

5.0 CONSIDERATION OF ALTERNATIVES

5.1 INTRODUCTION

This chapter provides an analysis of alternatives which have been considered as part of this development in terms of the following;

- Do Nothing' Scenario';
- Alternative Technologies;
- Alternative Locations;
- Alternative Process;
- Alternative Layouts; and
- Alternative Mitigations.

5.2 DO NOTHING SCENARIO

In the Do-Nothing scenario, Greener Ideas Limited would not develop a substation in Profile Park. In the absence of this substation, there would be:

- No method for electrical power generated at the adjacent powerplant site to be exported to the wider transmission network.
- Less integration of renewable technologies onto the Irish Grid which is one of the key strategic European and national objectives for the transition to a low carbon economy as set out in Chapter 4.0.
- Increased risk that older, less efficient and more polluting power plants would continue to operate and that proposals to decarbonise Ireland's power generation portfolio would be negatively impacted.
- The portfolio of dispatchable gas fired power plants available to manage fluctuating electricity demands and compensate for shortages occurring from wind or solar power would be reduced and this would result in increased grid instability.
- With respect to EirGrid's Data Centre Connection Policy, the absence of a substation for the associated power plant, raises the possibility that data centres will not develop on Profile Park, or they will seek to build their own power generating capability. However, the ability to centralise power generation within Profile Park, brings opportunities to better manage noise and emissions locally and potentially enabling lower built capacity, and less operating hours.
- The site on which the substation is proposed would more than likely remain unused, vacant and unchanged as a greenfield site.
- Given the size of the site, its unlikely to be developed by another developer despite the 'Enterprise and employment' zoning of the site under the South Dublin County Development Plan 2016-2022.

5.3 ALTERNATIVE CONNECTION POINTS AND TECHNOLOGIES

Greener Ideas Ltd submitted a grid connection application to EirGrid on 17th of November 2021, requesting a 100MW MEC grid connection to the adjacent proposed Kilcarbery Substation as illustrated in Figure 5-1 below. The Kilcarbery substation is proposed to be constructed as part of an adjacent Data Centre development and is currently under consideration by An Bord Pleanála (VA06S.312793).

On 21st of December 2021, EirGrid informed Greener Ideas Limited that for the purposes of the 2023-24T3 Capacity Market Auction, it should assume that the associated gas fired power plant's grid connection method will be 'a new 110 kV Air Insulated Switchgear ("AIS") Station

tailed to the nearby Barnakyle 110 kV Station via 0.375 km of underground cable (“UGC”). Refer to document OI29074-EGD-XX -XX-XX-DN-62-0001-S2 -PA1 attached in Appendix 5-1

On 14th of April 2022, EirGrid issued Greener Ideas Limited with a Connection Agreement, confirming the connection method and naming the new AIS substation ‘Baldonnell’. It is Greener Ideas Limited understanding that due to commercial and planning matters associated with the adjacent proposed Kilcarbery Substation, and to ensure security of supply for the 2024/23 winter period, EirGrid have instructed this connection method to be utilised, as opposed to connection via the adjacent proposed Kilcarbery substation.

5.4 ALTERNATIVE LOCATIONS

No alternative sites have been considered for the proposed substation, as the location of the proposed development was determined with respect to overall siting and design of the associated gas fired power plant. With respect to the location of the associated power plant, the following was considered:

- EirGrid’s Data Centre Connection Policy (2020) has identified the greater Dublin region as a capacity constrained area, especially with regard to satisfying the power needs of new data centres. EirGrid will provide firm capacity to a data centre where it provides new on-site dispatchable generation. This can also be facilitated through the installation of generation plant in the close proximity to the data centre, for example through projects such as the power plant in Profile Park. Therefore, the location and importance of the power plant at Profile Park is one such that it helps enable additional development on the Profile Park industrial estate, especially with regards to new data centres, who otherwise may need to build this capacity on-site.
- In addition to power supply to data centres, this type of power plant is necessary in order to achieve Ireland’s binding 2030 emission targets. These power plants will enable the delivery of an efficient, safe and secure electricity system by helping to manage fluctuating electricity demands and compensate for shortages occurring from renewables such as wind or solar power.
- Another critical location consideration was proximity to electricity grid and gas transmission networks and data centre developments on appropriately zoned lands:
 - *Profile Park is located immediately adjacent to the Castlebaggot 220 / 110 kV Substation and also within 1km of Gas Networks Ireland gas network near the Nangor Road; and*
 - *Profile Park, and its neighbouring lands, are also home to a number of existing data centre tenants including Google, Microsoft, Digital Realty Trust, Teledy and others. Much of the lands are zoned by South Dublin County Council to ‘To provide for enterprise and employment related uses’ which indicated that there is potential for future data centre development in the future.*

These factors influenced Greener Ideas Limited to contact Moffash Limited, the owners of Profile Park, to discuss the possibility of developing the gas fired power plant on its lands. These discussions resulted in an agreement to locate the proposed Baldonnell substation at the site which is considered in this EIA Report.

5.5 ALTERNATIVE SITE LAYOUT AND CABLE ROUTE SELECTION

Greener Ideas Limited considered an alternative site layout and cable route configuration which is presented below in Figure 5-1 and 5-2. The proposed site layout was arrived at following extensive discussions between the Applicant, Greener Ideas Limited and EirGrid/ESB.

This configuration comprised of similar plant and equipment however the overall layout differed from the layout which has been subject to consideration as part of this EIA Report. For example, access to the IPP compound has been relocated to be contained within the associated gas fired power plant site. This has resulted in a shift in the layout of infrastructure on site, most notable the movement of the IPP compound to the middle of the site. Accordingly, the associated grid connect UGC route has been altered to exit the north of the site, instead of the previous original design to connect into the adjacent proposed Kilcarbery substation.

This alternative layout would have resulted in a comparable environmental impact as the development was similar and environmental impacts such as landscape and visual, cultural heritage and traffic etc, would be comparable given the same baseline environment and scale of development. The design was ultimately discounted for the following reasons.

1. Preferred route reduced the number of 90-degree bends, so eliminating the need for the construction of Joint bays and allow the possible installation of the cable in a single pull.
2. Alternative cable route involved crossing 3rd party lands.
3. Alternative land would conflict with the possible future construction of the Kilcarbery GIS substation.
4. Alternative route would require the reconfiguration of the already approved GIL 15/110kV transformer, which received planning approval under application reg. SD21A/0167.

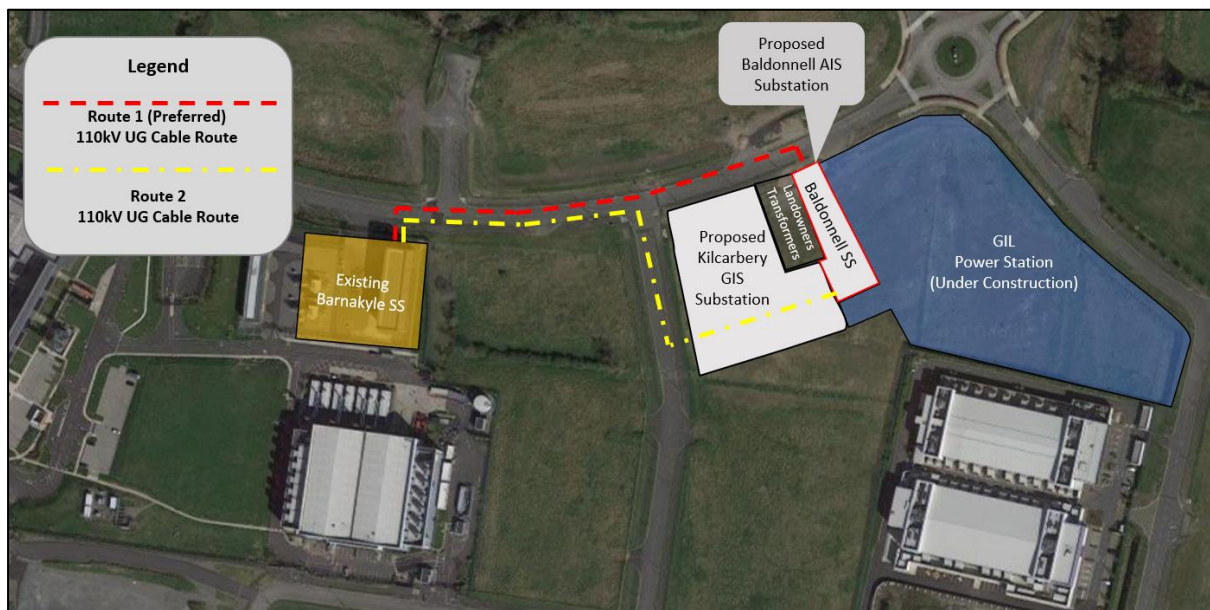
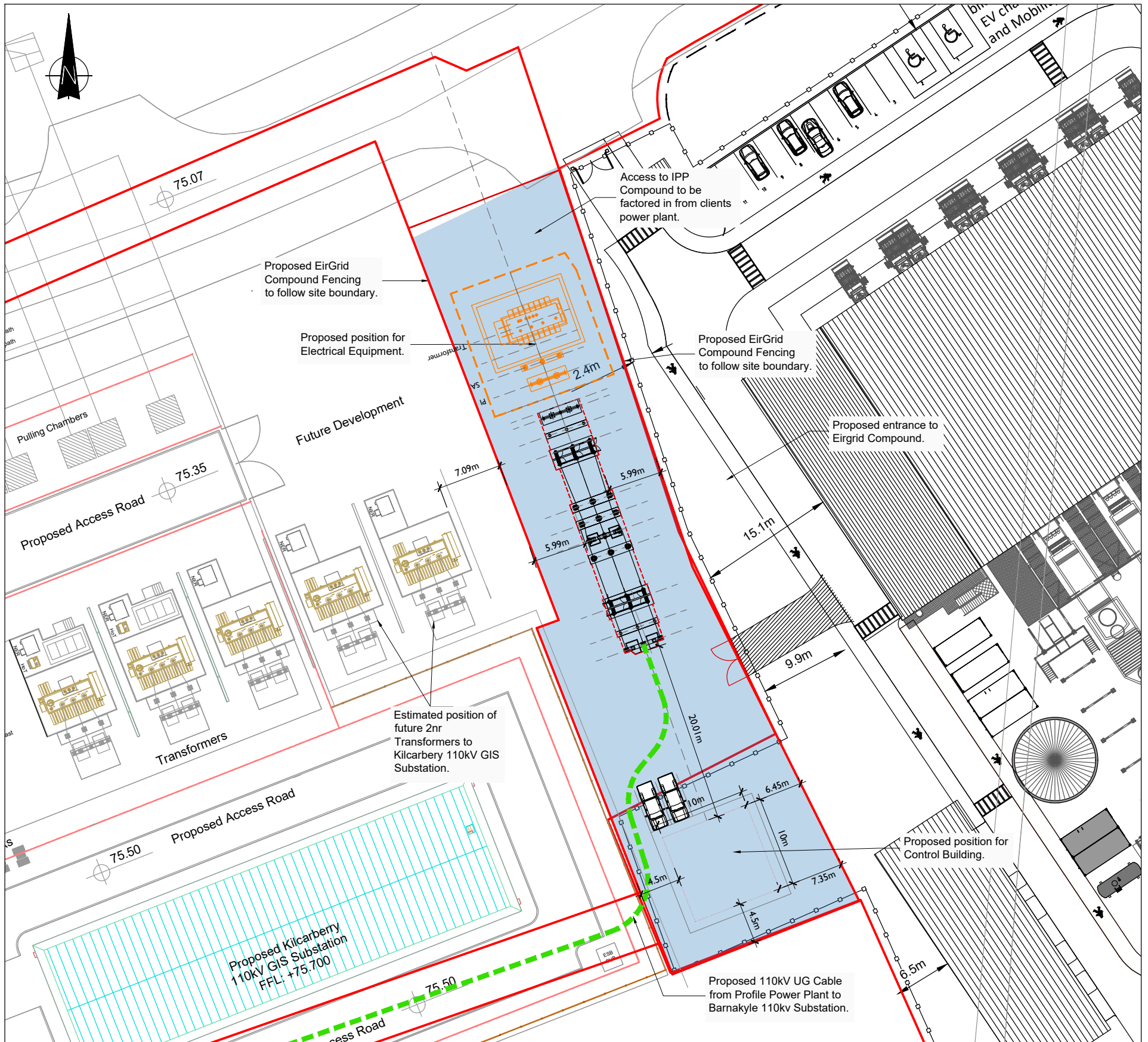


Figure 5-1: Alternative Cable Connections

5.6 ALTERNATIVE CONSTRUCTION AND DECOMMISSIONING PRACTICES

Construction practices for the proposed Baldonnell substation are well understood and there are several thousand such plants in operation across the globe. Standard construction practices will be employed in the construction of this plant. Similarly, decommissioning practices will follow standard practices and will be carried out in accordance with EPA requirements as set

out in the IE Licence. No alternative construction or decommissioning practices are considered in this EIAR as best practice or other regulatory requirements will be followed in all instances.



Proposed AIS Tail Station Layout Plan requiring derogation [Option B]

Scale : 1:500

PLAN LAYOUT - LEGEND	
Proposed 110kV UG Cable to Barnakyle 110kV Substation shown thus	
Area available by client for Eirgrid AIS Tail Substation shown thus	
Required Eirgrid AIS Substation requiring derogation shown thus	
Proposed IPP Compound shown thus	

- NOTES:**
- This drawing is to be read in conjunction with relevant drawings, specifications and reports.
 - Dimensions are in Meters, unless noted otherwise.
 - Drawings are not to be scaled. Use figured dimensions only.



Head Office
 Beenreigh,
 Abbeydorney,
 Tralee, Co. Kerry
 Ireland
 Tel: 00353 66 7135710

CLIENT



PROJECT
**GIL - Profile Park
 Grid Connection**

SHEET TITLE

**Profile Park - Site Layout Plan showing proposed
 EirGrid 110kV Compound Layout - Option B.**

DRAWING STATUS

For Information (Sketch)

LEGEND/NOTES: -

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SHEET NUMBER

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