitted entrance to the Edgeconnex site from the Grange Castle Business Park from the east. This access road will also serve the access for the two currently operating data centres, as well as the construction access to the partly built data centre under SDCC Reg. Ref. SD17A/0141 / SD17A/0392; as well as the two data centres permitted under SDCC Reg. Ref. SD18A/0298. There is good visibility on approach to the permitted access point from within the business park.

15.6 The implementation of mitigation measures will ensure that the predicted impacts on the material assets during the construction phase will be ***temporary, neutral*** and ***imperceptible*** for the construction phase.

15.7 The Proposed Development has been designed in accordance with the requirements of ESB Networks. Eirgrid has confirmed that there is sufficient power available from the existing area network for the Proposed Development. There are no predicted impacts associated with power and electrical supply, and telecommunications for the Proposed Development for the operational phase.

15.8 There are no predicted impact on water supply, surface water infrastructure and foul drainage infrastructure post construction.

15.9 The predicted impacts on power and electrical supply, telecommunications, surface water infrastructure, foul drainage infrastructure and water supply will be ***long-term, neutral*** and ***imperceptible.***

15.10 The overall predicted cumulative impact of the Proposed Development with other permitted developments can be classed as ***long-term*** and ***not significant*** with respect to material assets during the construction and operational phases.

16. INTERACTIONS

16.1 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.

16.2 In the main, the majority of EIA Report chapters have already included and described assessments of potential interactions between aspects however this section of the assessment presents a summary and assessment of the identified interactions. In summary, the majority of interactions are neutral.