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The Secretary
An Bord Pleanala
64 Marlborough Street
Dublin 1

1 September 2023

1st Party Appeal
Proposed On Site Power Generation at
Plot 100, Profile Park, Nangor Road, Clondalkin,
Dublin 22
SDCC Ref. SD22A/0156

Dear Sir/Madam,

We, Brock McClure, Planning & Development Consultants, 63 York Road, Dún Laoghaire, Co. Dublin, have been instructed by the Applicant, **Equinix (Ireland) Limited ("Equinix"), Unit 6/7 Kilcarbery Business Park, New Nangor Road, Dublin 22, D22FV12** to lodge this 1st Party Appeal to An Bord Pleanala in relation to the decision by South Dublin County Council to refuse permission in respect of the proposed On Site Power Generation at Plot 100, Profile Park, Nangor Road, Clondalkin, Dublin 22.

The decision was issued under Register Reference SD22A/0156 and 1 no. reason for refusal was cited. The decision date for the refusal is confirmed as **8 August 2023** and accordingly the final date to make an appeal is the **4 September 2023**. We confirm that this appeal is lodged within this statutory timeframe.

In accordance with the Planning Regulations, we enclose the prescribed fee of €3000.

Please refer to the enclosed Planning Appeal Report for the grounds of appeal and accompanying letters from Schneider Electric and ESBN.

We confirm that we act for Equinix (Ireland) Limited and request that all future correspondence in relation to this matter be directed to this office. If you have any queries in relation to this matter, please contact me directly.

Yours sincerely,

Suzanne McClure
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AN BORD PLEANÁLA
LDG- 066239-23
ABP-
01 SEP 2023
Fee: € 3000 Type: CHQ
Time: 14:32 By: Boenier

First Party Appeal
Planning Report

Proposed On Site Power Generation
at
Plot 100, Profile Park
Nangor Road,
Clondalkin,
Dublin 22

On behalf of
Equinix (Ireland) Limited

SD22A/0156

September 2023

Brock McClure

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1 Introduction

We, Brock McClure, Planning & Development Consultants, 63 York Road, Dún Laoghaire, Co. Dublin, have been instructed by the Applicant, **Equinix (Ireland) Limited ("Equinix"), Unit 6/7 Kilcarbery Business Park, New Nangor Road, Dublin 22, D22FV12,** to lodge this 1st Party Appeal against the South Dublin County Council decision to refuse permission for the development of an On Site Power Generation plant (OSPG) under Ref. SD22A/0156.

In compliance with the statutory regulations, we enclose herewith a cheque payable to An Bord Pleanála for the sum of €3,000 as the appropriate fee in this instance as an Environmental Impact Assessment Report (EIAR) was submitted as part of the Clarification of Further Information requested by South Dublin County Council. The decision date for the refusal is confirmed as **8th of August 2023** and accordingly the final date to make an appeal is the **4th of September 2023.**

This decision was issued under Register Reference SD22A/0156 and 1 no. reason for refusal was cited.

From the outset, we note that the subject proposal has been designed specifically for this site and in our view has regard to the existing context of the immediate area and contributes positively to its location. The proposal complies with the zoning objectives for the site and all relevant national and local planning and environmental policy as demonstrated in the planning enclosures submitted with the application (including information submitted at further information and clarification of further information stage).

This appeal document responds to all issues raised within South Dublin County Council's decision notice and the associated assessment within the Planner's Report. It is submitted that this Appeal Report provides a robust justification for the proposal and demonstrates its compliance with key national planning policies, so that the Board may issue a positive decision and overturn the ruling of the Planning Authority.

1.1 Process to date

As per the schedule to the refusal Equinix has allegedly *"failed to demonstrate that the proposed use is acceptable on EE zoned lands, in accordance with EDE7 objective 2 and section 12.9.4 of the South Dublin County Development Plan 2022-2028"*. In conjunction with this it is in our opinion that the central issue of this appeal is the proposed method of powering the already permitted data centre. Therefore, at the outset we consider it important to set out the applicant's engagement with ESB Networks (**ESBN**) to date, and to highlight the most recent development in that process, which is relevant to the appeal under assessment. The applicant received confirmation as of **1 June 2023** that the DB8 application under Ref. SD21A/0186 cannot be connected to the grid as the proposed site is within a constrained area.

The Applicant, Equinix, believes that ESBN's refusal is invalid, we refer to section 1.2 for the reasons and explanation of this statement. Equinix has subsequently raised a dispute pursuant to Section 34(6) of the Electricity Regulation Act, 1999 (as amended) (the **"Act"**). Equinix has requested that the CRU (1) contact ESBN to discuss this matter and (2) issue a direction to ESBN requiring it to issue a connection offer to Equinix in respect of DB8 in line with the DB8 Application (if needed, including reasonable flexible demand requirements).

This dispute relates to the decision of ESB Networks (ESBN) to refuse Equinix's application for an import connection to the distribution system in respect of its DB8 data centre project at Plot 100, Profile Park (the "Site"), Dublin (the ""DB8 Application"").

The key details of the DB8 Application are as follows:

- Customer Name: Equinix (Ireland) Ltd
- Site Address: Equinix (Ireland) Ltd, Site 100, Profile Park, New Nangor Road, Kilberry, Co. Dublin
- MIC requested: 9.9MVA new connection for a data centre
- Application Date: 19/01/2021
- Notification Number: 5000438729

We wish to outline the process to date and the number of discussions that took place with ESBN up until the proposed development was submitted. The verbal direction was that a power supply will be available to the development in 6-8 years, which is why an On-Site Power Generation (OSPG) Plant was proposed to power the development until such time that ESBN can provide a connection.

There have been discussions with ESBN representatives to understand in principle the likely supply arrangement and optimum entry points to the site, but nothing was confirmed in writing.

Below is a summary of discussions and correspondence issued to date:

October 2020 – Preliminary discussions held with ESBN Distribution Engineers which led to the DB8 Energy Concept for the Data Centre being prepared for the development which shows direct 10kV feeders terminating into a metering station located on the site.

4 November 2020: Moffash Limited (as the then owner of the Site, prior to its purchase by Equinix) submitted a Form NC3 Connection Application to ESBN.

19 January 2021: Connection Application registered by ESBN.

15 February 2021: ESBN emailed Equinix to confirm that its application for supply was live in their system, that ESBN would seek approval from EirGrid for this application and that the process would likely exceed ESBN's 90-day quotation timeline for large supply connections.

17 May 2021: Following the expiration of the 90-day timeline, Equinix contacted ESBN for an update on the application. ESBN responded by email on the same date to note that EirGrid would need to undertake a network study in order to confirm the appropriate connection method and that this could take several more months.

26 May 2022: Equinix received an email from ESBN advising that all connection applications had been paused following the publication of the Commission for the Regulation of Utilities ("CRU") Direction to the System Operators related to Data Centre grid connection processing (CRU/21/124) (the "CRU Direction"). ESBN noted that they would advise all applicants how to move forward with applications once ESBN received direction from EirGrid and the CRU.

3 August 2022: Equinix received an email from ESBN confirming that discussions with the CRU had concluded, but that some further points needed to be finalised with EirGrid and the CRU and that a more detailed update would be provided within a few weeks.

7 September 2022: As part of the South Dublin County Council Further Information query, Equinix (via its former Managing Director, Maurice Mortell) and RED Engineering (Neil Clarke) met with the CRU (Liz Kavanagh and Lucy Cradden) to discuss the development and South Dublin County Council Request for Further Information in relation to the enquiry to "provide correspondence from the Commission for Regulation of Utilities/Eirgrid that connection is feasible and the timeline for the connection, as well as details of any consultation undertaken with these bodies". As detailed in the reply to the South Dublin County Council Request for Further Information, the CRU advised that due to the fact the development does not have a utility power connection, they would be unable to assess compliance with the CRU Direction. In this particular case, the CRU advised that if the Site does not have a power supply, then the Equinix could apply for a license authorising the power plant to be constructed and to generate power.

26 May 2023: Equinix met via Microsoft Teams with ESBN (Pauric McEvoy & Mark Kelly) to discuss and understand the current status of the DB8 Application. ESBN stated a letter had been issued to Moffash Limited rejecting the application on 3 May 2023.

1 June 2023: Equinix received the ESBN Refusal Letter on this date. This ESBN Refusal Letter simply notes as follows: *"The application cannot be accepted as the proposed site is within an area that has been deemed to be constrained by EirGrid."*

As outlined above since the application and Further information was submitted for the proposed OSPG development we have been informed that the site is within a constrained area, despite this we are not aware of the underlying basis for this. The ESBN Refusal Letter simply notes as follows: *"The application cannot be accepted as the proposed site is within an area that has been deemed to be constrained by EirGrid."*

1.2 ESBN's Refusal is Invalid

Equinix have reviewed Section 34(6) of the Act and the CRU's Section 34(6) Dispute Guidelines (the **"Dispute Guidelines"**) and have set out the grounds on which they believe that ESBN's refusal of the DB8 Application is invalid which include the following reasons:

- ESBN's Failure to provide a connection within a reasonable timeframe;
- ESBN's Failure to Apply CRU Direction Criteria (detailed below);
- ESBN's Failure to Engage with Equinix and Failure to Provide Reasons;
- ESBN's Non-Compliance with the Act.

ESBN's Failure to Apply CRU Direction Criteria

The CRU Direction sets out assessment criteria for the processing of data centre grid connection applications. Under the CRU Direction, ESBN and EirGrid are required to assess applications for data centre connections based on four (unranked) criteria, namely:

1. **Location:** Whether the proposed data centre is located in a constrained or unconstrained region of the electricity system;
2. **Onsite Dispatchable Generation / Storage:** The ability of data centre applicants to bring on-site dispatchable generation (and/or storage) equal to or greater than their demand to support security of supply;
3. **Flexible Demand (Onsite Generation):** The ability of data centre applicants to provide flexibility in their demand by reducing consumption when requested to do so by EirGrid in times of system constraint through the use of dispatchable on-site generation (and/or storage) to support security of supply; and
4. **Flexible Demand (Reduced Consumption):** The ability of data centre applicants to provide flexibility in their demand by reducing consumption when requested to do so by EirGrid in times of system constraint to support security of supply.

It is clear from the ESBN Rejection Letter that ESBN did not consider all four assessment criteria before rejecting the DB8 Application. In particular, the ESBN Rejection Letter only references the 'Location' criterion and contains no reference to the remaining three criteria.

The CRU Direction does afford ESBN some degree of flexibility in respect of the 'ranking' of the assessment criteria. However, there is no basis under the CRU Direction for ESBN to simply disregard particular criteria as it appears to have done so in respect of the DB8 Application. Indeed, the CRU Direction states that ESBN may only terminate a connection offer application where it has ***"considered and applied the assessment criteria in the Direction to an application"*[BMC emphasis].**

Further, the CRU Direction requires ESBN to consider each connection application on its own merits. In this context, ESBN must consider all relevant facts and circumstances in respect of each individual application and it is clear that it has failed to do so in respect of the DB8 Application – contrary to its obligations under the CRU Direction.

The ESBN Refusal Letter simply notes as follows: "*The application cannot be accepted as the proposed site is within an area that has been deemed to be constrained by EirGrid.*"

The Applicant's view is that the failure by ESBN to correctly apply the CRU Direction renders ESBN's refusal of the DB8 Application invalid.

In relation to each of the CRU Direction criteria, Equinix comments are as follows (adopting the numbering above by the CRU):

1. **Location:** We understand from the ESBN Rejection Letter that EirGrid have determined that the location of the Site is constrained. Neither Equinix nor our consultants has access to information (of a technical nature or otherwise) to analyse whether such classification as 'constrained' is appropriate or whether any technical measures could be implemented for the area to be classified as 'unconstrained'.

2. **Onsite Dispatchable Generation / Storage:** The proposed data centre includes provision for both on-site power generation (with a capacity of 10MW which matches the electrical demand load of the data centre) and storage via generators and battery storage. This can be utilised by the network operator to re-enforce the network and enhance security of supply. Additional details of the on-site power generation are included in Section 4(C) below.

3. **Flexible Demand (Onsite Generation):** On-site power generation will be included via generators powered by natural gas (and by any natural gas blended with renewable gas or H2) in accordance with guidance from the CRU. This will allow Equinix to provide flexibility in its demand by reducing consumption when requested to do so by ESBN. The OSPG plant can run efficiently on natural gas and alternative biofuels such as biomethane, hydrogen/natural gas mix or pure hydrogen when Gas Networks Ireland commence distribution. The OSPG plant equipment has been designed to accommodate flexible fuel, should advances be made to the grid in the future as foreseen by GNI.[1] This ensures the plant is future-proofed to align with the evolution of the gas grid and Ireland's wider decarbonisation objectives. Equinix further notes that the use of natural gas as a transitional fuel and the future-proofing of equipment to utilise alternative renewable fuels is in accordance with the criteria set by the CRU in its decision paper entitled "*CRU Direction to the System Operators related to Data Centre grid connection processing*" (Reference CRU/21/124) published on 23 November 2021.[2]

4. **Flexible Demand (Reduced Consumption):** As above.

1.3 Equinix Business Model

It is also important for the Board to be aware from the outset the type of data centre that Equinix is seeking to power in this case is different to the "*Hyperscale*" or "*Single Tenant*" data centres that the general public are more aware of given the media attention that these larger data centres receive.

Data Centres are deemed to be important infrastructure enablers in an open modern economy facilitating digital transformation of Small to Medium Enterprises (SMEs) and associated productivity. Data Centres can be considered as the backbone infrastructure for the digital services that are used every day and help us to sustainably scale innovation and economic growth in an increasingly digital world.

As demand for processing and storing data continues to accelerate as companies move to the cloud and online applications, organisations seek greater digital proximity to their customers. This has resulted in the data centre industry growing rapidly and becoming the foundation of the global Information and Communications Technology (ICT) ecosystem.

The term "data centre" is often broadly applied to rooms or buildings that offer space, power and cooling to house and host servers, compute, storage and other ICT equipment. Modern data centres have evolved from efforts to house ICT components to the need to support thousands of interconnected devices efficiently and effectively.

Currently, there are two widely accepted ways to classify data centres:

1. **Enterprise, Single Tenant or Hyperscale and;**
2. **Colocation or Multitenant**

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[1] Please see https://www.gnvmagazine.com/en/renewable-gas-at-forefront-of-gas-networks-irelands-2050- plan/.

[2] "CRU Direction to the System Operators related to Data Centre grid connection processing" dated 23 November 2021 (Reference CRU/21/124), see page 30

Enterprise, Single-Tenant or Hyperscale

In the case of an enterprise or single-tenant data centre, one business owns or controls the servers and peripherals and may own the facility itself. Many of these companies are in cloud, data or digital content industries and require massive capacity and compute power. Historically, Enterprise data centres have been developed near multitenant or colocation data centres, however increasingly locations further away from the connectivity dense metros, in remote areas where land and power are more accessible, are under consideration. The new remote cloud-compute campuses are often in need of much greater quantities of power and in a shorter time frame than retail colocation facilities.

Colocation or Multitenant

The permitted DB8 application proposed by Equinix offers a fundamentally different value proposition to single-tenant data centre operators by offering what is known as retail colocation or International Business Exchanges (IBX).

These facilities host many tenants that collocate their IT equipment in individual secure cages that are in proximity to various digital services, customers, vendors or mission partners. Hundreds of clients may be housed in the facility, allowing extensive interconnection with partners, networks, and service providers. Colocation facilities allow everyone, from start-ups and smaller firms to Fortune 500 companies, to house and power their IT infrastructure in an energy- and cost-efficient, secure, and professionally managed environment. This offers greater flexibility for companies to scale and adjust their data deployments according to business needs.

These facilities uniquely allow customers to "peer" or directly connect enterprise-to-enterprise. Peering enables enterprises to exchange data directly, bypassing the public internet. This is done using physical cross connects (fibre-optic cables) or software-defined networking (SDN) to facilitate private data transfer from one entity to another. Direct interconnection improves speed, performance, security, cost and latency. Equinix is the world's leader in digital interconnection, with over ten thousand customers and over approximately half a million enterprise to enterprise connections. This uniquely dense ecosystem is part of the reason why companies from around the world want to collocate inside of Equinix IBXs.

Additionally, colocation data centres allow customers to take their on-premises IT infrastructure, which is often in older buildings that were not designed to be data centres, such as offices or warehouses, and move them into modern and highly optimized data centres. Not only does this improve security and performance, it also leads to a reduction of total energy used. Almost half of all global data centres are still on-premises, with Power Usage Effectiveness (PUE)[3] ratios often multiple times higher than in modern purpose built data centres (a 2018 EU funded study indicated that public on-premises data centres had a PUE of 1.6 at best, but often went as high as 5, 6 or even 7; Equinix's European portfolio has an average PUE of around under 1.4).[4] Multitenant data centres typically take IT infrastructure and workloads that were already present in the region (but diffusely), and concentrates them in an energy efficient environment, thereby reducing the total energy consumed for the same workload.

The design of the data centre incorporates several energy efficiency measures to reduce its carbon footprint. The multi-storey nature of the development creates a compact and efficient development that utilises the existing site services and road infrastructure. Supplementary power (to provide the administrative areas of the data centre) will be provided by photovoltaics roof panels on the data centre building and above the car parking areas and the data centre development will also include low-energy

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[3] Power usage effectiveness (PUE) is a ratio that describes how efficiently a computer Data Centre uses energy and specifically, how much energy is used by the servers in the white space in comparison to the power required by the chillers and other building systems that support the white space.

PUE = Total facility energy/IT Equipment Energy

[4] The 2018 EU study can be accessed here: https://cordis.europa.eu/project/id/649972/results

lighting, sensor lighting controls, EV charging points in the parking area and variable speed pumps. Premium efficiency motors will also be specified on all equipment. In the data halls themselves which contain the specialist server equipment, all data storage and processing engineering service installations in the proposals have been considered in detail from an energy perspective.

Equinix's IBXs, which are typically on the much smaller end for data centres (being less than 10MW), need to be located within metros and close to their end users for both reasons of latency and so that customers can have quick access to their own private equipment when needed. Unlike other types of data centres this is part of the core of our business model for retail colocation. There is very strong customer demand for Equinix's unique IBX value proposition in Dublin and the company is keen to work with the government, energy companies and grid operators in support of Ireland's continued prosperity, digital transformation, and climate targets.

1.3.1 Equinix and Dublin

The presence of Equinix IBX has been shown to be of immediate economic benefit to the cities in which they operate. Equinix offers optionality for customers who want to choose which network provider or cloud services provider to connect to. In addition, energy efficiency gains from moving workloads from on-premises to colocation, Equinix's customers benefit most from direct connectivity with other businesses, providing:

- Improved connectivity and reduced latency which enables innovative services like foreign exchange trading and artificial intelligence (AI) computing;
- Dedicated bandwidth with highest throughput meaning large capacity and increased reliability offering significant revenue generation for businesses;
- Significant optionality by offering companies the ability to choose between a number of different vendors for their data and digital strategy;
- Increased resilience by leveraging the diversity of the ecosystem to be less reliant on any single service provider;
- Unparalleled security through direct physical connections that do not cross over the public internet; and
- Cost-effectiveness as directly connecting with other partners reduces to need to pay an intermediary transit provider for connectivity

Dublin has a robust network infrastructure, including high-speed fibre-optic and subsea cables, making it a significant hub for data centres. Moving a data centre away from Dublin presents challenges such as increased latency, higher connectivity costs, and the need to locate a skilled workforce in remote areas. Moreover, regulatory considerations and potential service disruptions during the transition should be taken into account. Dublin's established technology ecosystem also adds complexity to relocation decisions.

Major NSPs or ISPs choose to locate in Dublin due to its strategic position as a connectivity hub with access to subsea cables, Internet Exchange Points, and a large market in Europe. Dublin offers a stable business environment, skilled workforce, and proximity to data centres, making it an attractive destination for establishing network infrastructure and serving customers efficiently.

Dublin, has become a significant hub for data centres and internet infrastructure due to several key factors. Below is an overview of the network interconnections in Dublin and why moving data centres away from this location might not be a simple task:

Specifically looking at the attractiveness and benefits of Dublin for Equinix's customers:

- **Connectivity and Network Infrastructure:** Dublin has a robust and well-developed network infrastructure, including high-speed fibre-optic cables and extensive network interconnections. Major telecommunication companies, internet service providers (ISPs), and content delivery networks (CDNs) have established a presence in Dublin to take advantage of this connectivity.
- **Subsea Cables:** Dublin's location on the eastern coast of Ireland makes it an ideal landing point for multiple subsea fibre-optic cables connecting Europe and North America. These subsea

cables play a crucial role in international data transmission and reduce latency for global internet traffic.

- **Internet Exchange Points (IXPs):** Dublin hosts several Internet Exchange Points, such as the INEX (Internet Neutral Exchange), which allows different networks to interconnect and exchange Internet traffic efficiently. IXPs enhance network redundancy, reduce latency, and improve overall internet performance.
- **Proximity to Customers:** Being located in Dublin allows data centres to be closer to their customers in Europe, facilitating lower latency and faster data delivery for local users.
- **Peering Opportunities:** The presence of multiple Network Service Providers (NSPs), ISPs, and content providers in Dublin creates ample peering opportunities. This means that networks can directly exchange traffic without relying on third-party transit providers, leading to faster and more efficient data routing.
- **Cloud Connectivity:** Dublin's network interconnections enable data centres to establish robust connections with major cloud service providers. This direct access to cloud services enhances data centre capabilities and provides scalable solutions for businesses.
- **Network Redundancy:** Dublin's well-connected network infrastructure offers data centres the advantage of network redundancy. Multiple diverse network paths and options for transit providers ensure high availability and minimal downtime.

In summary, Dublin's network interconnections play a critical role in facilitating seamless data transmission and internet connectivity between Europe and North America. The presence of subsea cables, Internet Exchange Points, data centres, and major NSPs/ISPs make it a key location for network operations, enabling businesses to efficiently serve their customers and access global markets.

There are several challenges and reasons why it might not be a simple task for a data centre to stop building in Dublin and move to a more remote location:

1. **Network Latency and Performance:** Moving to a remote location could result in increased network latency and slower data transmission. Customers in Dublin and nearby areas may experience reduced performance, leading to dissatisfied users.
2. **Connectivity Costs:** Establishing network connectivity in remote areas can be more expensive due to the need to build new infrastructure or use less reliable connections. The cost of transmitting data between remote locations and major internet hubs might increase significantly.
3. **Regulatory and Legal Considerations:** Different regions may have varying regulations and laws related to data privacy, environmental impact, and infrastructure development. Adapting to these changes can be time-consuming and costly.
4. **Disruption to Services:** Moving a data centre to a new location involves significant downtime and potential service disruptions for customers during the transition process.
5. **Investment and Infrastructure:** Data centres are complex facilities that require substantial initial investment and infrastructure setup. Moving to a new location would entail replicating or building entirely new infrastructure, adding to the overall cost.
6. **Ecosystem and Partnerships:** Data centres in Dublin often benefit from an existing ecosystem of technology companies, suppliers, and partners. Relocating would mean rebuilding these partnerships and collaborations.

Equinix's enterprise customers are from a wide cross-section of the local city economy. A recent study by Equinix identified the following sectors as benefitting most from Equinix presence: in Dublin:

1. **Technology Companies:** Dublin's interconnection networks attract a significant number of technology companies, including both established giants and innovative startups. These companies leverage interconnection to ensure reliable and fast data transfer, host applications, and provide cloud services.
2. **Financial Institutions:** Dublin's status as a financial hub draws various financial institutions, such as banks, investment firms, and insurance companies. They use interconnection to establish secure and high-speed connections for financial transactions, data analytics, and communication with global markets.

3. **Telecommunications Providers:** Telecommunications companies play a crucial role in the interconnection ecosystem, offering the infrastructure and connectivity needed for seamless communication across the city and beyond.
4. **Healthcare and Life Sciences:** Hospitals, medical research institutions, pharmaceutical companies, and healthcare providers rely on interconnection for efficient data sharing, telemedicine, medical imaging, and research collaboration.
5. **Educational and Research Institutions:** Universities, research centres, and educational institutions utilize interconnection to facilitate academic collaboration, online learning, research data sharing, and resource access.
6. **Government and Public Services:** Government agencies and public services leverage interconnection to enhance citizen services, streamline administrative processes, and ensure secure communication across different departments.
7. **E-commerce and Retail:** E-commerce platforms, retail chains, and logistics companies use interconnection to manage online transactions, inventory management, order processing, and customer engagement.
8. **Manufacturing and Supply Chain:** Manufacturing companies benefit from interconnection for real-time monitoring of production lines, supply chain optimization, and data-driven decision-making.
9. **Entertainment and Media:** Entertainment companies, including streaming services, gaming platforms, and media production studios, rely on interconnection to deliver high-quality content and engage audiences.
10. **Energy and Utilities:** Interconnection supports the energy sector by enabling smart grid management, remote monitoring of energy infrastructure, and data analysis for efficient energy distribution.
11. **Non-profit and Community Organizations:** Various non-profit organizations and community groups utilize interconnection – INEX is a good example of this.
12. **Transportation and Logistics:** Transportation companies, shipping firms, and logistics providers rely on interconnection for real-time tracking, route optimization, and supply chain management.

In Ireland, Equinix provides services to a portfolio of +250 customers of which the Enterprise segment covers 38%, capturing critical facilities such as: financial services, health care and public sector. Ireland has held a unique position as an attractive location for international businesses, in particular large multinationals. The influence of international business is critical to our economic growth and success, the top 10 multinationals contributing 57% of all corporation tax in Ireland in 2022, as well as directly employing 275,384 people in 2021[5][6].

As these businesses transform to compete and survive in an emerging digital economy there is an increased demand to support this transformation through digital infrastructure. This accelerating business transformation and digital infrastructure are mutually inclusive, they are fully dependent on each other. Digital infrastructure is the foundation for all hybrid cloud services and is underpinned by colocation retail data centres, particularly Equinix's interconnection dense IBX data centres, which host the computing services of the world's leading pharmaceutical, finance, technology and service companies.

Due to constrained power capacity in Dublin, we understand that several multinationals, many of which are or have the potential to be large employers in Ireland, have recently redirected these new services to other European countries as they are unable to expand their digital solutions in Ireland. More recently we have also seen a dramatic increase in demand for AI infrastructure, a key element of the Irish

[5] 57% of corporation tax returns in 2022 paid by 10 firms (rte.ie)

[6] gov.ie - Highest increase in FDI employment in a single year - IDA Ireland (www.gov.ie)

Governments 'Digital Ireland' strategy, from Irish domiciled organisations and start-ups. We are now seeing these companies looking to deploy new AI services and related businesses outside of Ireland due to constraints in the local Data Centre market.

For further context on this matter, we ask the Board to consider that the Equinix model is directly comparable to the Government's approach to the new State Data Centre in Celbridge, Co. Kildare. Currently, there are over 100 disparate Government server rooms and small data centres. The new State facility recognises the opportunity to replace these while delivering a step change in energy efficiency, functionality and cyber resilience. A shared State Data Centre will allow for more secure, greener operations that will future-proof the reliable delivery of essential services to the public.

Equinix's strategy of pooling resources in a facility that will operate the latest free cooling technology as demonstrated by the states latest data centre is equally applicable and obtained in Equinix colocation data centres where the efficiencies associated with hosting multiple customers are realised. Free cooling reduces the energy consumed by utilising the ambient outside air to provide cooling (when the ambient condition is lower than the internal temperature required) rather than utilising a refrigeration cycle. Where the refrigeration component of the chillers are not required to run, this will be at least twice as efficient as the existing public service server rooms and data centre facilities will therefore reduce power usage, power costs and pressure on electricity supply, in particular in Dublin city centre.

The nature of the permitted Data Centre which this appeal is seeking to power is a fundamental consideration for the Board's assessment. We trust that the Board will recognise the strategic importance of the permitted Equinix facility at a national economic level and grant permission for the OSPG accordingly.

We refer to the diagram below which illustrates the differentiation between the Equinix business model and other Data Centre Operators in the industry.

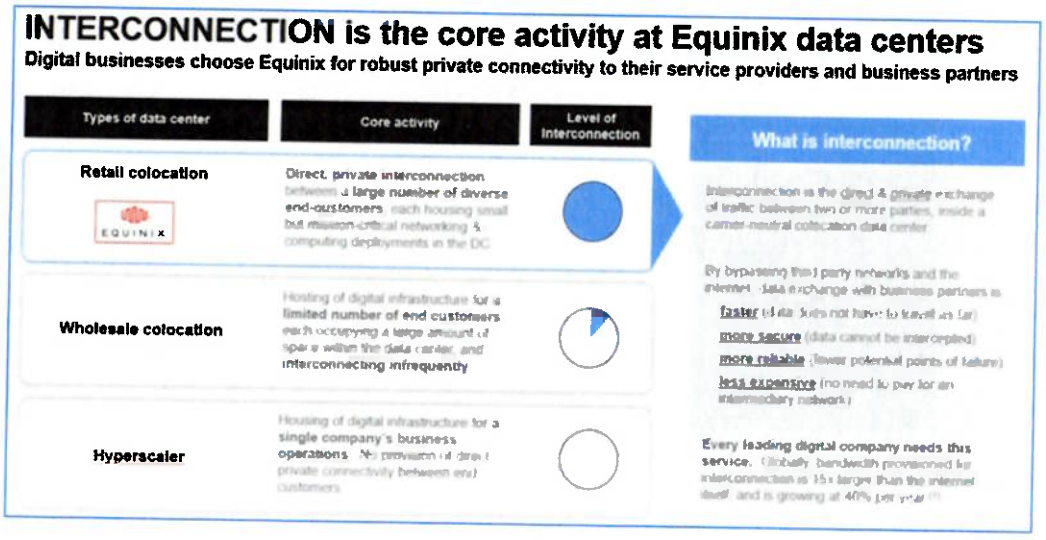


Figure 1 - Equinix Business Model

2 Site Context

2.1 Subject Site

The site area measures to approximately 2.65ha and is located on a corner at the entrance to Profile Park Business Park immediately bounded to the north by the Nangor Road and to the west by Profile Business Park access road, known as Falcon Avenue. The site is located within the administrative area of South Dublin County Council.

The site is free from development and is characterised by the hedgerow and ditch separating the site from Grange Castle Golf Club lands to the east and south, which will be retained and reinforced as part of the proposal. The site is largely greenfield in nature with some hardcore and bare ground visible in some areas. The ground levels within the site area appear flat however with a gradual fall from north to south. The existing site levels differ by approximately 2m between the levels along the north boundary (75.5 O.D.) and levels along the existing dry ditch along the south boundary (73.24-73.5 O.D.).

The site has been used in the past for agricultural use (before the Profile Business Park has been built in 2006).

An ESB wayleave and SDCC Watermain wayleave are located within the north and west of the site running parallel with Falcon Avenue and Nangor Road. No above ground structures are proposed at these locations.

Figure 2 – Subject Site identified with red outline

2.2 Surrounding Context

Profile Park Business Park is situated 2km west of Clondalkin village on the outskirts of Dublin City (10km south west of the city centre), approximately 16 km south of Dublin International Airport. The Business Park lies between the M4 and M7 and is proximate to the M50.

The nearest residential dwelling is located adjacent to the Circle K Filling Station approximately c.55m from the sites northern boundary. Two detached units to the west of the site are either vacant/derelict and or planned for demolition. There are some residential areas to the east at Oldcastle Drive, including traveller accommodation c.600m distant. Casement Aerodrome is located c.800m south of the subject site. The site is approximately 5km west of the M50. There is a Quality Bus Corridor QBC route on the Nangor Road and Profile Park provides feeder bus services to connecting public transport options including LUAS.

The site has formed part of the Profile Park Business Park since its establishment in the year c.2006 which is a 100 acre (40.5 Ha), private business park. The surrounding land uses comprise of similar large industrial, manufacturing and data storage buildings that are similar to the permitted and proposed development that this Appeal relates to. Existing tenants within Profile Park and the surrounding business and enterprise parks include Google, Microsoft, Digital Realty Trust, and others. Immediately adjacent to Profile Park is the Castlebaggot 110 / 220 kV substation which provides electrical transmission connectivity to the national electricity transmission grid system. The Figure below illustrates the surrounding land uses which includes existing and permitted developments in Profile Park.

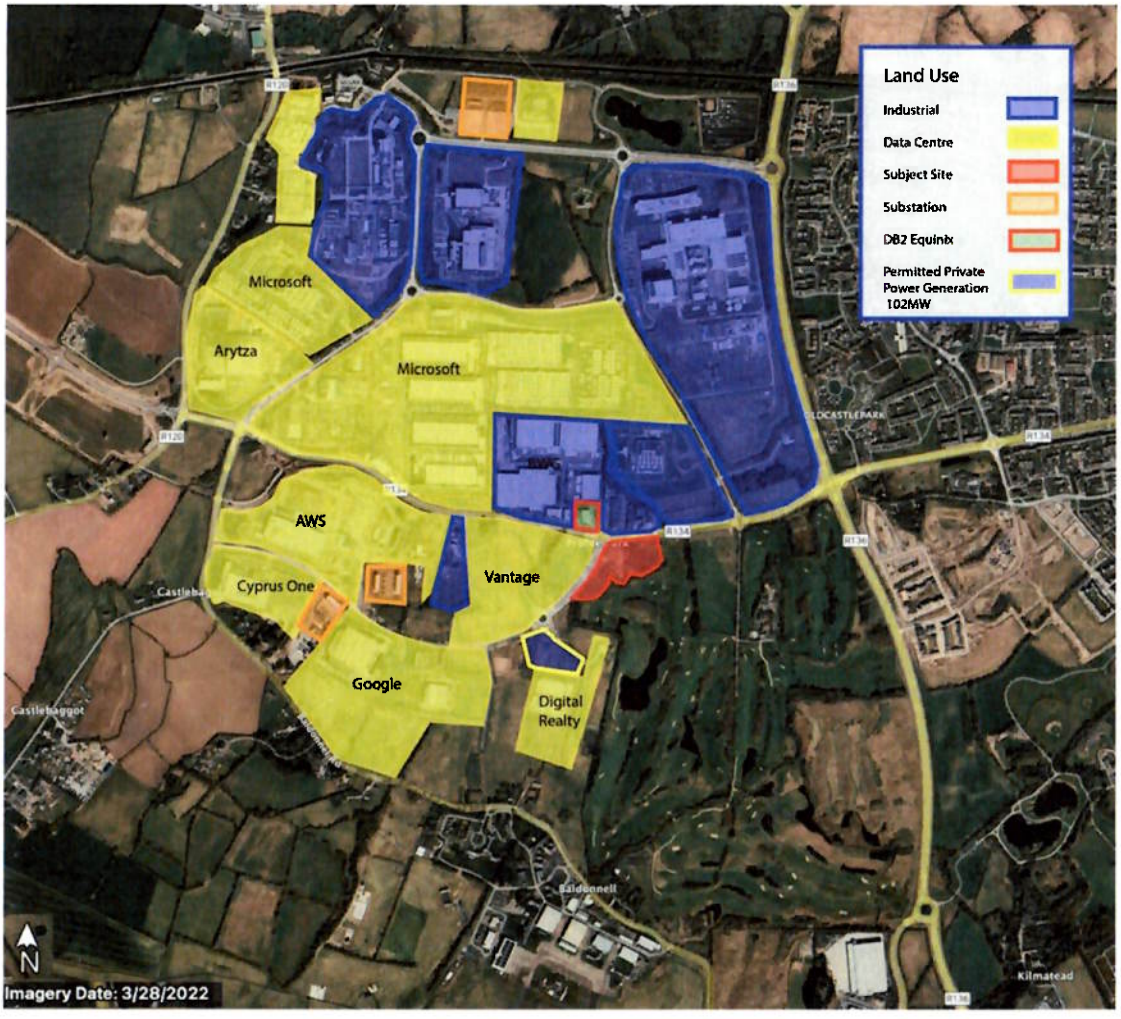


Figure 3 – Surrounding land uses within profile park Subject Site identified with red outlin

3 Proposed Development

The proposed development contributes towards the achievement of the Zoning Objective and Vision Statement for EE zoning and is in accordance with other relevant policies and objectives of the South Dublin County Development Plan 2022-2028 and the Ministerial Direction issued on the 18 November 2022 which overturned the ban in the SDCC Development Plan 2022 -2028 and directed SDCC to "reinstate data centre use class as an 'open for consideration' use class in the REGEN, Enterprise and Employment (EE) and Major Retail Centre (MRC) zoning objectives".

Having regard to the nature and design, it is considered that the proposed OSPG development is an effective and appropriate use for the site as it would power the permitted data centre on site which would be an effective and appropriate use for the site.

We refer to the Planning Application Report, submitted at application stage, which in summary notes the following in relation to the proposed development:

- The proposal makes the most efficient use of the site. The multi-storey nature of the permitted data centre and proposed OSPG creates a compact and efficient development that utilises existing site services and road infrastructure.
- The Overall Project is appropriately located in South West Dublin with excellent connectivity to the N4, N7 and M50. Public transport services operate in the area with several bus services stopping to the east of the site on the R134 (Castle Grange Stop c.750m/10 min walk distant) and Clondalkin/Fonthill Rail Stop c.3.4km distant.
- The proposal will contribute to the emerging digital infrastructure of the area that helps to support a strong Irish economy through its enterprise, skills and innovation sectors.
- The proposal will continue to maintain high quality international connectivity, that Ireland is quickly becoming renowned for.
- Renewable technologies include use of photovoltaic panels, heat pumps and provision of waste heat building to facilitate future connection to a district heating system.
- The proposed development (notably the OSPG Building and associated flues) accords with the height restrictions relating to Casement Aerodrome, having regard to precedent examples set by permitted developments in the wider Grange Castle Area.

Figure 4 – CGI of Permitted Data Centre DB8 Ref SD21A/018

4 Planning application Process

4.1 Planning Application Process

We have taken this opportunity to set out for An Bord Pleanála, a summary of the extensive planning process to date for the Overall Project which includes the permitted data centre development under Ref. SD21A/0186 and the proposed OSPG development which is subject of this appeal under Ref. SD22A/0156.

For the convenience of the Bord we have included the definition of the "Overall Project" which was assessed in the EIAR submitted as part of the Clarification of Further Information which consists of the 2 no. developments described in summary below:

1. The Proposed Development subject of this appeal under SDCC Ref. SD22A/0156 includes modifications to the permitted Data Centre granted under SDCC Ref. SD21A/0186 and the construction of an Onsite Power Generation Plant OSPG and associated site works. (Note: the Proposed Development (no. 1) is a subset of the Overall Project (no. 2)).

2. The Overall Project which includes the granted development under SDCC Ref. SD21A/0186 comprising of a Data Centre Development and associated site works and the proposed amendments to it as per application SDCC Ref. SD22A/0156 - described in Section 2.3.2 of the EIAR.

Permitted Data Centre DB8

Table 1 - Process of DB8 Application Ref. SD21A/0186

DB8 – Ref. SD21A/0186		
1.	Planning Application Lodged	05/07/2021
2.	Further Information Requested	30/08/2021
3.	Further Information Provided	25/02/2022
4.	Permission Granted	05/05/2022

Proposed On Site Power Generation

Table 2 - Process of Proposed OSPG Application Ref. SD22A/0156

OSPG – Ref. SD22A/0156		
1.	Planning Application Lodged	30/05/2022
2.	Further Information Requested	25/07/2022
3.	Further Information Provided	21/10/2022
4.	Clarification of Further Information Requested	17/11/2022
5.	Clarification of Further Information Provided	26/04/2023
6.	Permission Refused	08/08/2023

4.2 Planning Application Lodged – OSPG SD22A/0156

On 3rd May 2022 an application was lodged for the development of an Onsite Power Generation Plant to power the permitted development under SD21A/0186.

The proposed development under SDCC Ref. SD22A/0156 consisted of modifications to the permitted Data Centre under Ref. SD21A/0186 and development of On Site Power Generation and associated works.

- Reconfiguration, alterations and amendments to the previously permitted scheme and Data Centre building under Ref. SD21A/0186 which include the following:
    - Omission of third floor level in the office block (removal of approx. 366sq.m of GFA the omission of the third floor has reduced the entire building to a 3 storey development.)
    - Alterations to the floor levels: floor levels within the admin area of the Data Centre have been changed in order to provide consistency throughout the building. One storey of the admin block has been omitted and floor to floor height changed to 5.3m in line with heights in the data halls. We refer to figure 2.5 below for an extract of this drawing that illustrates the alterations to floor levels.
    - parapet height increase of front of house to c.16.8m,
    - Increase of single storey Loading Dock GFA by approx. 60sqm
    - provision of storage at second floor level in lieu of relocated internal generators to the external generator yard and associated elevational alterations.
    - Extension of loading dock at ground floor level by c.60sqm in area with minor height increase to c.5.3m.
    - Alterations to the permitted generator plant yard to the north of the Data Centre to include removal of 4 no. internal generators and plant rooms spaces from 2nd floor and provision of same within the Generator Yard – Overall increase of number of external gens from 5 no. to 9 no. and increase of number of external electrical plant rooms from 4 no. to 8 no. All previously permitted free standing fuel tanks are now removed. This also includes increase of the yard size, rearrangement of the yard layout. Overall increase of external electrical plant rooms GFA is 49.66sqm.
    - Removal of 3 no. air plenums to the front (north) elevation and provision of screening to generator flues in lieu of omitted plenums.
    - Alterations at roof level to include removal of 2m high gantry screening.
    - Reconfiguration of plant within the permitted chiller plant yard to the south of the Data Centre.
    - Removal of 1 no. sprinkler/water tank and removal of stairs and door to the side of the waste compound.
    - Reconfiguration of car parking and motorcycle spaces and removal of 1 no. accessible spaces to 64 no. total number of car parking spaces .

- The proposal also includes provision of on-site gas power generation compound OSPG (c.2,604sqm in area) in the area which was previously reserved for a future Data Centre development under Ref. SD21A/0186 located to the south west of the now permitted Data Centre under Ref. SD21A/0186.
    - The OSPG compound comprises:
        - 7 no. modular plant rooms (totalling c.180sqm in area),
        - 10 no. gas fired generators and associated flues c.14.7m high,
        - gas skid, associated modular plant, boundary treatment surrounding the compound c.6.5m high and
        - 2 no. vehicular access points including general and emergency access.
- All associated site development works, services provision, drainage works, access, landscaping and boundary treatment works.
- No buildings are proposed above the existing ESB and SDCC wayleaves to the west and north of the site.

- The overall Gross Floor Area of the development is reduced by c.44sqm to c.9,795sqm from previously permitted under SDCC Reg. Ref. SD21a/0186.
- This application under SD22A/0186 was accompanied by a Natura Impact Statement.

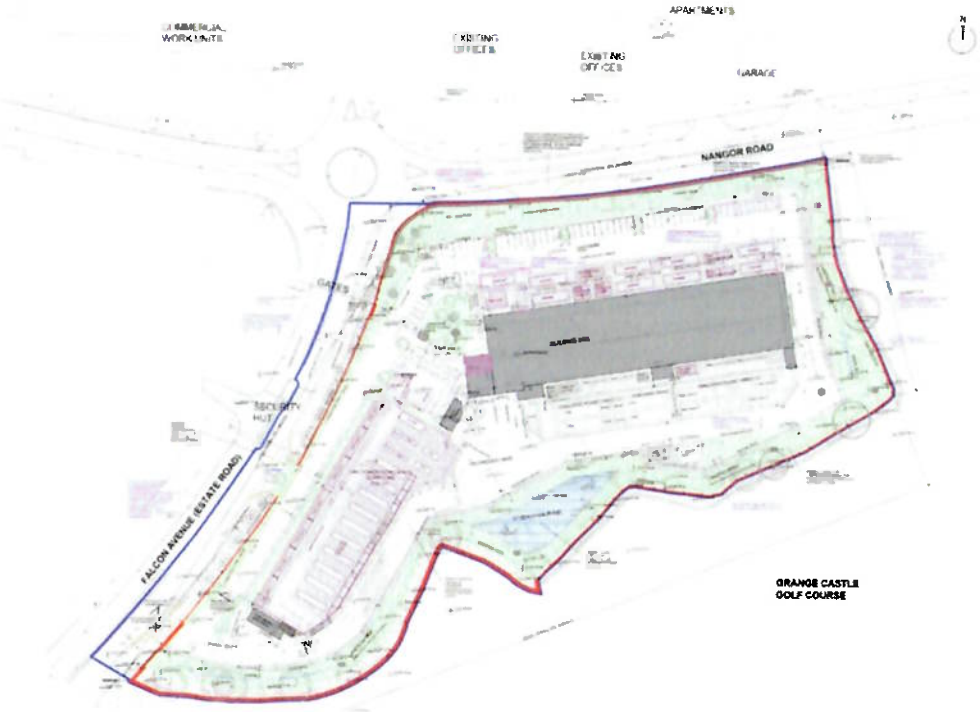


Figure 5 - Site Layout Ref. SD22A/0156 illustrating proposed OSPG and Permitted Data Centre

4.3 Further Information Requested

The Planning Authority requested further information on the 25/07/2022 which in summary requested the following information.

Table 3 - Summary of Further Information Requested

OSPG – Ref. SD22A/0156	
Item No.	**Summary of Further Information Requested**
1.	Set out how the proposed development is in keeping with the Land Use Matrix of the Development Plan.
2.	Provide details in relation to the power generation on site in terms of the appropriateness of the proposal for an on-site gas plant based on national, regional and local policy in terms of energy requirements and climate change. Consider incorporating a portion of renewable energy generation, provide details of the future proofing of the Data Centre and OSPG to adapt to alternative energy supply, provide the long term plan for the OSPG when the Data Centre is connected to the grid and provide details of the connection to the surrounding area and national gas grid.
3.	Engage with the Property Management Branch of the Department of Defence in terms of the construction and operation of phases of the development to assess any impact on the operation and function of the Casement Aerodrome and provide a letter of consent from the Department of Defence.
4.	Provide correspondence from the Commission for Regulation of Utilities/Eirgrid that connection is feasible and the timeline for the connection, as well as details of any consultation undertaken with these bodies. The applicant was also requested to provide any details of discussions with the EPA.

5.	Justify why a 10 year permission is necessary for the proposed development.
6.	Provide additional details in relation to the design of the alterations to DB8 including visuals and details of materials and details of the OSPG design including revised elevations
7.	Submit a report and drawing showing where each catchment is draining to and show how water flow is controlled and what the maximum discharge rate is for each catchment in the development. Submit a report and drawing to show what flood risk there is for the site.
8.	Undertake a wider Environmental Impact Assessment Screening Report and if necessary undertake a full Environmental Impact Assessment.
9.	Provide a report demonstrating that the proposed development is in accordance with the South Dublin County Development Plan 2022-2028.

The Applicant has made every attempt to address all items raised as part of the Request for Further Information Items which are summarised below.

Table 4 - Summary of Further Information Responses

OSPG – Ref. SD22A/0156	
Item No.	**Summary of Further Information Responses**
1.	The OSPG is intrinsically linked to the permitted Data Centre development and is considered an associated use. Data Centre is clearly defined under its own separate use under the Development Plan as: *"A Data Centre is a physical facility composed of networked computers and storage that business and other organisations use to organise, process, store and disseminate large amounts of data."* The proposed development cannot therefore be considered a public service, as outlined further in the sections below.
2.	The rationale for the OSPG was set out in a report prepared by RED Engineering, in addition this report had regard to alternative power sources that were assessed by the Applicant. Details of the Applicant's correspondence with key stakeholders including the ESBN connection application form, History of communication with ESBN and the GNI application form and connection details were also submitted as part of this response. Despite the Applicant applying for connection to the grid 22 months prior to this stage, there had been no confirmation from ESBN regarding the technical and commercial details of power supply connection to the permitted Data Centre development. The Applicant was in discussions with multiple customers, tenants, investors and the appointment of a Contractor who was awaiting to commence construction and has taken the initiative to progress the project without an ESBN power supply and construct an OSPG at the Applicants own expense. The purpose of the plant is to generate power until such a time that ESBN can make a formal technical and commercial proposal to supply power to the site.
3.	The additional flues were discussed with various individuals at Baldonnell Airport and The Department of Defence – Property Management Section in August and September 2022. Correspondence received from the Department of Defence letter dated 4 October 2022 was submitted for this response. Having regard to the recommendations of the Department of Defence, Thermal Plume Modelling was undertaken by AWN to determine the potential impact of the plumes associated with the OSPG on aircraft in the vicinity of Casement Aerodrome. The results indicated that construction and operation phases of development and potential impact on flight procedures and communication, navigation and surveillance equipment have been assessed and are considered acceptable.
4.	The Applicant and Consultant Team met with the Commission for Regulation of Utilities (CRU) and presented the case for consideration. The CRU advised that due to the fact the development does not have a utility power connection they are unable to assess compliance with the CRU Directives for Data Centres, but they advised that if the site does not have a power supply, then the Applicant can apply for a license authorising the power plant to be constructed and to generate power. In order to obtain these licenses and this CRU approval, planning approval from SDCC is required.

	We submitted a summary of discussions and correspondence issued to date with ESBN.
5.	A 10 year permission is required to allow the OSPG equipment to be installed in phases to match the power load increase of the permitted data centre, once operational. All site infrastructure works, including roads, drainage, facades and screening of the proposed OSPG development will be completed as part of the initial phase of the works which is anticipated to be completed within three (3) years of the development being permitted by SDCC. The only element that will be deferred from the initial installation phase will be a number of the OSPG equipment units (gas engines and associated ancillary electrical equipment).
6.	Photomontages were prepared submitted to show additional views of the permitted Data Centre and OSPG in addition to the type of material proposed for the structures.
7.	A report and Drawing No. DB080-PIN-00-ZZ-DR-C- PLAN-1295 Rev P04, was submitted prepared by Pinnacle Engineers. The report details the greenfield run-off rate calculations for each surface water catchments associated with the proposed development.
8.	An updated EIAR Screening Statement was prepared by Malone O'Regan and Cumulative Air Quality Assessment prepared by AWN which was submitted as part of this response.
9.	In response to Item No. 9, we referred to the Draft Ministerial Direction issued by the Minister of State at the Department of Housing, Local Government and Heritage. The Minister's recommendation made to him by the Office of the Planning Regulator under Section 31AM(8) of the Planning and Development Act 2000 (as amended), has notified South Dublin County Council of his intention to issue a Draft Direction to the South Dublin County Development Plan 2022-2028. Section 31(4)(c) of the Planning and Development Act 2000, states: "(c) those parts of the plan that by virtue of the issuing of the notice under this subsection **shall be taken not to have come into effect**, been made or amended under subsection (6)"**[BMC emphasis]** In this instance, the use class for data centre shall revert to 'open for consideration' under the EE zoning for the site. All applications should be considered on a case-by-case basis. We reiterated that permission already exists on the site for a data centre development – SDCC Ref. SD21A/0186 refers. In the absence of a grid connection from ESBN, an alternative on-site gas powered generator is required to power the permitted facility.

4.4 Summary of Clarification of Further Information

The Planning Authority requested Clarification of further information on the 17/11/2022 which in summary requested the following information.

Table 5 - Summary of Clarification of Further Information Requested

OSPG – Ref. SD22A/0156	
Item No.	**Summary of Clarification of Further Information Requested**
1.	Demonstrate how the proposed amendments to the development proposed to SD21A/0186 are compliant with the new SDCC Development Plan 2022-2028, Policy EDE7 and its associated objectives.
2.	Provide an assessment of the appropriateness of the proposals to power the permitted Data Centre by gas instead of electricity (as previously permitted) in terms of national, regional and local policy in terms of energy requirements and climate change. Set out any details of proposed on site renewables, in light of the requirements of Policy EDE7. Demonstrate that there is sufficient capacity within the relevant water, wastewater and electricity network to accommodate the use proposed, in line with EDE7.
3.	Undertake an Environmental Impact Assessment of the Proposed Development

4.	Demonstrate how the proposed amendments to the development are compliant with policies of the SDCC DP 2022-2028 relating to the design of large scale proposals.

The Applicant has made every attempt to address all items raised as part of the Clarification of Further Information Items which are summarised below.

Table 6 - Summary of Clarification of Further Information Responses

OSPG – Ref. SD22A/0156	
Clarification of Item No.	**Summary of Clarification of Further Information Responses**
1.	Outlined how the proposal complies with the Zoning and Space Extensive Land Use policy of the South Dublin Development Plan. Outlined what Energy Efficiency measures were incorporated on site, what renewable energy systems were considered, outlined the efficiency of the Data Centre and the commitment that will be made by the applicant to in relation to CPPAs.
2.	Outlined how the proposal complies with the policy documents listed in the Clarification of Item no. 2, how the proposal is adaptive for alternative energy supply, outlined the capacity of infrastructure and services and provided the long term plan and scenarios for the OSPG given the uncertainties with a connection to the grid.
3.	A comprehensive EIAR has been carried out and provided for the OSPG and the Permitted Data Centre.
4.	Outlined the design of the development, justified the Green Space Factor Score and incorporated additional EV charging spaces to comply with new DP requirements.

4.5 Planning Authority Decision

The Planning Authority issued their decision to refuse permission on **8 August 2023** for 1 no. reason. The applicant was extremely disappointed and disappointed by the decision issued, given the positive engagement and responses by the applicant to address the Further Information requests. The nature of the reasons of refusal are difficult to understand given the level of detail and work carried out in the Applicant's response to the Further Information Requests which included a comprehensive Environmental Impact Assessment. Our detailed response to this refusal by South Dublin County Council is detailed in our Grounds of Appeal.

We respectfully submit that this reason for refusal does not stand up to closer scrutiny and that the main tenets of the scheme are sound given the unique circumstances in relation to grid connection and gas connection associated with Data Centre developments.

5 National Policy

5.1 Role of Data Centres in Ireland's Enterprise Strategy – July 2022

This Statement seeks to enable the 'twin transitions' of digitalisation and decarbonisation of our economy and society. The Government is of the opinion that these transitions can – and must be – complementary. For this to happen, digital and climate change policies need to move in tandem and this Statement sets out how this will be achieved in respect of Data Centres.

This Statement highlights the CRU Decision (CRU/21/124) that new Data Centre connections are required to have on-site generation (and/or battery storage) that is sufficient to meet their own demand and, to assist in full decarbonisation of the power system, this generation should also be capable of running on renewably sourced fuels (such as renewable gas or hydrogen) when supplies become more readily available. **[BMC emphasis]**

The proposed development complies with the Government's Statement **Role of Data Centres in Ireland's Enterprise Strategy** as follows:

The Government has released relevant Statements that contribute to the Strategic Policy Framework in Ireland and confirm the Government's desire for a plan-led approach to Data Centres.[7]

This Statement sets out national principles to inform and guide future data centre development. These principles and how the Proposed Development and Overall Project which has been defined previously complies with these preferred strategies/principles are set out below:

Economic Impact

"The Government has a preference for data centre developments associated with strong economic activity and employment. In particular, it favours developments in regional locations, aligned with the National Planning Framework and Regional Spatial and Economic Strategies, which will embed the technology sector in locations and communities that can benefit from this investment, employment and spillover effects. In assessing economic impact, the totality of the Irish-based economic impact should be considered and factors such as associated total corporate employment, exports, wage levels, Irish materials/services purchased taken into account.

The availability of digital infrastructure should serve our national digitalisation objectives, drive innovation, productivity and skills across our economy aligned to the National Digital Strategy"

The Overall project will contribute to the emerging digital infrastructure that helps to support a strong Irish economy through its enterprise, skills, and innovation sectors. The land use contributes to Ireland's economic development with the job multiplier effects extending well beyond the actual infrastructure and support high technology construction sector.

Through Platform Equinix and their ecosystem of leading service providers, Equinix offers Irish and international businesses unmatched opportunity to fast-track their digital advantage across clouds, networking, storage, compute and software in their colocation data centres International Business Exchanges.

It is considered that DB8 will create employment synergies with DB2. The Overall Project once operational will provide 14 no. permanent jobs, these members of staff will be employed on a shift basis over a 24 hour period seven days a week. In addition, the proposal will help support Ireland's economy Equinix supports businesses in many ways and enables all digital infrastructure solutions to be delivered for customers in a sustainable and highly reliable manner.

[7] gov.ie - Government Statement on the Role of Data Centres in Ireland's Enterprise Strategy (www.gov.ie)

Additionally, recently Equinix has also seen a dramatic increase in demand for artificial intelligence (a key element of the Government's strategy[8]) from Irish domiciled organisations and start-ups. Of deep concern to Equinix, we are now seeing these companies looking to deploy new artificial intelligence services outside of Ireland due to the limitations of obtaining electrical grid connections in Dublin.

Grid Capacity and Efficiency

"The Government has a preference for data centre developments that make efficient use of our electricity grid, using available capacity and alleviating constraints. Data centres should engage collaboratively with the respective system operators to understand capacity availability and required grid services across geographic locations, and where connection can be facilitated, provide grid services such as to best utilise available infrastructure to the benefit all electricity customers.

This is in line with the CRU Direction to the System Operators related to Data Centre grid connection processing (CRU/21/124)."

The Proposed OSPG Development will power the permitted Data Centre by gas therefore, the Overall Project will have no impact on the electricity grid in the short to medium term, as a result. As mentioned previously, there was uncertainty around the timing of grid connection and the scenarios have been identified in the CFI letter and in the EIAR submitted. The on-site generation (gas plant or generators) will be able to assist with grid stability and capacity management once DB8 is grid connected, if required, and will be able to support the ESB strategy, transmission and distribution operators management of the grid by offering flexibility of demand from the grid when required.

As noted above, the design of the data centre is such that is it is capable of being powered by the OSPG infrastructure utilising gas (or alternative fuel), and that the development can be operated such that it will have no impact on the electricity grid in the short and medium term as a result. The OSPG can be utilised to reduce the demand on the electrical grid at times of system constraint.

The development of an on-site power plant with a flexible fuel arrangement has significant impact in supporting the use of renewable energy. If the development receives a grid electricity connection, it will allow the wider transmission electrical grid to take on more input power from wind and solar sources knowing that projects such as this can self-support power through a sustainable gas infrastructure during times when the sun and wind sources are not at full levels of production.

Additionally, Equinix seeks to operate in partnership with ESBN to support the electrical grid in times of increased demand by utilising the generators and uninterruptable power supplies which we operate to power the data centre, and thereby enable Equinix to reduce its load on the grid during constrained periods. Equinix is committed to working in collaboration with ESBN to explore further means in which our specialist equipment and infrastructure can be used for the benefit of the wider electrical grid.

Equinix also notes that as a result of the increased renewable generation within and off the shore of Ireland, it is important to maximise the energy usage and storage for all energy users on the grid to avoid losses due to curtailment of renewable supplies. If the current renewable generation targets of the Government are achieved, approximately 24GW of renewable power will be generated by 2030[9]; however the peak demand on the grid to date is 5.5GW in December 2022.[11] Even assuming continued growth in demand for electricity, it is anticipated that peak demand will be below that of generation. Equinix, together with other data centre operators in Ireland, have more stable electricity demands throughout day and night and are thus able to utilise (or otherwise store, depending on the particular data centre design) additional electrical energy at times of lower demand by consumers and other industries, and

[8] gov.ie - AI - Here for Good: National Artificial Intelligence Strategy for Ireland (www.gov.ie)

[9] Shaping our Electricity Future (eirgridgroup.com)

thus can play an important role in supporting the grid and avoiding payments to curtail renewable energy generators.

Renewables Additionality

"The Government has a preference for data centre developments that can demonstrate the additionality of their renewable energy use in Ireland. Developments should provide clear additionality in renewable energy delivery in Ireland, whether through new generation, repowering or otherwise increasing in-country renewable energy capacity – proportionate to the impact of their energy demand."

The applicant will procure of renewable energy solutions for the project, the applicant has made a commitment to implement a CPPA with a renewable energy plant that is in the development stage delivering additionality of renewables directly into the Irish electrical grid. Equinix commits not to commence the operation of the Data Centre prior to the operation of the CPPA renewable energy plant. We refer to the letter prepared by Schneider Electric which details Equinix's engagement with CPPA.

Equinix's strategy (including at the Site) is to utilise Corporate Power Purchase Agreements (CPPAs), where possible. The CPPA process involves the corporate energy consumer directly entering into an agreement with a renewable energy generator to buy energy to cover the data centre's consumption and emissions and to offset these during the operation of the site.

Equinix, together with its global parent, Equinix, Inc. registered on the NASDAQ in the United States, is an experienced operator of CPPAs globally and has obtained renewable energy guarantees of origin certificates in relation to 96% of the electricity utilised in its sites around the world. Additionally, globally it currently has long-term CPPAs with 225MW of operational assets and has approximately 370MW under development. Equinix will have a CPPA in place for consumption equivalent to that from the developed Site.

We anticipate that as the development at the Site is a colocation facility (rather than a hyperscale data centre), there will be a gradual increase in energy demand over a 6-8 year period as the data halls are occupied and loaded by end-customers. The renewable energy plant CPPA can be based on electricity production from renewables and/or e-fuel production to allow the CPPA to align with the increase in energy use at the development.

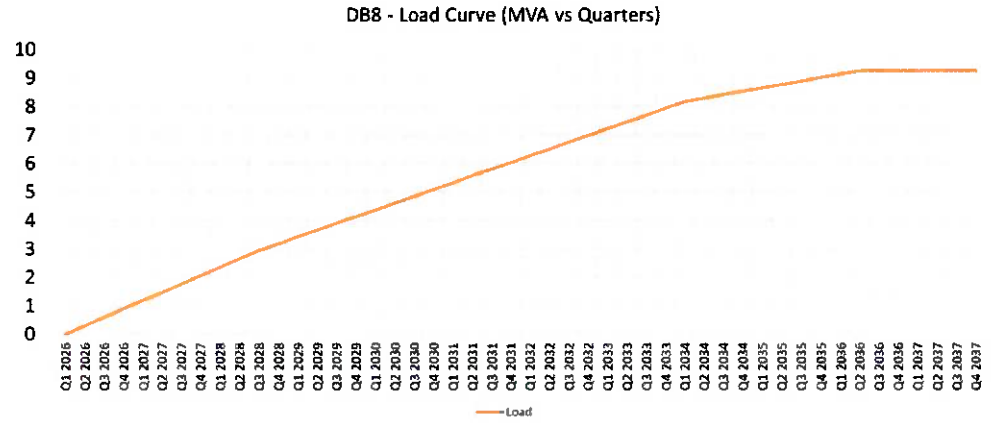


Figure 6 - DB8 Load Curve (MVA vs Quarters)

On site renewables in the form of Photovaoltaics (PV) together with heat pump technology are incorporated into the design for the administrative areas. These areas do not have the specific reliability requirements of the data hall and allow for the incorporation of PV and heat pumps.

The best use of renewable energy for a project of this type, is made at the utility level. Whilst the use of on-site renewable energy was assessed for this project, the site constraints including the lack of space

and land do not facilitate the installation of large scale on-site renewables to support the entire Data Centre (such as wind or significant quantities of PV).

Co-Location or Proximity with Future – Proof Energy Supply

"The Government has a preference for data centre developments in locations where there is the potential to co-locate a renewable generation facility or advanced storage with the data centre, supported by a CPPA, private wire or other arrangement. Where the combination of technologies at a generation facility is built to match the demand capacity factor (e.g. endeavouring to match the maximum import capacity with export capacity), the same infrastructure may be able to assist both demand customers and generation facilities (wind/solar/battery farm). This would make efficient use of grid investments, reduce curtailment and potentially enable significant decarbonisation of the data centre. The Government also encourages the co-location of downstream value-adding activities that can make use of carbon, excess heat and other outputs from the data centre activity, such as for horticultural activities or district heating schemes."

We refer to the letter prepared by Schneider Electric which details Equinix's engagement with CPPA.

The CPPA process involves the corporate energy consumer entering a direct agreement with a renewable energy generator to supply energy to cover the Data Centre consumption and emissions offsetting at any stage of the project. This is in line with the Equinix strategy to procure CPPAs that produce renewable electricity to power their projects locally within the electricity grid in Ireland.

The Applicant will implement a CPPA with a renewable energy plant that is in the development stage which will add to the renewable energy capacity in Ireland. The agreement will offset the energy that is consumed by the Data Centre with the production of renewable energy.

As outlined previously, the scope to be able to connect to large-scale renewable energy centres such as wind farms or solar farms is not feasible given the site's urban/suburban context which does not include expansive areas for wind farm or solar farm development.

As the Site is within an urban/suburban area it does not include expansive areas that are required for wind turbines or a solar farm development and so it is not feasible to install a large-scale renewable energy centre. Renewable energy sources have been included where practical in the development and, as noted above, PV cells are to be utilised to power the administrative areas.

Decarbonised Data Centres by Design

"The Government has a preference for data centres developments that can demonstrate a clear pathway to decarbonise and ultimately provide net zero data services. It is expected that data centres will align with the EU Climate Neutral Data Centre Pact energy efficiency and water use targets and set themselves targets to achieve zero- carbon electricity use at all hours. System operators will work with large energy users to facilitate accurate hourly emissions reporting, grid carbon-intensity transparency, and allow data centre to optimise computing loads to maximise use of renewables and minimise carbon emissions (as per Action 99 of Climate Action Plan 2021)."

The proposed development includes OSPG which is sufficient to meet the demand of the proposed data centre at the Site. Equinix has obtained a gas connection agreement for the site with Gas Networks Ireland. Additionally, the generation equipment located at the Site is also designed to utilise additional fuels such as hydrogen when the grid is able to support their distribution.

The applicant will procure of renewable energy solutions for the project, the applicant has made a commitment to implement a CPPA with a renewable energy plant that is in the development stage delivering additionality of renewables directly into the Irish electrical grid. Equinix commits not to commence the operation of the Data Centre prior to the operation of the CPPA renewable energy plant. We refer to the letter prepared by Schneider Electric which details Equinix's engagement with CPPA.

We can confirm that the applicant support the initiative to facilitate accurate hourly emissions reporting of large energy users and supports any innovations inline with sustainability goals.

The proposal is in line with the criteria set by the CRU and the Applicant has signed up to the Climate Neutral Data Centre Pact which was submitted with the Clarification of Further Information Cover letter. As mentioned above we refer to the letter prepared by Schneider Electric which details Equinix's engagement with CPPA.

As noted below in greater detail, the development includes a heat recovery building to allow the development to support district heating and facilitate at connection to a district heating system in the area which could support heating of home and municipal facilities.

The Government seeks operators to *"set themselves targets to achieve a zero-carbon electricity use at all hours"* and we note that Equinix and its wider corporate group are signatories to the Climate Neutral Data Centre Pact under which data centre operations are to be climate neutral by 2030.

The design of the data centre incorporates several energy efficiency measures to reduce its carbon footprint. The multi-storey nature of the development creates a compact and efficient development that utilises the existing site services and road infrastructure. Supplementary power (to provide the administrative areas of the data centre) will be provided by photovoltaics roof panels on the data centre building and above the car parking areas and the data centre development will also include low-energy lighting, sensor lighting controls, EV charging points in the parking area and variable speed pumps. Premium efficiency motors will also be specified on all equipment. In the data halls themselves which contain the specialist server equipment, all data storage and processing engineering service installations in the proposals have been considered in detail from an energy perspective.

The building and landscape design include sustainable urban drainage systems featuring green walls, green roofs, swales and rainwater harvesting. The design also includes the planting of fruit tree orchards to support pollination and biodiversity, management of grass areas to support pollinator species and the installation of beehives and bee habitats on Site to further support biodiversity.

We also note that the circular economy has been promoted as part of the development. The long-term use of materials, recycling and re-use, and minimising waste at the end of the cycle has been carefully considered as part of the overall development.

SME Access and Community Benefits

"The Government has a preference for data centre developments that provide opportunities for community engagement and assist SMEs, both at the construction phase and throughout the data centre lifecycle. Data centres should provide benefits for regional locations and their surrounding areas through place-making, community engagement and collaboration with local and regional stakeholders to ensure they offer value to the communities in which they locate.

Data centres are also construction projects, built environment and physical investments of scale. By necessity, they have an impact on the geography and communities in their vicinity. Data centre developers should make every effort to minimise the disruption of their construction on these communities."

Equinix supports local employment and continues to engage with Irish consultants and sub-consultants in the delivery of their proposed planning applications in Ireland. Several Irish based firms including planning consultants, architects, mechanical and electrical engineers, landscape architects and others form part of the design team. Once planning is secured, it is envisaged that local contractors and suppliers will be employed during the construction and maintenance of the Overall Project through direct and indirect employment opportunities.

In terms of other community benefits, Equinix supports the re-use of waste heat generated from their data halls. The Overall Project has provided a heat recovery plant room for waste heat recovery and reuse. It is intended to support the heating requirements of homes, businesses and civic institutions in the vicinity if a district heating centres be developed near the site in the future.

5.2 National Hydrogen Strategy

The Department of Environment, Climate and Communications have released the National Hydrogen Strategy in July 2023 which sets out the strategic vision on the role that hydrogen will play in Ireland's energy system, assesses its long-term role as a key component of a zero-carbon economy, and the short-term actions that are required to be delivered over the coming years to enable the development of the hydrogen sector in Ireland. It states that renewable hydrogen fuel can play a key role in the "difficult-to-decarbonise" sectors of our economy, where other solutions such as direct electrification are not feasible or cost effective.

The Strategy is being developed for three primary reasons:

1. Decarbonising our economy, providing a solution to hard to decarbonise sectors where electrification is not feasible, or cost-effective,
2. Enhancing our energy security, through the development of an indigenous zero carbon renewable fuel which can act as an alternative to the 77% of our energy system which today relies on fossil fuel imports,
3. Developing industrial opportunities, through the potential development of export markets for renewable hydrogen and other areas such as Sustainable Aviation Fuels.

The strategy states the following in relation to Data Centres:

"In recent years, there has been significant interest in locating Data Centres in Ireland, which now represent 14% of our electricity demand and this is potentially set to expand to 30% by 2030[10]. This speed of growth is unprecedented and comes at a time when the increased electrification of heat and transport, as well as the decarbonisation of our electricity sector, are key strategic priorities for the country out to 2030. In 2022, Ireland published a policy statement in respect to Data Centres outlining that decisions on future Data Centre development will be cognisant of several factors, including grid capacity, renewables additionality, co-location with supply and decarbonisation by design[11]."

"The use of hydrogen as a primary energy source for large electricity users, such as Data Centres, is considered a low priority end-use, as the direct supply of electricity from renewable sources will be more efficient. However, Data Centres require a high degree of reliability and typically require on-site backup generation should their electricity supply fail at any point. Given the location specific impacts that large energy users can have on electricity networks, renewable hydrogen in combination with direct renewable sources and co-located with large energy users could be used to fuel on-site back-up generation, alleviating the potential challenges associated with decarbonising these sectors in the short to medium term. In particular, integrated energy parks developments which co-locate large demand users and renewable energy generation alongside energy storage or energy transport infrastructure may offer significant opportunities without placing significant new capacity requirements on our electricity grid."

Section 4.3 of this strategy refers to the transitioning of the gas network to hydrogen blending and repurposing. We note that it will be possible to blend renewable hydrogen into the gas network and for existing gas network end-users to operate their equipment and appliances on hydrogen blends according to this strategy.

In our opinion this is an important step towards achieving the Key Performance Indicators (KPIs) of the Climate Action Plan 2023.

The proposed Onsite Power Generation Plant at the site can run efficiently in natural gas and alternative biofuels such as biomethane, hydrogen/natural gas mix or pure hydrogen when Gas Networks Ireland

[10] EirGrid_SONI_Ireland_Capacity_Outlook_2022-2031.pdf (eirgridgroup.com)

[11] gov.ie – Government Statement on the Role of Data Centres in Ireland's Enterprise Strategy (www.gov.ie)

commence distribution. This ensures that the plant is future-proofed to align with the evolution of the gas grid and Ireland's wider decarbonisation objectives.

The proposed development for an Onsite Power Generation Plant with a flexible fuel arrangement has significant impact in supporting the use of this renewable energy.

Having regard to the Government's approach to gas generation serving the national grid outlined in this strategy, we conclude the proposed gas powered OSPG for use in this private development is considered an appropriate and suitable transition fuel while alternative and renewable fuel sources are being developed to power the national grid.

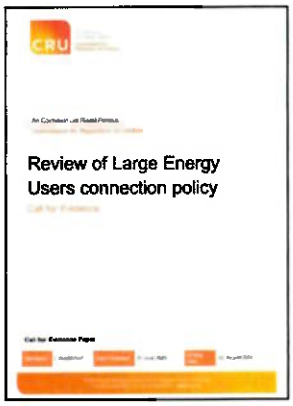
We note from our understanding of this strategy that while these intentions and results of GNI feasibility study are promising in proving the technical viability of blending, there are still some concerns that will need to be explored further and addressed to ensure that injecting renewable hydrogen into the gas network is beneficial to the transition of a renewable hydrogen sector in Ireland in the long-term.

The strategy notes that *"Some large energy users such as industrial users will need to have their equipment assessed in more detail to determine if they are technically able to accept the requisite changes in gas quality composition that would occur due to hydrogen blending. It is likely also that some of these end use sectors may only accept a constant blend of hydrogen. This may require significant volumes of buffer hydrogen storage to maintain this constant blend mix. The costs associated with this will need to be understood and compared against other transportation pathways which don't require blending to show there is a benefit."*

We can confirm that the proposed OSPG can facilitate a blend of natural gas and hydrogen gas which will aid the transition to hydrogen fuel in the short to medium term.

The National Hydrogen Strategy anticipates that regional hydrogen demand clusters will develop in the early 2030s and national network will emerge in the mid to late 2030s. Importantly, the strategy notes that natural gas will still be required to ensure continued security and resilience of Ireland's energy.

5.3 CRU Call for Evidence Paper – Review of Large Energy Users Connection Policy



The aim of this review is to provide a pathway for new Large Energy User (LEU) connections to the electricity and gas systems which limits the impact on carbon emissions. This is in response to recent developments such as the Government publication of the Sectoral Emissions Ceilings and the Government Statement on the Role of Data Centres in Ireland's Enterprise Strategy.

Due to the considerable interaction between gas and electricity networks, the CRU is cognisant that a coordinated approach is required to connections to the electricity and gas networks to ensure that policies introduced for electricity do not inadvertently result in increased connections to the gas network. The purpose of this call for evidence paper is to seek views on potential assessment criteria which the System Operators could use to assess Large Energy User applications in the context of binding climate targets. This paper explores different areas for consideration in addressing the challenges faced and seeks feedback on the different possible options.

The feedback from the call for evidence will inform a more detailed consultation to be published later this year with a view to subsequently publishing a decision thereafter.

The CRU states that their current view is that distribution connected demand customers (such as DB8 will be) should not be considered as Large Energy Users for the purposes of setting out connection requirements that are more demanding for Large Energy Users.

We note the Current CRU Position below:

"In the CRU's view all demand connecting to the electricity and gas systems has a part to play in Ireland meeting its Sectoral Emission Ceilings. The focus of this review on LEUs is on the basis that the connection of

LEU demand is having a far greater impact on the system than smaller demand sites, ultimately impacting far greater on emissions. The CRU is of the view that this review should focus on the larger end of the LEU category, for electricity at Extra Large Energy Users (XLEUs) e.g. DG10, DTS-T. This is on the basis that the connection of XLEU demand is having a far greater impact on the system than smaller LEUs. ***For gas using the large industrial and commercial customer definition of those with a peak hourly demand greater than 50MW thermal input and a connection pressure of 16 barg or above.*** *This proposed approach would reduce the number of LEU projects potentially affected by this review, with only larger demand sites captured."***[BMC Emphasis]**

6 Decision of the Planning Authority

On the 8th August 2023 South Dublin County Council issued the decision to refuse permission for the proposed development for the following reason.

1. *Having regard to the existing insufficient capacity in the electricity network (grid), the lack of a fixed connection agreement to connect to the grid, the lack of significant on site renewable energy to power the proposed development, the lack of evidence provided in relation to the applicant's engagement with Power Purchase Agreements (PPAs) in Ireland, and the reliance on a gas powered plant to provide energy to the development, it is considered that the applicant has failed to demonstrate that the proposed use is acceptable on EE zoned lands, in accordance with EDE7 objective 2 and section 12.9.4 of the South Dublin County Development Plan 2022-2028. In this regard the proposed development, would, therefore, be contrary to the proper planning and sustainable development of the area.*

The Applicant has addressed all items raised as part of the Request for a Clarification of Further Information and we are disappointed with the reason of refusal given the information submitted which addressed all of the concerns raised by the Planning Authority. We were of the view that any potential issues that may arise following consideration of the information submitted could have been appropriately addressed by condition.

It is considered that the most relevant issue to be addressed by Condition is the detail of the CPPA agreement. In this regard, we invite the Board to attach the following condition to a grant of permission:

> *"Prior to the commencement of operation of the development hereby permitted, the developer shall submit for the written agreement of the Planning Authority details of a Corporate Purchase Power Agreement that the developer has entered into which demonstrates that the energy consumed by the development on site is offset with new renewable energy generation. The Agreement shall comply with the following: (a) The new renewable energy projects shall not be supported by government, consumer or other public subsidies. (b) The new renewable energy projects shall be located in Ireland. (c) The new renewable energy generation shall relate to energy that is not being generated at the date of grant of this permission. REASON: In the interests of sustainable development."*

7 Grounds of Appeal

This section details the full grounds of appeal together with the arguments, reasons and considerations upon which these are based on are set out below in addition we have provided additional information that has become available in relation to PPAs since further information was submitted. For clarity and ease of reference we have dealt with each individual reason of the refusal set out by South Dublin County Council and outline our response to each element in turn.

Reasons for Refusal No. 1

1. *Having regard to the existing insufficient capacity in the electricity network (grid), the lack of a fixed connection agreement to connect to the grid, the lack of significant on site renewable energy to power the proposed development, the lack of evidence provided in relation to the applicant's engagement with Power Purchase Agreements (PPAs) in Ireland, and the reliance on a gas powered plant to provide energy to the development, it is considered that the applicant has failed to demonstrate that the proposed use is acceptable on EE zoned lands, in accordance with EDE7 objective 2 and section 12.9.4 of the South Dublin County Development Plan 2022-2028. In this regard the proposed development, would, therefore, be contrary to the proper planning and sustainable development of the area.*

7.1 Having Regard to the existing insufficient capacity in the electricity network (grid), the lack of a fixed connection agreement to connect to the grid

We respectfully submit that the issue of grid connection is not an appropriate reason for refusal in this case. The proposal does not relate to a connection to the grid. The proposal is for On Site Power Generation to power the data centre onsite permitted under Ref. SD21A/0186 and modifications to the data centre as outlined in Section 3 of this Appeal.

Furthermore, the applicant received confirmation as of **1 June 2023** that the DB8 application under Ref. SD21A/0186 cannot be connected to the grid as the proposed site is within a constrained area.

The Applicant, Equinix, believes that ESBN's refusal is invalid, we refer to section 1.3 for the reasons and explanation of this statement. Equinix has requested that the CRU (1) contact ESBN to discuss this matter and (2) issue a direction to ESBN requiring it to issue a connection offer to Equinix in respect of DB8 in line with the DB8 Application (if needed, including reasonable flexible demand requirements). Equinix has subsequently raised a dispute pursuant to Section 34(6) of the Electricity Regulation Act, 1999 (as amended) (the "Act").

The proposed OSPG will serve the permitted data centre under SDCC Ref. SD21A/0186. The power plant will be supplied by energy provided by Gas Networks Ireland, as confirmed by their signed connection agreement (November 2021).

By way of overview of the OSPG design proposals, these will consist of gas generators (reciprocating engines), utilising a gas supply from Gas Networks Ireland. The OSPG plant also incorporates a Battery Energy Storage System consisting of two units (2MW/1MWh each) as well as the gas engines to provide stability. The OSPG system will allow the data centre to operate in 'island mode' when required, drawing no electrical power from the electrical distribution grid.

The OSPG has the capability to act in a "flex" capacity once it has grid connection to allow the DB8 data centre demand to be removed from the grid if required by the utility provider. If the OSPG plant is retained on a permanent basis it can operate on the terms and requirements of the CRU in order to support the security of the new de-carbonised national grid. In this case, the Consumer would have a "flex" agreement with ESBN and would be required to operate the OSPG on a limited time period to support the decarbonised grid at times when renewable energy supply to the grid is at low levels.

As mentioned throughout the application documents there was uncertainty around the timing of grid connection and the scenarios have been identified throughout the clarification of further information response and in the EIAR. The on-site generation (gas plant or generators) will be able to assist with capacity management once DB8 is connected to the grid if required and will be able to support the ESB Action Plan 2030. This principle has been highlighted in the Material Assets Chapter and assessed in the

Climate We note the actual use and deployment of the grid capacity by ESBN is not known at this moment in time. Our understanding is that once the development receives a power supply it could disconnect from the grid, run on power supplied by the OSPG, which would help ESBN manage grid capacity on a constrained network. This would form part of the connection agreement with ESBN. This scenario has been assessed in the EIAR submitted at Clarification of Further Information stage.

The most recent Government Statement on the Role of Data Centres recognised that data centre operators have an opportunity to play a pivotal, and positive role in the development and stabilisation of Ireland's electrical grid infrastructure and welcome that developers of data centres place an emphasis on how energy requirements can be met from renewable sources, and data centres will likely play a role in creating a market for renewable energy development. It is in our opinion that the use of PPAs will create a market for renewable energy development we refer to the CPPA letter by Scheinder Electric that provides evidence of the applicant's engagement with renewable PPA's in Ireland.

We refer to the CRU Direction to the System Operators related to Data Centre grid connection processing Decision paper CRU/21/124 requiring Data Centre operators to provide On Site Power Generation to support the security of the grid. We refer to the following statement:

"the ability of each data centre applicant to bring onsite dispatchable generation (and/or storage) equal to or greater than their demand, which meets appropriate availability and other technical requirements as may be specified by EirGrid, in order to support security of supply;"

7.2 Lack of significant on-site renewable energy to power the proposed development

The applicant will procure of renewable energy solutions for the project, the applicant has made a commitment to implement a CPPA with a renewable energy plant that is in the development stage delivering additionality of renewables directly into the Irish electrical grid. Equinix commits not to commence the operation of the Data Centre prior to the operation of the CPPA renewable energy plant. This will offset the energy that is consumed by the Data Centre with the production of renewable energy. We refer to the letter prepared by Schneider Electric which details Equinix's engagement with CPPA.

Due to the lack of space and land on the subject site it is not possible to generate substantial power from renewable sources of power such as PV and Wind to power the permitted Data Centre .

As mentioned throughout this appeal and the application submitted to South Dublin County Council the proposal has included renewable technologies such as use of photovoltaic panels, heat pumps and provision of waste heat building to facilitate future connection to a district heating system.

Other fuel sources such as hydrotreated vegetable oil and biodiesel were considered but due to limited space availability on the site it is not possible to store the large volumes of fuel that would be required to run the OSPG plant.

In addition, we note that on-site solar, wind and bio-diesel were considered as alternative renewable fuel options to support the operation of the permitted Data Centre but was discounted as viable alternatives for the following reasons:

Solar

Ireland's largest solar farm is located at the Lilly Factory in Kinsale, Co Cork. The output of this plant is 5.6MW and occupies a land area of 16 Acres. The proposed development has a land area of 6.5 Acres and requires a power output of 10MW. It can be seen from this comparison that to supply the facility with on-site solar power is not feasible as there is insufficient available land.

PV cells have been incorporated into the proposal to provide power to the front of house office building in the Data Centre, which has been recognised and accepted in the planning approval received for the permitted Data Centre building.

Figure 7 - Solar Farm, Kinsale Co. Cork

Wind

Wind farms to supply a load of 10MW are typically located on land in remote areas where wind patterns are favourable and space is available or offshore where there is available space is less of a problem or on land in remote areas where wind patterns are favourable and space is available.

Assuming a single 2 MW wind turbine is considered typical, the height of the centre of the fan blades sits at 80m from the ground and the rotor diameter is 116m. The maximum height limit on the site is restricted to 22m by South Dublin County Council due to the adjacent Casement aerodrome and general planning restrictions, so therefore, even a single 2MW wind turbine cannot be located on this site, which would deem on site wind power generation unfeasible.

SPECIFICATIONS

2 MW wind turbine specifications table

2 MW platform	2 MW – 116	2 MW – 127	2 MW – 132
Output (MW)	2.3 to 2.7	2.5 to 2.8	2.5 and 2.8
Rotor diameter (m)	116	127	132
Hub heights (m)	80, 90, 94	89, 114	94, 130, 150*
Frequency (Hz)	50, 60	60	50
Vavg (m/s)	8.0	8.0	6.5
Ve50 (m/s)	53.2	56.0	49.0
Cut-in (m/s)	3.0	3.0	3.0
IEC Wind Class	IIS/IIIS	IIS/IIIS	IEC S

Figure 8 - Specification for 2MW Wind Turbine – General Electric (GE)

7.3 The lack of evidence provided in relation to the applicant's engagement with Power Purchase Agreements (PPAs) in Ireland

As mentioned previously on-site demand cannot be met through the provision of renewable energy generation. We now submit as part of this appeal evidence of the applicant's engagement with renewable PPA's in Ireland. We refer the Board to the attached letter from Schneider Electric which outlines the First Party's engagement and pursuit of a PPA in Ireland in respect of the proposed development.

The Applicant will implement a CPPA with a renewable energy plant that is in the development stage which will add to the renewable energy capacity in Ireland. The agreement will offset the energy that is consumed by the Data Centre with the production of renewable energy.

This letter represents clear evidence of the First Party's engagement with Power Purchase Agreements in Ireland since May 2023 with an Irish developer offering two new wind projects with the potential capacity to generate 150 MW which would be developed in line with the projected deliver date for DB8 and the OSPG. These renewable CPPA projects referred to have been permitted by the Local Planning Authority and are currently subject to an appeal with An Bord Pleanála. Equinix is of the understanding that a decision is due in Q3 of 2023 for this renewable wind project.

The first party is committed to sourcing PPAs and to powering the development using renewable energy and is of the opinion that the proposed OSPG will allow for a transition towards carbon neutrality that is inline with the National Hydrogen Strategy.

The applicant is a subsidiary of the global parent entity Equinix, Inc. which is registered on the NASDAQ in the United States. Equinix, Inc. is, together with its global subsidiaries, an experienced operator of CPPAs globally and has obtained renewable energy guarantees of origin certificates in relation to 96% of the electricity utilised in its sites around the world. Additionally, globally it currently has long-term CPPAs with 225MW of operational assets and has approximately 370MW under development.

7.4 The Reliance of a gas powered plant to provide energy to the permitted development

Subsequently since the Planning Authorities decision, the applicant is now in a position to provide evidence of engagement with renewable PPA's in Ireland.

As on-site demand cannot be met through the provision of renewable energy generation, the applicant has now provided evidence of engagement with a renewable CPPA agreement in Ireland in relation to on site power generation under Policy EDE7 Objective 2 and therefore the Board should now be in a position to grant permission on this basis.

The applicant will procure of renewable energy solutions for the project, the applicant has made a commitment to implement a CPPA with a renewable energy plant that is in the development stage delivering additionality of renewables directly into the Irish electrical grid. Equinix commits not to commence the operation of the Data Centre prior to the operation of the CPPA renewable energy plant. We refer to the letter prepared by Schneider Electric which details Equinix's engagement with CPPA.

This evidence now presented to the Board meets the requirement in the South Dublin Development Plan Policy EDE7 Objective 2 – "Maximise on site renewable energy generation to ensure as far as possible 100% powered by renewable energy, **where on site demand cannot be met in this way, provide evidence of engagement with power purchase agreements in Ireland (PPA)." [BMC Emphasis]**.

<u>The proposal is in accordance with relevant regulations of the Commission for Regulation of Utilities (CRU)</u>

This proposal is in line with the following criteria set down by the CRU;

"The CRU expects that any dispatchable on-site generation that uses fossil fuel sources developed by Data Centre operators, will use natural gas (NG) as it's fuel source. The CRU considers NG to be a transitional fuel in terms of meeting Ireland's Climate Action Plan targets. Considering many Data Centre operators mandates are to use 100% renewable energy, the CRU expects that fossil fuel powered dispatchable on-site generation that is installed by Data Centre operators will be futureproofed to the extent that is possible at this time and will have the ability to run, or capable of being retrofitted to run, on alternative renewable fuel sources such as NG/biomethane, NG/hydrogen blends, 100% biomethane and 100% hydrogen." [12]

[12] CRU Direction to the System Operators related to Data Centre grid connection processing.

"the ability of each data centre applicant to bring onsite dispatchable generation (and/or storage) equal to or greater than their demand, which meets appropriate availability and other technical requirements as may be specified by EirGrid, in order to support security of supply;"

The proposal is designed to accommodate alternative biofuels

It is noted that the proposed OSPG is designed to facilitate the use of renewable gasses to provide electricity.

The Applicant is committed to increasing its use of renewable energy resources when they become more available in the Irish market.. As noted above, the On-Site Power Generation plant can run efficiently on Natural Gas and alternative biofuels such as biomethane, Hydrogen/Natural Gas mix or pure Hydrogen when GNI commence distribution. The OSPG plant equipment has been designed to accommodate flexible fuel, should advances be made to the grid in the future. This ensures the plant is future proofed to align with the evolution of the gas grid. In addition, the proposed OSPG does not exceed 10 MW in capacity and therefore is not required to provide secondary fuel storage.

The delivery of sustainable gas is presented in Gas Networks Ireland 2050 vision and the National Hydrogen Strategy. This presents a clear strategy to transition to a zero carbon grid through the use of renewable gas, carbon capture and hydrogen to ensure sustainable gas delivery.

Natural gas and Hydrogen is seen as the transitional energy source that will lead the Gas and Electricity utility networks to a decarbonised status and will provide support to those utilities in the event insufficient power can be generated from solar and wind farms.

Having regard to the Governments Strategy and CRU Direction to System Operators for gas generation serving the national grid, we conclude the proposed gas powered OSPG for use in this private development is considered an appropriate and suitable transition fuel while access to the grid is being established.

7.5 It is considered that the applicant has failed to demonstrate that the proposed use is acceptable on EE zoned lands, in accordance with EDE7 objective 2 and section 12.9.4 of the South Dublin County Development Plan 2022-2028

The proposed use is acceptable on EE zoned lands

As mentioned previously there was uncertainty in relation to a grid connection from ESBN at the time of submitting the subject application a decision has been made and the connection has been refused by ESBN.

The proposed OSPG is intended to power the permitted data centre on site under SDA21A/0186. We wish to note that the Applicant shall use the OSPG until such time as connection can be made to the national electricity grid.

The medium and long-term options for the OSPG are provided below and have been assessed in the EIAR.

1. Medium Term Option: Decommission the OSPG plant

   In the next 6-8 years, the grid will be upgraded by ESBN and they may decide that there is sufficient capacity in the network to serve and support this development. In this instance, OSPG plant may no longer be required.

2. Medium Term Option: Retain the OSPG with a grid connection after 6-8 years of full operation

ESBN could request that the plant is retained on a permanent basis and operate on the terms and requirements of the CRU in order to support the security of the new de-carbonised national grid. In this case, the Consumer would have a "flex" agreement with ESBN and would be required to operate the OSPG on a limited time period to support the decarbonised grid at times when renewable energy supply to the grid is at low levels. As the OSPG hours of operation are currently unknown for this option, the hours of operation have been estimated based on an existing/similar OSPG development that is currently in a flex agreement which operates for 500 hours of the year.

3. Long Term Option: Retain the OSPG with no grid connection

   If the grid is not upgraded by ESBN in the next 6-8 years and connection is not available for the permitted Data Centre, the proposed OSPG would remain operational for the long term (+15 years). This scenario has been assessed in the Climate Chapter of the accompanying EIAR.

We note that the Final Ministerial Direction was made on 18 November 2022, whereby Data Centre reverted to an 'open for consideration' use under the EE zoning;

In accordance with EDE7 Objective 2 and Section 12.9.4 Space Extensive Enterprise

South Dublin County Council requested the applicant to demonstrate how the proposed amendments to the development proposed to SD21A/0186 are compliant with Policy EDE7 and its associated objectives.

The applicant has responded to the requests of South Dublin County Council at clarification of further information stage however it was deemed that the proposed use is not in accordance with EDE7 Objective 2 of the South Dublin County Council Development Plan 2022-2028 and permission has been refused on this basis.

We respectfully disagree with this reason for refusal as the proposed development is compliant with these objectives as demonstrated in the Applicant's response to Clarification of Item No. 1. We refer An Bord Pleanála to the Applicant's Response to Clarification of Item No. 1 in the Clarification of Additional Information Response submitted to South Dublin County Council. For convenience, the applicant's response is appended to this Appeal Report.

It is our understanding from the Planners Report and Decision that this reason for refusal predominately relates to the following requirement under Policy EDE7 Objective 2 which states:

"Maximise on site renewable energy generation to ensure as far as possible 100% powered by renewable energy, where on site demand cannot be met in this way, provide evidence of engagement with power purchase agreements in Ireland (PPA);"

Our response to this requirement above for Policy EDE7 Objective 2 is now included below:

The applicant has made every effort to utilise on site renewables as far as possible in the form of PV panels together with heat pump technology which are incorporated into the design for the administrative areas of the Data Centre. These areas do not have the specific reliability requirements of the data hall and allow for the incorporation of PV and heat pumps.

The applicant and design team have concluded that it is not possible power the permitted data centre development with renewable energy generation due to site constraints which has been justified in Section 7.2 in this 1st party Appeal.

The best use of renewable energy such as solar or wind power for a project of this type, is made at the utility level. Whilst the use of on-site renewable energy was assessed for this project, the site constraints do not facilitate the installation of large scale on-site renewables to support the entire Data Centre (such as wind or significant quantities of PV) as mentioned previously. However as mentioned throughout this Appeal it is the applicant's commitment to procure renewable energy for the project where available through biofuels such as biomethane, Corporate Power Purchase Agreements (CPPAs) and renewables

additionality as demonstrated with the letter provided by Schneider Electric submitted as part of this appeal.

The proposed, on site, dispatchable power generation using gas generators will support the full power requirements for the data halls and the entire development as customers onboard with Equinix. This project will not only provide additional capacity to meet the growing demand for Equinix's services, but also serve as a demonstration for how the data centre sector can become a stabilising component of the overall energy system by providing stabilising services to Ireland's power grid.

8 Conclusion

We respectfully submit that the reasons for refusal issued by the local authority are unfounded and that the subject proposal is appropriate for the subject site. The 5 constituent parts of the reason for refusal have been positively addressed in this appeal.

The proposal complies with the zoning objectives for the site and all relevant national and local planning and environmental policy as demonstrated in the planning enclosures submitted with the application (including information submitted at further information and clarification of further information stage).

This appeal document responds to all issues raised within South Dublin County Council's decision notice and the associated assessment within the Planner's Report. It is submitted that this Appeal Report provides a robust justification for the proposal and demonstrates its compliance with key national planning policies, so that the Board may issue a positive decision and overturn the ruling of the Planning Authority.

The proposed development complies with the Government's Statement **Role of Data Centres in Ireland's Enterprise Strategy** and the nature of the Data Centre which this appeal is seeking to power is fundamental consideration for the Board's assessment. We trust that the Board will recognise the strategic importance of this facility at a national economic level and grant permission accordingly.

Appendix A - PPA Letter from Schneider Electric

RE: Equinix PPA Global Engagement and Ireland PPA Development for new DC developments incl. DB8 Planning (Ref SDCC Planning Reference SD22A/0156)

To whom it may concern,

Schneider Electric is supporting Equinix with the identification, evaluation, and implementation of corporate power purchase agreements through Europe, North America and South America. Dating back to 2015, Schneider Electric has advised Equinix on the execution of 715 MW of PPA capacity with 225 MW of this operational in the United States of America and the remaining 595 MW in development in Finland and Spain.

Schneider is also supporting Equinix's existing project evaluations and contract negotiations which include over 800 MW of wind and solar PPA capacity across Ireland, France, Germany, UK, Canada and Brazil.

In a local context, Ireland has been a target market for Equinix since their team began evaluating PPA opportunities in Europe in 2020. Schneider has administered three RFPs on Equinix's behalf for projects across a variety of countries in Europe, but it wasn't until the most recent RFP that suitable viable project options in Ireland were available.

Since May of 2023, Equinix has been in active discussions with an Irish developer offering two new-build wind projects for over 150 MW of capacity. These projects are in early-stage development with an expected commercial operation date of late 2027 / early 2028 in line with the projected delivery date for our DB8 project.

Although the projects are less mature than those Equinix typically pursues, the team is motivated to establish a partnership with the local developer and has been progressing with term sheet negotiations since early July. If successful, Equinix plans to transition to PPA negotiations in early Q4 2023 with anticipated PPA execution in Q1 2024. This timeframe and the addition of the new renewable infrastructure to the Irish electrical grid aligns well with the projected operational date for our DB8 project proposed under SDCC Planning Reference SD22A/0156.

Schneider Electric Sustainability Business

By: A. Charlton

Name: Ally Charlton

Title: Director, Renewable Energy and Carbon Advisory

Date: 18-Aug-2023

August 16, 2023

Appendix B - ESBN Letter

NETWORKS

esbnetworks.ie

Gréasáin BSL CGA
Rialachán agus Tráchtála
Bóthar Baile na Lobhar
Carraig an tSionnaig, D18 XN80, Éire
Fón: +353-1-676 5831

ESB Networks DAC
Regulation and Commercial
Leopardstown Road
Foxrock, D18 XN80, Ireland
Phone: +353-1-676 5831

Equinix Ltd
Unit 7 Kilcarbery Park
Nangor Road, Dublin 22
Dublin, D22Fv12
Ireland

01st June 2023

Ref: Application for connection to the Distribution system

Dear Peter Lantry,

I am writing with reference to your application for connection to the distribution system detailed below.

Customer Name: Equinix Ltd
Site Address: Equinix Ltd, Site 100, Profile Park, New Nangor Road, Kilberrt Co Dublin
MIC requested: 9.9MVA new connection for a Data Centre
Application Date: 19/01/2021
Notification number: 5000438729

As you will be aware this application is subject to the CRU Datacentre Decision and the associated Directions to the SOs of 23 November 2021 (CRU/21/124).

Following publication of this Decision, ESBN spent some time considering how the criteria included in the Decision and Direction would be applied to our customers and have worked with other stakeholders including Eirgrid and CRU to ensure that the criteria are considered correctly and applied consistently and fairly to all affected applications.

I am now writing to confirm that following analysis undertaken by ESBN and having considered the criteria set out in the Direction, the application stated above is refused for the following reason:

The application cannot be accepted as the proposed site is within an area that has been deemed to be constrained by Eirgrid.

Should you wish to appeal this decision, you may refer a dispute to CRU under section 34(6) of the Electricity Regulation Act 1999.

Finally, you should note that where applicable, we will begin issuing offers for connection to other customers at the same location no earlier than from two weeks of the date of this letter.

Please do not hesitate to contact me if you have any queries.

Yours sincerely,

Commercial Manager, ESB Networks