

**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

**Peamount Substation and transmission lines
Milltown**

March 2021

MARSTON

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 Data and Power Hub Services Ltd. to accompany an application to South Dublin County Council (SDCC) for permission for two no. 110kV transmission lines and a 110kV Gas Insulated Switchgear (GIS) substation compound along with associated and ancillary works and is described as follows:
- 1.2 The proposed development primarily comprises the demolition of the existing two storey dwelling of Bulmer and associated outbuildings and stable building; and the provision of two no. 110kV transmission lines and a 110kV Gas Insulated Switchgear (GIS) substation compound and Transformers / MV switch room compound along with associated and ancillary works. The site of the proposed development has an area of c. 4.6 hectares, and the proposed development is described as follows:
- 1.3 The proposed 110kV GIS Substation and Transformers / MV control room compounds are to be located on lands to the south-east of the Power Generation Facility that was permitted under SDCC Reg. Ref. SD20A/0058 and to the north-west of the concurrent application for 2 no. two storey Information Communication Technology (ICT) facilities each with three storey plant levels and associated ancillary development that will have a gross floor area of 30,518sqm under SDCC Reg. Ref. SD20A/0324, and within an overall landholding bound to the south by the Peamount Road (R120); and on lands that contain the 2 no. residential properties of Little Acre and Bulmer as well as agricultural lands and buildings within the townland of Milltown, Newcastle, Co. Dublin.
- 1.4 The proposed demolition of the existing two storey dwelling of Bulmer and associated outbuildings and stable building to the front of the site. The existing Little Acre dwelling and associated buildings are permitted to be demolished under SDCC Reg. Ref. SD20A/0058.
- 1.5 The proposed 110kV Gas Insulated Switchgear (GIS) Substation Compound includes the provision of a two storey GIS Substation building (with a gross floor area of 1,430sqm) (known as the Peamount Substation), car parking, lighting, associated underground services and roads within a 3.0m high fenced compound, and all associated construction and ancillary works. The Transformers / MV switch room compound includes three transformers plus MV control room (200sqm), lighting and lightning masts, car parking, associated underground services and roads within a 3.0m high fenced and separate compound, and all associated construction and ancillary works.
- 1.6 Two proposed underground single circuit 110kV transmission lines will connect the proposed Peamount 110kV GIS Substation to the existing Castlebaggot-Kilmahud circuit to the east. The proposed transmission lines cover a distance of approximately 940m within the townlands of Milltown and Clutterland. They will pass outside of the site and along and under the following: R120, the former Nangor Road, Griffeen River and the newly realigned Baldonnel Road.
- 1.7 The development includes the connections to the proposed Peamount substation as well as to the Castlebaggot-Kilmahud circuit, as well as changes to the attenuation pond and landscaping permitted under SDCC Reg. Ref. SD20A/0058 and all associated construction and ancillary works.
- 1.8 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**
- 1.9 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.

1.10 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, the proposed GIS substation, and the permitted Power Generation Facility.

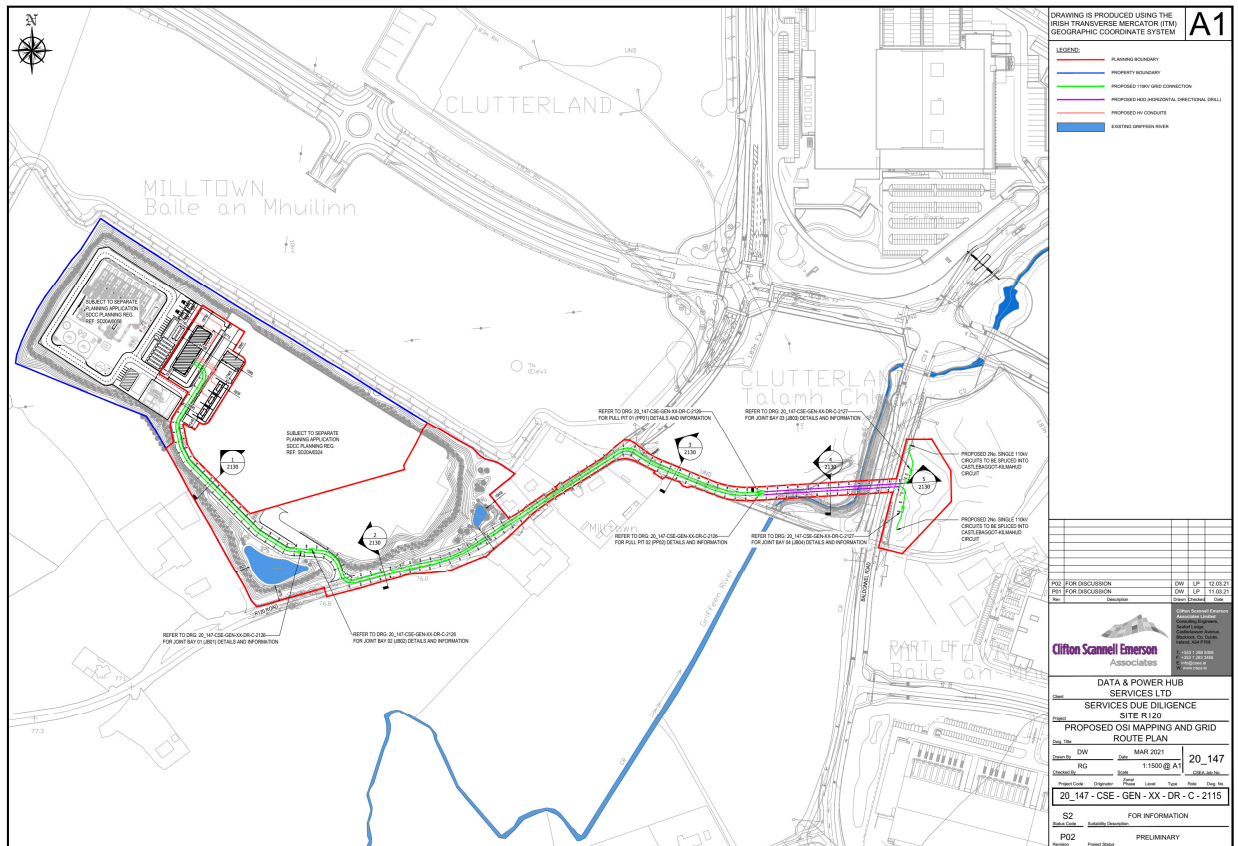


Figure 1.1 Proposed site layout plan of the Proposed Development site (red line) indicating proposed 110kV transmission lines (green and pink line) well as the permitted development (Source: Drawing no. 20_147-CSE-GEN-00-XX-DR-C-2115, CSEA Consulting Engineers)

Requirements for an EIA Report

1.11 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 facilitate the export of power from the permitted Power Generation facility (PGF) as granted under SDCC Reg. Ref. SD20A/0058 and it will provide the permanent power supply for the concurrent application for an ICT Facility that is subject to a request for Additional Information under SDCC Reg. Ref. SD20A/0324. This concurrent application required an EIA Report to accompany the planning application.

1.12 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

1.13 The applicant, Data and Power Hub Services Ltd. is the same as under the Permitted Development and concurrent application. The Proposed Development is designed to enable the export of power

from the Power Generation Facility (PGF) to the National Grid. This connection has been granted and accepted by Eirgrid. The proposed substation is also designed to provide a permanent power supply for the ICT Facility, if granted, that is subject to the concurrent application, and a request for Additional Information, under SDCC Reg. Ref. SD20A/0324. The same infrastructure, or part thereof, will be used to provide power to the ICT facilities.

- 1.14 A Final Grant of Permission was issued on the 17th December 2020 (subject to 19 no. conditions) in respect of the Power Generation Facility and all associated elements to the immediate north-west of the proposed substation site. The Permitted Development was described as follows:

Demolition of the existing single storey house of 'Little Acre' and its associated garage and other buildings; demolition of the single storey stable building on the overall site; construction of a Power Generation Facility within a compound of 14,240sqm that will contain a Power Plant building with up to 7 no. 25m high flues (in 2 no. stacks; combining the individual flues from the engine units). The Power Plant building will house 7 engines and the MV/LV switchgear. The compound will also contain an AGI (Above Ground Installation) gas connection, gas compressor, water tank, water treatment, firewater tank and pumps, fuel skids and fuel tank. The proposed development also includes a battery energy storage system compound of 1,030sqm containing 17 skids including step up transformer, auxiliary power transformer, switchgear container and a total of 35 Inverters. Car parking has been increased to 14 with a turning lane on the Peamount Road, and footpath along the entire length of the frontage of the site.

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 met with An Bord Pleanála (ABP) to confirm the Proposed Development was an SID application and to discuss the scope of the planning application. Consultation has also been undertaken with Eirgrid and ESB Networks to ensure the Proposed Development design meets their requirements.
- 1.17 In addition, the relevant specialists and project engineers (CSEA and JB Barry) 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, and the Department of Defence 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. 4.6ha. that consists of two parts. Firstly, within a primarily greenfield site that sits to the north of the Peamount Road (R120) that includes the plots and associated lands of two residential properties known as Little Acre and Bulmer, as well as associated agricultural buildings within the townland of Milltown, Newcastle, Co. Dublin. The second part of the site is a linear route that consists of part of the R120, former R134 (Nangor Road), greenfield land and Baldonnel Road. The substation site and the wider site in which it sits is bounded by the Peamount Road (R120) to the south; a haulage business and further agricultural lands to the west; further agricultural lands to the north; and further agricultural lands and two residential properties that abound the R120 to the east.
- 2.2 The proposed 110kV GIS Substation Compound; and part of the transmission line within the wider substation site to the existing 110kV underground Castlebaggot - Kilmahud circuit are located on lands that at the time of making this application are in private ownership.
- 2.3 The transmission line outside of the wider substation site to the existing 110kV Castlebaggot - Kilmahud circuit to the east is located on lands that include the R120, former R134 (Nangor Road), greenfield land and Baldonnel Road that are in the control or ownership of SDCC.
- 2.4 The proposed development primarily comprises the demolition of the existing two storey dwelling of Bulmer and associated outbuildings and stable building; and the provision of two no. 110kV transmission lines and a 110kV Gas Insulated Switchgear (GIS) substation compound and Transformers / MV switch room compound along with associated and ancillary works. The site of the proposed development has an area of c. 4.6 hectares, and the proposed development is described as follows:
- The proposed 110kV GIS Substation and Transformers / MV control room compounds are to be located on lands to the south-east of the Power Generation Facility that was permitted under SDCC Reg. Ref. SD20A/0058 and to the north-west of the concurrent application for 2 no. two storey Information Communication Technology (ICT) facilities each with three storey plant levels and associated ancillary development that will have a gross floor area of 30,518sqm under SDCC Reg. Ref. SD20A/0324, and within an overall landholding bound to the south by the Peamount Road (R120); and on lands that contain the 2 no. residential properties of Little Acre and Bulmer as well as agricultural lands and buildings within the townland of Milltown, Newcastle, Co. Dublin.
 - The proposed demolition of the existing two storey dwelling of Bulmer and associated outbuildings and stable building to the front of the site. The existing Little Acre dwelling and associated buildings are permitted to be demolished under SDCC Reg. Ref. SD20A/0058.
 - The proposed 110kV Gas Insulated Switchgear (GIS) Substation Compound includes the provision of a two storey GIS Substation building (with a gross floor area of 1,430sqm) (known as the Peamount Substation), car parking, lighting, associated underground services and roads within a 3.0m high fenced compound, and all associated construction and ancillary works. The Transformers / MV switch room compound includes three transformers plus MV control room (200sqm), lighting and lightning masts, car parking, associated underground services and roads within a 3.0m high fenced and separate compound, and all associated construction and ancillary works.
 - Two proposed underground single circuit 110kV transmission lines will connect the proposed Peamount 110kV GIS Substation to the existing Castlebaggot-Kilmahud circuit to the east. The proposed transmission lines cover a distance of approximately 940m within the townlands of Milltown and Clutterland. They will pass outside of the site and along and under the following: R120, the former Nangor Road, Griffeen River and the newly realigned Baldonnel Road.
 - The development includes the connections to the proposed Peamount substation as well as to the Castlebaggot-Kilmahud circuit, as well as changes to the attenuation pond and landscaping permitted under SDCC Reg. Ref. SD20A/0058 and all associated construction and ancillary works.

- 2.5 The route of the underground 110kV transmission line to the Castlebaggot - Kilmahud circuit passes along the permitted internal access road to the PGF granted under SDCC Reg. Ref. SD20A/0058 within the Milltown part of the site before passing under the R120 (Peamount Road) for c. 300m to the north-east to its junction with the former Nangor Road (R134) (now cut off at either end) where it will pass under c. 100m of its length before diverting across SDCC owned land before passing under the culverted Griffeen River (150m) and under the realigned Baldonnel Road to connect to the Castlebaggot-Kilmahud circuit. The length of the 110kV cable route is c. 940m. A proposed joint bay is to be installed at the connection to the Castlebaggot-Kilmahud circuit as well as along this route.

110kV GIS Substation Compound

- 2.6 The proposed 110kV Gas Insulated Switchgear (GIS) Substation Compound is to be located on lands which are currently greenfield in nature, to the south-east of the Permitted Development granted under SDCC Reg. Ref. SD20A/0058.
- 2.7 The proposed 110kV GIS Substation is provided within two compounds. The GIS compound includes the provision of a two storey GIS Substation building (with a gross floor area of 1,430sqm) (to be known as the Peamount Substation) within a 3.0m high fenced compound and all associated construction and ancillary works. The two storey GIS substation building (with a gross floor area of 1,430sqm) will accommodate a cable pit, generator room, workshop, mess room, hoist area, relay room, mess room, generator room and battery room at ground floor level, with a storeroom and substation room at first floor level. The GIS Substation, which is rectangular in shape, is located to the north of the permitted internal access road that will serve it and will be served by 5 no. car parking spaces; and will be located adjacent to the PGF. The access gateway to the compound will be provided on the southern side of the substation compound, providing for vehicular and pedestrian access to the substation area.
- 2.8 The transformer compound is located to the south of the internal access road and will consist of three transformers, an MV Control Building that is rectangular in form (with a gross floor area of 200sqm), Lighting Masts, and 6 no. car parking spaces. The single storey MV Control Building will accommodate 2 number electrical switch rooms, AUX transition room, relay room, battery room and a control room. The proposed transformers will be located to the west of the MV Control Room, and set out in a row running north-east to south-west parallel to the access road within their compound area. Both the GIS Substation and MV Control Building are finished in metal cladding and are to be accessed off the internal access road proposed to serve the ICT facility. This element of the proposed development is entirely related to the ICT facility and therefore there is no issue of prematurity given that permission has not yet been granted under SDCC Reg. Ref. SD20A/0324.

110kV transmission lines

- 2.9 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.
- 2.10 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. The typical width of each 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. For the purposes of this assessment, reference to the 'transmission lines' refers to the transmission line to the Castlebaggot - Kilmahud circuit.
- 2.11 Horizontal directional drilling is proposed for a c. 150m length of the 110kV transmission line from the Castlebaggot-Kilmahud circuit. The location of the directional drilling is under the culverted Griffeen River where the 110kV transmission line from the Castlebaggot-Kilmahud circuit crosses under the new Baldonnel Road to the former Nangor Road. The depth of the drilling is expected to be c. 9.65m in depth and will require four separate directional drillings that will be c. 2.5m apart.

- 2.12 A summary of the proposed target dates (earliest possible dates) for the Proposed Development are as follows:
- Application for Planning Permission – Q1, 2021;
 - Commence Site Construction works (subject to grant of planning permission) – Q4, 2021; and
 - Completion of Construction and Commissioning – Q3, 2023.

Phases of the Proposed Development

- 2.13 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.

- 2.14 The following sections present a description of each of these aspects.

Construction

- 2.15 It is estimated that the civil and commissioning works will take approximately 20 months. In general, the impact of the construction period would be short-term in nature. In general, the civil works element of work will require between 15 - 20 (average) and 30 (peak) staff. It is proposed that the accesses and haul roads for vehicles, the contractors' compound and fencing that will have been established for the construction of the Permitted Development will be utilised for the Proposed Development.
- 2.16 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.
- 2.17 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 / short-term effects (less than one year / greater than one year and less than seven years) 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.
- 2.18 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.
- 2.19 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

- 2.20 Once the construction of the Proposed Development is completed, ESB Networks will be mobilised to complete the commissioning. Commissioning 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

- 2.21 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.
- 2.22 There are no full-time staff required for operation. 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. 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). Traffic relating to staff movements have been assessed as part of the traffic and transportation chapter of this EIA Report (Chapter 13).
- 2.23 Minor volumes of hydrocarbons will be stored within bunds in the event of a leakage of either transformer oils or diesel fuels from the emergency back-up house generator. The generator is located within the GIS building, and provides back-up power to the controls and lighting systems within the GIS building in the event of a power outage.

Decommissioning

- 2.24 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 GIS substation is no longer required over the long term, then full decommissioning in accordance with prevailing best practice will be undertaken.
- 2.25 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.
- 2.26 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

- 2.27 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

- 2.28 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

- 2.29 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.
- 2.30 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.
- 2.31 The Proposed Development will not be a Seveso/COMAH facility. The only substance stored on site controlled under Seveso/COMAH will be diesel for a single back-up generator (tank capacity 1m³) and the transformers (tank capacity 36m³) and the amounts proposed do not exceed the relevant thresholds of the Seveso directive.
- 2.32 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 110kV GIS substation and 110kV transmission lines are designed to enable the export of power from the permitted PGF as granted under SDCC Reg. Ref. SD20A/0058. A Connection Offer has been provided by Eirgrid for the export of power from the permitted Power Generation Facility (PGF) to the Castlebaggot-Kilmahud Circuit. The PGF is located to the north-west of the proposed 110kV GIS (Peamount) substation.
- 3.4 The proposed 110kV GIS substation and 110kV transmission lines are also designed to support the power demand for the concurrent application for an ICT facility under SDCC Reg. Ref. SD20A/0324. This may require a separate connection in terms of transmission lines to the National Grid and a separate application to the Board. This concurrent application was subject to a separate planning application and EIA Report and is located to the south-east of the proposed 110kV GIS (Peamount) substation.
- 3.5 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 proposed substation and proposed route for the transmission lines. The SDCC Planning Department website was consulted, and permissions granted within the previous five years (since February 2016) were examined.
- 3.6 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 Power Generation Facility (PGF) (SDCC Reg. Ref. SD20A/0058), once constructed, would be left without the ability to export power, and the applied for ICT facility without a permanent power supply.

4.3 The Proposed Development is designed to facilitate the export of power from the Permitted Development to the National Grid within the Greater Dublin Area where there is a recognised constraint in the National Grid. Without the connection the Power Generation Facility would not be able to operate.

4.4 The permanent power supply is designed to provide the full power requirement of the ICT Facility. Without the permanent power supply the Proposed Development will provide, the ICT Facility would operate at a fraction of its capability, until such a time as another application is made, and permission gained. The land on which the Proposed Development would be located, would remain undeveloped within the site in a do-nothing scenario. The land would be utilised for the construction phases of the Permitted Development and would then recolonise as scrub following the completion of the development.

Alternative project locations

GIS Substation

4.5 The location of the proposed GIS substation compound was identified as part of the Permitted Development as granted under SDCC Planning Reg. Ref. SD20A/0058 (see note 10 on Figure 4.1 below of the Proposed Site Layout drawing submitted under the Permitted Development application). The transformer compound and MV Control Room are incorporated within the site identified for future development, as these are not required to facilitate the export of power from the PGF.

4.6 The location of the proposed substation under the Permitted Development, as amended under the Further Information response, and the Proposed Development has remained unchanged. Its location was assessed having regard to the environmental effects, particularly in terms of visual impact, as well as the length of the 110kV transmission line and therefore construction phase impacts as well as constraints along the route as a result of other infrastructure.

4.7 At the time of the making of the Permitted Development application for the Power Generation Facility it was unclear as to which substation or circuit that the GIS substation would connect to, with Castlebaggot and Kilmahud substations being options that were discussed with Eirgrid. The location of the proposed substation enables a stronger architectural expression to the public front of the ICT Facility as well as reducing required infrastructure to connect both the PGF and ICT facility to it in the most straightforward manner. It also enables the proposed substation to be well screened from the public domain.

110kV Transmission Line Routes

4.8 The assessment of the alternative routes for the 110kV transmission lines considered various route options for the 110kV transmission line to the Castlebaggot-Kilmahud Circuit. These included routes

and connection points relating to the Castlebaggot substation and Kilmahud substation. Once the connection point was established by Eirgrid, the number of alternative routes was limited to the eastern section of the route, and how it would traverse the Griffeen River, due to the need to navigate this route in a manner that minimises the potential environmental impact on the river and so that it avoids land in third party ownership beyond that of South Dublin County Council.

- 4.9 The route up to this point was limited in terms of alternatives due to the extent of the ICT facility application under SDCC Reg. Ref. SD20A/0324 on the main site, and the ability to utilise the Peamount Road and former Nangor Road as the route of the transmission routes.
- 4.10 The alternatives considered were limited to different arrangements of linking from the former Nangor Road to the connection point. The aim of the alternative routes were to minimise, where possible the length of drilling, and if possible to remain within the Old Nangor Road alignment where possible. None of the alternatives differed significantly in terms of length (c. 150m) given the short nature of this part of the route.

Alternative design / Layouts

- 4.11 The proposed 110kV GIS substation compound is designed based on requirements stipulated by the TAO i.e. ESB Networks. The design of the Substation Compound is centred around the equipment requirements of ESB Networks that are required to provide an efficient and safe service. From a “design and layout” point of view, therefore, the flexibility to select alternative designs and layouts was not available to the Applicant and there are, therefore no reasonable alternatives to the layout of the proposed 110kV GIS substation compound.
- 4.12 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.
- 4.13 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

- 4.14 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.
- 4.15 The underground cable installations must meet EirGrid’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.
- 4.16 In terms of the proposed processes, the proposed GIS substation will employ the same electricity generation and transmission processes that are used by EirGrid at their other facilities in Ireland and represents the most up-to-date and state of the art processes currently available. 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.
- 4.17 In terms of the proposed processes, the proposed GIS substation and new cable bays will employ the same electricity generation and transmission processes that are used by EirGrid at their other

facilities in Ireland and represents the most up-to-date and state of the art processes currently available. 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.

- 4.18 The proposed GIS substation is designed based on requirements stipulated by EirGrid. The design of the substation is centred around the equipment requirements of EirGrid that are required to provide an efficient and safe service. Therefore, the flexibility to select alternative technologies was not available to the Applicant.

Alternative mitigation

- 4.19 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).
- 4.20 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

- 4.21 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.
- 4.22 During construction the proposed 110kV routes (similar to the alternative route assessed i.e. Option 2) will have a **temporary, neutral** and **imperceptible to not significant** environmental effect. It is noted that the proposed route and the alternative route considered were considered to have a **neutral, imperceptible, long-term** environmental effect during the operational phase.
- 4.23 The design of the proposed GIS substation and new cable 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 short-term, imperceptible, positive effect on local business with the limited presence of a very small number of construction workers of 15-30 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 short-term 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 **short-term** and **not significant** with respect to human health.
- 5.4 The impact on human health due to air quality during the Operational Phase is considered to be **long-term, imperceptible** and **neutral**. The potential impact on human health due to noise during the Operational Phase is set out in Chapter 9 and is considered to be **negative, not significant** and **long-term**.
- 5.5 In terms of traffic, the predicted impact of the development on human beings and in particular road users will be **short-term, 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 There is no connectivity between the Proposed Development site and the Griffeen River that ultimately drain into the River Liffey. There will be no direct impacts on the European sites in Dublin Bay.
- 6.4 The Proposed Development will have no predicted impacts on European sites, therefore cumulative impacts can be ruled out. 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.

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. 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.

- 7.3 The GSI currently classifies the aquifer vulnerability in the region of the Proposed Development as 'Extreme' (E) on the west of the site and 'High' (H) on the east of the site. Extreme vulnerability 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 2.0 to 2.6 m BGL.
- 7.4 Based on the NRA methodology (refer Appendix 7.1), the criteria for rating site importance of hydrogeological features, the importance of the hydrogeological features at this site is rated as **medium importance**. This is based on the assessment that the attribute has a medium-quality significance or value on a local scale. The aquifer is a Locally Important Aquifer but is not widely used for public water supply or generally for potable use.
- 7.5 The Groundwater Body (GWB) underlying the site is the Dublin GWB (EU Groundwater Body Code: IE_EA_G_008). Assessments carried out under the 1st Cycle Water Framework Directive 2013-2018 concluded an overall groundwater status as "Good" through the assessment programme. Currently the Dublin GWB has a WFD risk score of "not at risk" meaning the Dublin GWB is likely to meet its WFD targets. There is no evidence of springs or karstification in this area according to the GSI Karst database (2015).
- 7.6 Shallow cut and fill will be required to facilitate construction of the substation and the installation of the 110kV transmission lines. Excavations are required for installation of the transmission lines.
- 7.7 The installation of the transmission line will require the excavation of one trench along each of the routes; each containing one 110 kV circuit. The optimum depth of excavation of the trenches required to facilitate installation of the ducting will typically have an optimum depth of excavation of 1.25m below ground level but may increase at utility crossings and up to c. 9.65m under the Griffeen River. The typical width of each trench is 0.7m; however, this may vary depending on ground conditions and existing services.
- 7.8 Subsoil stripping and localised stockpiling of soil will be required during construction. It is estimated that approximately 26,256m³ 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.
- 7.9 The implementation of mitigation measures outlined in Chapter 7 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 **short-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**.
- 7.10 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 development site is within the sub-catchment of the Griffeen River, Lucan Stream and Baldonnell Stream which are tributaries of the River Liffey.
- 8.2 The proposed route of the two 110kV transmission cables cross under the Griffeen River. It is proposed to horizontally drill beneath the waterbody for the installation of the transmission lines. 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 proposed development will provide a significant improvement to the local drainage catchment as it is proposed to provide full attenuation for increase in hardstand area in compliance with the requirements of the Greater Dublin Strategic Drainage Study. A number of measures will be put in place to minimise the likelihood of any spills entering the water environment to include the design of the car park, fitting of refuelling areas with hydrocarbon interceptors and on-site speed restrictions.
- 8.5 It is proposed to ultimately discharge surface water from the proposed development, post attenuation and outflow restrictions, to the pre-existing surface water drainage system located along Baldonnel Road where it will connect into the private SDCC waste water treatment system within Grange Castle Business Park
- 8.6 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 in the vicinity of the land drain associated with the Baldonnel Stream. By maintaining these distances and the employment of best practice methods it is anticipated to avoid local pollution of the Baldonnel Stream.
- 8.7 As such the predicted impact will be **short-term, imperceptible** and **neutral** during construction. During operation there is no likely impact on receiving water bodies. Therefore, the assessed impact is **long-term, imperceptible** and **neutral**. As there is no overall change in the existing hydrological regime, the potential cumulative impact with respect to water and hydrology is deemed to be **long-term, neutral** in terms of quality and **not significant**, once appropriate mitigation measures to manage water quality runoff in compliance with legislative requirement are put in place for each development.

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, 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 **moderate, negative** and **short-term** in nature. It is considered that as the proposed development progresses from initial ground works that construction noise impacts will reduce from moderate to **not significant**.
- 9.5 Proprietary noise and vibration control measures will be employed in order to ensure that noise emissions from building services plant during the operational phase do not exceed the adopted criterion at the façade of any nearby noise sensitive locations. In addition, noise emissions should be

broadband in nature and should not contain any tonal or impulsive elements. The resultant noise impact is **negative, not significant** and **long-term**.

- 9.6 Any change in noise levels associated with vehicles at road junctions during the Operational Phase 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, **short-term** 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, the potential impact on climate change and transboundary pollution from the construction of the Proposed Development is deemed to be temporary and not significant in relation to Ireland's obligations under the EU 2020 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 **short term** 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 situated mostly within the site of the permitted PGF granted under SDCC Reg. Ref. SD20A/0058 and the concurrent application for an ICT Facility under SDCC Reg. Ref. SD20A/0324 and is intrinsically and visually linked to these developments. The Proposed Development is integrated into the Permitted Development site as follows:
- The proposed Substation will be located in the centre of the Masterplan site between the Permitted Development of the Power Generation Facility and the Concurrent Application for the ICT Facility.
 - There are no landscape proposals within the proposed substation and ancillary element parts of the site.
 - The berms and landscaping applied for under the ICT facility application along Peamount Road and around the attenuation pond, are also included under this application as they did not form part of the Permitted PGF application.
 - Perimeter boundary fencing in line with Eirgrid requirements is proposed along all of the boundaries of the substation and transformer / MV building compounds.
 - Elements of the permitted development such as the earth berms and woodland planting which surround the site and the existing data halls will have a visual effect on the proposed substation part of the proposed development.
- 11.2 The location from which the subject lands are most visually noticeable is along Peamount Road (R120 Road), most notably in the south-eastern corner of the site, as you approach the main site entrance from the south. From this point, the part of the subject lands which extend along the access road and around the attenuation pond are fully visible due to the flat nature of the landscape in the south-eastern corner of the site. The site is also visible, albeit to a lesser extent, from further north along Peamount Road. The existing properties and the associated vegetation; mature trees, formal hedges and hedgerow on the permitted development lands provide screening to the subject lands from this point.
- 11.3 Due to the topography on subject and local lands, the lack of any vertical features on subject lands and the significant number of trees and hedgerows in the area, the subject lands are not visible from many locations in the wider landscape. Where partial or distant views are possible it is the trees and the existing buildings associated with the permitted development lands and surrounding areas which are most visible and prominent.
- 11.4 The construction of the underground transmission lines will require trenching and stockpiling of material along its route. The roads along which the 110kV transmission line passes to the Kilmahud-Corkagh circuit have recently been upgraded and wayleaves for the trenches are accommodated within these schemes. The temporary works required to install the cables would be similar to works that have been undertaken in this area recently and will require some recently planted trees alongside this road to be removed.
- 11.5 With the above considered the impact on the landscape character during construction would be **negative** and considered **moderate** in magnitude and **short-term** in its duration.
- 11.6 The operational phase will give rise to a noticeable change in the landscape character. The initial removal of an agricultural field landscape and two residential properties to be replaced with built development would be considered a negative impact on the landscape character. However, the Permitted Development on these lands will significantly alter the landscape character and this new landscape will surround the substation that forms part of the Proposed Development.
- 11.7 The landscape measures under the Permitted Development will significantly improve the quality of the landscape character of this area. The significant amount of native woodland, wetland and grassland habitats to be created would have a very positive impact on the landscape character of this area and the wider environment. The initial impact of the built development on the landscape character could be perceived as negative in the short term due to the change in type from a field to a built structure. In the context of the surrounding development however, this impact would be significantly reduced. In the long term the level of this impact will continue to reduce further as the habitats establish and become integrated into the surrounding landscape.

- 11.8 The site is specifically zoned for this type of development and there have been recent built developments of a much larger scale in the local vicinity including a Substation. Many of these built developments are dominant in views from the Proposed Development site. In this context the Proposed Development would be considered a continuation of existing trends in the local area.
- 11.9 The landscape proposals include the establishment of a significant level of native woodland, hedgerows and native wetland and grassland meadows. This landscape treatment will contribute positively to the landscape character of the area.
- 11.10 The overall visual impact of the Proposed Development would therefore be considered **neutral, short-term** and **not significant** due to the extent of screening associated with the Permitted Development and now enhanced under the Proposed Development to the south and south-west paired with the level of similar scale development in the surrounding area.

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 part of the Proposed Development site is bounded by the R120 Peamount Road to the south. This road connects to Newcastle to the west and into the R134 and Grange Castle Business Park to the east. Public transport services are provided locally, with 2 no. Dublin Bus services operating within the vicinity of the site.
- 12.2 The proposed Peamount substation element of the Proposed Development will contain 11 no. car parking spaces to exclusively accommodate all maintenance personnel attempting to service the proposed Substation and transformer compound. These will be provided in addition to the car parking spaces permitted under SDCC Reg. Ref. SD20A/0058 to serve the PGF. The proposed new spaces will be located to the east of the 110kV GIS building within the substation compound and within the transformer compound.
- 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 the permitted development and concurrent ICT Facility application on the site.
- 12.4 The potential impacts of the Proposed Development has been considered for both the construction and operational stages based on Transport Infrastructure Ireland (TII) guidelines set out in the Traffic & Transport Assessment Guidelines (2014).
- 12.5 During the construction phase, it is envisaged that HGV traffic will travel via the M50 and the N7, via the R136 and R134 New Nangor Road. Construction traffic will use the same route for access and egress to/from the site.
- 12.6 The likely traffic generation of the Proposed Development during the construction phase was estimated based on contractor experience of similar Substation works and underground cable installation works, taking into account the scale of the substation and the length of underground cables to be installed.
- 12.7 It is likely that the construction of the Proposed Development would take place over a period of approximately 20 months from the commencement of construction for site development works, with a peak construction trip generation of 30 return car vehicular trips and 10 HGVs entering and exiting the site per day.
- 12.8 Mitigation measures discussed within the Chapter, will be put in place to offset any potential traffic impacts associated with the development. Therefore, the predicted impact of the development will be **short-term, negative and not significant** for the construction phase, and **long-term, neutral and imperceptible** for the operational phase.

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, There are no National Monuments or sites subject to preservation orders within the vicinity of the Proposed Development site. Two structures included in the NIAH are located adjacent to the route of the Proposed Development along the R120 (NIAH Nos 11208006 (outbuilding) & 11208016 (public house)). Neither will be directly impacted by the development.
- 13.3 High resolution magnetic gradiometer survey was conducted by John Nichols of Target Ltd (Licence No. 19R0190 issued by the Department of Culture, Heritage and the Gaeltacht). Licensed archaeological testing will be undertaken prior to development to determine the archaeological significance of the anomalies identified under the Survey and to determine if any further archaeological mitigation is required.
- 13.4 The construction phase of the Proposed Development will not impact directly on any sites included in the Record of Monuments and Places. However, geophysical survey has identified a number of potential archaeological anomalies within the site. The ground disturbance phase of the Proposed Development would impact negatively on any subsurface features associated with these anomalies.
- 13.5 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 Proposed Development will generate surplus excavated material, as well as waste from the welfare facilities and site office at the site compound during the Construction Phase. Surplus excavated material classified as waste (as opposed to a by-product) will be segregated at source and transferred directly from site by a suitably permitted waste contractor(s) to suitably authorised receiving facilities.
- 14.4 Waste materials generated at the site compound from the welfare facilities and site office will be temporarily stored in dedicated receptacles at the site compound pending collection by a suitably permitted waste contractor(s). The waste storage area will need to be easily accessible to waste collection vehicles.
- 14.5 If waste material is not managed and stored correctly on the site or at the site compound, it is likely to lead to litter or pollution issues at site, site compound and/or on adjacent properties. The knock-on effect of litter issues is the presence of vermin on the site, site compound and the surrounding areas. Waste material will be appropriately managed on site so as to avoid these issues.
- 14.6 The use of non-permitted waste contractors for transportation or unauthorised receiving facilities could give rise to inappropriate management of waste and result in negative environmental impacts or pollution. Removal and reuse/recycling/recovery/disposal of waste material from site will be carried out in accordance with the Waste Management Act 1996 (as amended), the Waste Management (Collection Permit) Regulations 2007 (as amended) and the Waste Management (Facility Permit & Registration) Regulations 2007 (as amended). It is essential that all waste

materials are dealt with in accordance with regional and national legislation, as outlined previously, and that time and resources are dedicated to ensuring efficient waste management practices.

- 14.7 Wastes will be collected by a suitably permitted contractor(s) and be transferred to suitably registered/permitted/licenced waste facilities for processing and segregation, reuse, recycling, recovery and/or disposal. There are numerous authorised waste facilities in the Leinster region which can accept non-hazardous and hazardous waste materials and acceptance of waste from the Proposed Development would be in line with daily activities at these facilities. At present, there is sufficient capacity for the acceptance of the predicted construction waste materials at facilities in the region.
- 14.8 Where offsite reuse of the wastes generated is not feasible, recycling and/or recovery of the waste will be carried where possible. Recovery and recycling of construction waste has a positive impact on sustainable resource consumption, for example where waste trees/shrubbery is mulched into a landscaping product or waste asphalt is recycled for use in new pavements. The use of recycled materials, where suitable, reduces the consumption of natural resources.
- 14.9 There is a quantity of material (made ground and soils and stones) which will need to be excavated to facilitate the Proposed Development. Clean inert soils and stones excavated will be reused on site as backfill, where practical. In the event that potentially contaminated material is encountered, correct classification and segregation of the excavated material is required to ensure that any potentially contaminated materials are identified and handled in a way that will not impact negatively on the health and safety of workers as well as on the receiving environment, both on and off-site. Contaminated material will need to be removed off-site for appropriate treatment and/or disposal.
- 14.10 Reuse of suitable clean inert excavated material onsite, where practical, will reduce consumption of natural quarry resources.
- 14.11 The predicted effect of construction waste generated from the Proposed Development is considered to be **short-term, neutral** and **not significant**.
- 14.12 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 and the first c. 310m of the two transmission lines are within private ownership; and

- The rest of the 110kV transmission lines to the Castlebaggiot-Kilmahud circuit continues for c. 630m along and under the R120, former R134 (Nangor Road) and through SDCC lands outside the main development site, under the Griffeen Rive to the eastern side of the Baldonnel Road. Where the route is not in the ownership of SDCC they are in control of the land as it has been taken in charge.

- 15.4 Letters of consent, to apply for development on the lands have been obtained from ESB Networks and SDCC (Roads and Property) and are included with the planning application.
- 15.5 The main access to the GIS substation compound will be via the permitted entrance to the main site from the Peamount Road to the south. This access road was permitted under SDCC Reg. Ref. SD20A/0058 and will also serve the PGF, and subject to a grant of permission will include a spur inside the entrance to provide access to the proposed ICT Facility. The Permitted Development site will be fully secured with a 3m high security fence, CCTV and surveillance systems with a further 3m high fence around the proposed 110kV GIS substation compound and transformer / MV building compound. There is good visibility on approach to the permitted access point as detailed in Chapter 12 - Traffic and Transportation.
- 15.6 The implementation of mitigation measures will ensure that the predicted impacts on the material assets during the construction phase will be **short-term, neutral** and **imperceptible** for the construction phase.

Power and Electrical Supply

- 15.7 The connection to the National Grid is a key consideration for the Permitted Development of the Power Generation Facility. One of the key reasons the site was chosen for the Permitted Development was the relative proximity to existing grid infrastructure and the established constraints within the National Grid in the wider Dublin Area. The Proposed Development will facilitate this connection to the National Grid via the Castlebaggot – Kilmahud Circuit.
- 15.8 The availability of power is also a key consideration for the concurrent application for the ICT facility on the main site. The ability to provide power through the National Grid, subject to agreement from Eirgrid, via the proposed substation was a key consideration in site selection for the proposed ICT facility.
- 15.9 The excavation of trenches within the vicinity of existing electrical services will be carried out in consultation with ESB Networks to ensure there is no impact on existing users.
- 15.10 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.

Telecommunications

- 15.11 Telecommunications including fibre required during the construction phase will be provided via a mobile connection. A fibre optic cable distribution network will be installed within the site, for the entire Permitted and Proposed Development. There are no potential impacts associated with telecommunications for the Proposed Development for the construction phase.

Surface water infrastructure

- 15.12 The surface water drainage network for the Permitted and Proposed Development is designed to accommodate surface water drainage from the wider site. As such, there is capacity for the Permitted Development to accommodate surface water runoff from the Proposed Development and no potential impacts on the surface water infrastructure. The drainage design includes oil separator interceptor systems to ensure the quality of storm water discharge is controlled prior to attenuation and discharge offsite.

- 15.13 The attenuated storm water will be discharged at the SDCC allowable greenfield run off rate of 56.3l/sec via a hydrobrake control device to the existing storm water system some 550m to the east of the main site
- 15.14 The route of the 110kV transmission line to the Castlebaggot-Kilmahud circuit traverses under an existing culverted part of the Griffeen River. The transmission line will pass beneath the culvert by way of horizontal directional drilling (HDD). Chapter 8 Hydrology addresses the impacts on the River associated with this transmission line. There are no predicted impacts on the Griffeen River. There are no potential impacts associated with surface water infrastructure for the Proposed Development for the construction phase.
- 15.15 The underground single circuit 110kV transmission lines from the proposed substation to the existing Castlebaggot-Kilmahud circuit do not require any surface water drainage infrastructure. The cable installations are underground and the joint bays will be constructed on a primarily permeable gravel surface.
- 15.16 There are no potential impacts associated with surface water infrastructure for the Proposed Development for the operational phase.

Foul drainage infrastructure

- 15.17 Welfare facilities (canteen, toilets etc.) will be available within the construction compound for the construction of the Permitted Development and it is proposed that can be utilised for the c. 15 – 30 staff required for the construction phase of the Proposed Development. The demand from the Proposed Development on wastewater infrastructure will not affect the ability of any existing or future developments in the area to access wastewater discharge.
- 15.18 There may be a requirement to discharge stormwater, collected in the trenches for the 110kV transmission lines to sewer. Any discharge water will be treated using a siltbuster or similar to remove suspended solids to ensure there is no impact on the foul drainage network. There will be no impact from construction works on the existing foul sewer network during construction.
- 15.19 Domestic effluent arising from the welfare facilities at the GIS substation will be minimal and will be collected within the permitted foul drainage network within the site and discharged to the local foul drainage network some 550m to the east of the substation site. All foul effluent generated is directed via gravity into the Grange Castle Business Park Waste Water Treatment Plant that will ultimately drain to the regional Wastewater Treatment Plant at Ringsend in Dublin for ultimate disposal.
- 15.20 The underground single circuit 110kV transmission lines from the proposed substation to the Castlebaggot-Kilmahud circuit do not require any foul drainage infrastructure. There are **no potential impacts** associated with foul drainage infrastructure for the Proposed Development for the operational phase.

Water supply

- 15.21 Welfare facilities (canteens, toilets etc.) will be available within the construction compound for the construction of the Permitted Development and it is proposed that they can be utilised for the small number of staff required for the construction phase of the Proposed Development. The increase in water demand and wastewater discharges, if any, will be imperceptible and will not affect existing users.
- 15.22 A pre-connection enquiry (PCE) form was submitted to Irish Water (IW) as part of the Permitted Development application (Reg. Ref. SD20A/0058) that took into consideration the requirements of the Proposed Development. IW provided a confirmation of feasibility (CoF) for the development on the 14th April 2020.
- 15.23 The underground single circuit 110kV transmission lines from the proposed substation to the existing Castlebaggot-Kilmahud circuit do not require any water supply. There are **no potential impacts** associated with water supply for the Proposed Development for the operational phase.

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.