



**Submission by IDA Ireland to the Commission for the
Regulation of Utilities (CRU) Consultation on 'Proposed
Direction to the System Operators related to Data Centre
Grid Connection'**

July 2021

Introduction

IDA Ireland welcomes the opportunity to input into the CRU consultation on data centre connection policy. The agency understands that following the consultation, the CRU will issue a direction to the System Operators (EirGrid and ESB Networks) on the processing of connection applications and subsequent connection of data centres, at both the transmission and distribution levels of the electricity grid. The consultation is notable as it focuses on the supply of electricity to a particular demand customer, namely data centres, which are becoming more significant for the functioning of economies and societies.

A stable and reliable supply of electricity is a basic requirement for homes and businesses, including data centres, and any threat to security of supply would have major consequences. The stability and quality of our electricity network has been one of the traditional strengths of Ireland's proposition for inward investment. For this reason, recent amber alerts are causing disquiet in the Foreign Direct Investment (FDI) community. From IDA Ireland's perspective, the urgent challenges that are currently manifesting are strongly supply based. Accordingly, it is imperative that these supply challenges are resolved as soon as possible to meet the demands of an expanding economy.

It is acknowledged that data centres consume appreciable levels of electricity and are contributing to demand growth. However, they are just one category of demand customer, currently accounting for about 11% of total national electricity usage. Data centres are part of a bigger group of large energy users, which contribute appreciably to the Irish economy. Data centre growth has been well signalled in recent years; this growth should not be isolated as the cause of the current challenges.

IDA Ireland is particularly concerned with the emphasis the consultation is placing on one demand customer to significantly alter its investment processes, in order to meet shortfalls on the supply side. In our view, (mainstream) electricity supply should be able to meet the requirements of all international investors; this is important for maintaining confidence in Ireland's reputation as a high quality investment location and for driving economic growth.

Before commenting on the options outlined in the consultation by the CRU, IDA Ireland would like to give an overview of the data centre sector, its significance within the overall IT sector and digital economy, and why, in IDA Ireland's view, Ireland has the ability to support significant data centre investment, in circumstances where appropriate investment is undertaken in generation, including in renewables, and in grid development.

Significance of the Technology Sector

The success of the technology sector in Ireland over the last 30 – 40 years has contributed strongly to the transformation of the Irish economy. In turn, Ireland has become a destination of choice for the world's leading technology companies; Ireland being known for its mature and supportive technology ecosystem.

The country continues to strongly support the sector through the provision of high quality tech talent, a supportive tax environment, membership of the EU and Euro, and innovative research centres. The end result of this support is an extremely valuable IT services sector, which accounts for €52 billion (16%)¹ of gross value add in the Irish economy and employs 140,000¹ people, equivalent to 6% of total national employment and representing 40% growth over the last five years.

The tech sector is also playing a major role in driving digitalisation of the Irish economy, which is foundational for increasing productivity, competitiveness and innovation.

1. Source: CSO 2021

It is worth noting that the largest FDI technology companies, with data centre infrastructure in Ireland, employ approximately 20,000 people and are responsible for substantial economic value when payroll taxes, exports, corporation taxes and other expenditures such as capex and materials' and services' inputs in the Irish economy are taken into account. In addition, the tech company presence here supports a substantially greater number of companies that require hosting infrastructure in Europe. In a recently published economic report by Amazon Web Services (AWS), it was found that for the period 2011 to 2020, AWS investments in Ireland sustained 8,700 jobs and enabled over 550 suppliers to grow their companies here. It was also estimated that in 2020 alone, based on experience gained in Ireland, AWS spent €228 million with Irish contractors on data centres outside Ireland.

FDI is very important to the Irish economy. IDA Ireland clients, with an annual payroll of approximately €15 billion, employ over 257,000, which is equivalent to about 10% of the national workforce (463,000 when associated employment is included). FDI expenditure on Irish materials and services in the Irish economy is about €10 billion annually, while approximately €7 billion is spent on capital investment in new buildings, machinery and equipment. IDA Ireland clients account for over a third of total income tax, USC and employers PRSI paid by companies in the state.

Data Centres are Critical Infrastructure

IDA Ireland views data centres as critical infrastructure for developing both Ireland's and Europe's digital economies and for strengthening and advancing Ireland's position as a strategic international location for IT services. In this context, IDA Ireland would like to make the following points about data centres:

- **Data centres enable digital economies**, whether hosting critical software that enables the world's leading companies to run their businesses, pay their staff and run their supply chains, or hosting video conferencing applications that have enabled business to quickly move to a remote model during the pandemic. Data centres also host and deliver entertainment and content services into our homes. They now form a critical infrastructure backbone in the global economy.
- **Data centres process and store companies' most sensitive and strategic assets**. The decision on where they are located is taken at the highest level and in Ireland's case, brings the country into consideration for a number of adjacent and often employment intensive functions.
- **Data centres should not be viewed on their own as a separate economic activity**. They should be assessed in the context of the total economic value that they bring, the entire jobs they support along the value chain and their role in underpinning the data economy, which will increasingly drive innovation and overall economic activity. In 2018, Grant Thornton, on behalf of IDA Ireland, conducted a study on the **economic benefits of data centre investment**. This study found that:
 - ✓ Between 2010 and 2018, the total economic impact of data centres was over €7 billion (direct impact of €4.54 billion and indirect impact of €2.59 billion), equating to roughly €0.9 billion per annum. The economic benefit today is most likely higher; data centres continue to invest heavily (e.g. in international fibre cabling and long term CPPA agreements), reflecting their confidence and commitment.
 - ✓ Data centres have a clear preference and priority for renewable energy. 85% of respondents in the study indicated that they were already investing in renewable sources, while over 60% were investing in energy efficient facilities and equipment.

Separately, the construction of data centres has created a valuable indigenous industry and expertise, with associated annual exports estimated by Enterprise Ireland at €2 billion.

- **The Government statement on data centres (2018) is supportive of data centres investing regionally.** It states: *'The Government endorses, supports and promotes the appropriate and timely delivery of data centres across regions'*. IDA Ireland is focused on getting investment into regional locations.

Data centres can help Ireland advance its renewable energy and decarbonisation goals for the following reasons:

- Data centres are an important customer of Ireland's renewable electricity sector (e.g. onshore wind) and their growth is and will continue to be necessary for supporting advancement of that sector. All large multinationals with data centres in Ireland have committed to becoming fully renewably powered. Data centres have demonstrated significant interest in being 'part of the solution' and in playing a positive role in Ireland's electricity system. IDA Ireland submits that the system should harness that intent by data centres to assist Ireland with achieving its renewable energy targets and to use data centres as a catalyst to decarbonise the country's electricity system (rather than view the centres as an impediment).
- Data centres are inherently stable loads on the national grid. They are highly efficient utilisers of power, relative to inhouse, on-premise or enterprise servers. Their displacement of inhouse or enterprise data centre infrastructure contributes to significantly lower overall power consumption, other factors being equal.
- If the country is to maximise the benefits of technology advancements brought about by 5G, AI and virtual reality, Ireland will need to continue to enable data centres, while also focusing on future renewable solutions.
- Data centres will spur innovation in alternative fuels such as biomethane and hydrogen. Ireland could miss out on much of this innovation if we cannot support new data centre investment.

Data Centres – Long Term and Short Term Electricity Availability

In light of the opportunities and benefits provided by data centres, IDA Ireland believes that data centre growth and expansion should be facilitated and supported (in so far as the ecosystem can reasonably accommodate). As a country, we need to look at the bigger picture and collectively work together. In that respect, IDA Ireland would make the following points:

Long Term:

- In the long term, Ireland **has the potential to more than supply the required electricity to meet future data centre demand**, arising primarily from an estimated 30 GW plus opportunity offered by offshore wind electricity generation; this offers the potential to not only cater for domestic demand, but to supply surplus electricity for export and for generating green hydrogen, which would complement and balance the variable nature of wind based electricity. According to Wind Energy Ireland, offshore wind farms' high capacity factors of 40 – 50% make the offshore source of energy highly reliable.
- **Offshore power generation off the East Coast offers the most immediate opportunity** (3.5 GW plus estimate), as a number of projects are reasonably advanced, and early generation would provide renewable electricity for the Greater Dublin area, the primary location of data centres.

- The outcome of EirGrid’s ***Shaping Our Electricity Future*** consultation will have an important role in driving the development of the electricity network and generation base in the medium to long term. Option 1 (i.e. generation led development, benefitting locations such as Dublin) and Option 4 (demand led, driving regional energy hub development), in IDA Ireland’s view, offer the primary optimal solutions for supporting data centre development.

Short Term:

- In the short term, supply challenges are being forecasted. It is notable that these challenges are arising due to:
 - ✓ The permanent closure of two plants in the Midlands.
 - ✓ The temporary closure of some key generating plants for critical maintenance.
 - ✓ Lower supply than expected from recent capacity market auctions.
 - ✓ The challenge of integrating renewables into the power generation mix (the variability of supply is a challenge).
- IDA Ireland understands that the shortfall arising from both the plant closures (permanent and temporary) and from capacity auctions is sizeable; this highlights the immediate near term supply challenges, which need to be resolved as soon as possible, separate to any measures on the demand side and separate to providing any future direction on data centre grid connections.
- Address measures to increase supply should include additional auctions, the full utilisation of all available generation options, no further closures of dispatch generating plants unless replaced by the equivalent generating capacity, and maximization of the opportunity offered by interconnectivity.
- Greater investment in grid infrastructure, new generation capacity, battery storage and balancing technologies such as synchronous generators, is also required urgently. Broad based demand flexibility at scale, through market signalling, should also be available for enterprise. The measures here would have valuable short, medium and long term benefits.

Perspectives on the Consultation

The CRU consultation document outlines concerns expressed by EirGrid about security of supply of electricity due to a substantial increase in demand for power from data centres. In response, the Commission sets out and seeks views on three potential options. IDA Ireland has reviewed the three options identified by the CRU as possible solutions.

IDA Ireland agrees that of the options outlined by CRU, the option to ‘do nothing’ is not credible, based on the current supply constraints. IDA Ireland is strongly opposed to the option of a moratorium, a drastic measure that would unfairly penalise IDA Ireland clients seeking grid connections for legitimate and highly valuable investments. A moratorium would cause considerable reputational damage and would be likely to result in the curtailment of growth in the wider tech sector.

IDA Ireland has serious reservations about the CRU’s favoured option for a number of reasons, including the fact that it is, largely, environmentally unsustainable. Data centres would in effect be required to invest in generation equipment, most likely fossil fuel based, with limited lifespan (due to the non-sustainability nature), to generate 100% of needs, for undefined periods. This requirement would be at variance with data centre sustainability strategies and would be highly uncompetitive.

IDA Ireland clients have expressed a clear preference that the market would supply their full electricity requirements, from increasingly renewable sources, all the time. In this context, the supply enhancement measures, outlined earlier in the 'short term section', as they apply to renewable electricity, are relevant.

With respect to specific matters for consideration, in the context of the CRU's favoured option, IDA Ireland would make the following points:

- ✓ There should be greater emphasis on supporting viable sustainable solutions.
- ✓ There should be latitude for data centres to implement other solutions that would also lead to beneficial outcomes in terms of reducing grid and (mainstream) supply burden. This would allow for flexibility and for innovative solutions to be developed.
- ✓ Data centres continue to drive demand for CPPA's and want to enter into contracts with renewable energy providers (e.g. onshore wind and solar). CPPA's should be given priority by the system operators and this should include priority grid connections for data centre based contracts.
- ✓ Speculative investments, in conjunction with sizeable and prolonged differences between contracted supply and daily usage, are understood to be contributing to an overestimation of actual demand. Accordingly, real demand should be more accurately reflected and unutilised contracted demand should, where possible, be minimised.

We acknowledge that the some of the above four points may not be entirely the direct responsibility of the CRU, but we outline them to highlight some solutions that we believe exist to support sustainable based data centre investment, and we therefore ask for the CRU's support, as a key stakeholder, in bringing about change.

The reality, as we view it, is that there are big electricity customers, namely data centres and other large industry users, that require sizeable renewable electricity levels and there are large potential suppliers, namely the promoters of significant offshore wind electricity projects, off the East Coast, that will, all going well, have renewable electricity available, 'within broadly similar timelines to the data centres'. The suppliers will be investing very heavily, will have major risks, and will be seeking valuable long term customers to ensure their investments are successful. What therefore, in our view, is required is a 'mechanism' that links data centres and the offshore suppliers, and their respective timelines.

IDA Ireland is strategically focused on the tech sector, including data which we regard as foundational for advancing the country's IT sector, and the renewable energy sector, especially offshore wind, which we believe has huge potential for Ireland. A long term national plan would be helpful in advancing the objectives of both, and this plan should comprehensively set out how the electricity ecosystem can supply the country's growing enterprise sector, and in particular the large industry users, including data centres.

Conclusion

For many years, the supply of electricity has been rated very highly by IDA Ireland clients. This achievement occurred as a result of the various stakeholders, including the CRU, EirGrid, ESB Networks, etc, all working successfully together to deliver an optimally functioning electricity system. By continuing with this successful collaboration, the current near term challenges can be overcome. Central to the outcome must be a system that can accommodate new large energy users, including data centres. In this respect, IDA Ireland believes that renewed focus needs to be placed on increasing the supply of electricity from the (mainstream) market in order to meet the demands of buoyant economic activity, which data centres are contributing to.

On the demand side, IDA Ireland recommends that whatever direction is provided by CRU, it provides latitude for new business models and innovative solutions, and facilitates sustainable electricity generation. The approach taken by the CRU should be built around 'bridging' the short term supply challenges with long term supply potential.

The increase in demand for electricity in Ireland from a variety of sources is not a recent phenomenon and is likely to grow further in response to both digitalization and decarbonisation. IDA Ireland is very concerned that an apparent absence of adequate forward planning and investment in both generation and transmission has resulted in the very serious situation set out in the CRU consultation paper with obvious and negative implications for inward investment. IDA Ireland would welcome a meeting with the CRU to discuss its proposals as a matter of urgency.