

Data centres – Ireland market update

Data Centres (DCs) are predicted as being a significant user of Irish energy resources. The Irish Government's 2019 Climate Action Plan predicts that DCs will account for as much as 31% of Ireland's electricity needs by 2027.

By the same token, the DC industry is playing an important role in promoting the move to renewable energy in the context of Ireland's target to achieve 70% of our electricity consumption from renewable energy by 2030. This market update looks at the recent impact of COVID-19 on the DC sector and also gives a brief explanation of the concept of 'flexible demand' in the context of EirGrid's data centre grid connection policy.

COVID-19 Impact

Operation

The Government recognises DC services as an essential service under the Government regulations introduced as a response to the COVID-19 pandemic (the Health Act 1947 (Section 31A -Temporary Restrictions) (Covid-19) Regulations 2020). As such, the operation of DCs in Ireland has been permitted to continue with relatively limited disruption, save to take account of the Government guidance to adapt work places and work practices to ensure the health and safety of workers in light of COVID-19.

Construction

Notwithstanding that the operation of DCs is recognised as an essential service, as with most construction projects in Ireland, the construction of DCs was required to cease for much of April and May. Even with construction now resuming across the country as part of Ireland's road map for reopening society and business, the regulatory framework for construction of DCs has now changed in order to ensure the health and safety of workers.

DC developers and construction contractors alike will be seeking to ascertain how delays and the changes in law will be determined under relevant construction contracts. A key consideration for DC developers will be what time and cost relief is available to contractors and what knock on or pass through effect this will have on other key contracts (such as lease or offtake arrangements). Contracts will differ across projects and it is recommended that legal advice is taken on the specific relief events and how these apply across the contractual framework.

Planning

For DCs that are in the planning phase, it is worth noting that orders under section 251A of the Planning Acts have extended certain planning time periods (such as planning authority decision periods and public participation periods) which were due to fall during the COVID-19 emergency for up to eight weeks (i.e. 56 days). Care should be taken in relation to the calculation of any time periods and specialist legal advice should be sought when seeking to determine if an extension of a time period is applicable and what the implications are.

Security of power supply

Availability of stable power supply remains one of the principal considerations for DC developers, particularly in Dublin. The Dublin region continues to be an area with high capacity constraint. As with all major infrastructure projects, the delivery of additional generation capacity and grid reinforcements in the region will take time. Therefore securing access to stable power, in line with development timeframe, continues to be a potential challenge in the Dublin region. This challenge has been acknowledged by the system operators who are seeking to address it through long term planning for additional generation capacity and shorter term measures to facilitate the connection of data centres, including flexible demand arrangements.

Grid Connection policy – What is ‘Flexible Demand’?

As set out in EirGrid’s Data Centre Connection Offer Process and Policy (**DC COPP Paper**) paper published in June 2019, ‘flexible demand’ refers to an arrangement whereby the electrical load of the data centre is required to be reduced when instructed by EirGrid, where capacity availability in the area is constrained (i.e. where demand exceeds the level or potential level of supply in that area). It applies to offer connections where firm (i.e. guaranteed) capacity is not readily available.

What DCs does Flexible Demand policy apply to?

EirGrid will apply flexible demand policy to areas that have been identified as being constrained areas. EirGrid has identified the greater Dublin region as being a constrained area to which these rules apply but also reserved the right to apply the rules to other constrained regions should a risk to security of supply arise.

The rules apply to all new DCs connecting directly to the transmission system or to large DCs connecting indirectly to the transmission system through the distribution system in constrained areas. Therefore the geographic location of the DC together with its scale and connection characteristics may drive the requirement for flexible demand arrangements.

The rules are also stated to apply to existing customers that have already received or are due to receive a connection offer with a flexible arrangement included.

The terms of the flexible demand arrangements will be reflected in the terms and conditions of the grid connection agreement (typically in the offer letter which forms part of the wider grid connection offer ‘pack’). It is recommended that legal advice is taken on the specific drafting of flexible demand provisions in grid connection agreements.

How is Flexible Demand applied?

Where there is a security of supply event, EirGrid can automatically instruct DCs with flexible demand to reduce their load (having firstly dispatched available generation and demand side units). The instruction to reduce load will be applied on a pro-rata basis to all DCs in the area with flexible demand that can best resolve the constraint. EirGrid has set out the following hierarchy for dispatch in order to resolve instances of constraint:

- a. EirGrid will call on available generation (including relevant on-site generation) and demand side units
- b. Pro rata constraint across flexible demand centres in a particular area to resolve localised or regional constraint
- c. Standard emergency measures are implemented thereafter if constraint is not resolved.

The DC COPP Paper is limited in terms of detail as to how dispatch instructions will be managed with flexible demand DCs. Given the criticality of power supply to the operation of DCs, we anticipate that DC operators with flexible demand facilities will be keen to engage with EirGrid to better understand the operational practicalities of reacting to EirGrid instructions.

Are Flexible Demand arrangements permanent?

Flexible demand arrangements are not intended to be permanent. Rather the policy is designed to facilitate the connection of DCs and to seek to bridge the gap between, on the one hand, short term connection needs of DC developers and on the other hand the grid and generation capacity immediately available for that purpose.

Longer term this should be capable of being alleviated through greater generation capacity (for example through capacity market contracts), grid reinforcements and potential on-site generation solutions. The DC COPP Paper recognises this and commits to annual capacity reviews following capacity market auctions to identify areas where additional firm capacity can be offered to DCs with flexible demand arrangements.

In determining whether to allocate new firm capacity to DCs with flexible demand, EirGrid will take into account (among other things) whether the DC is using its full import capacity and the date on which the DC connected to the transmission network. We assume the intention is that DCs with earlier connections with flexible demand arrangements, will be given firm capacity first, but this is unclear in the policy document.

How do DCs know how much load reduction to plan for?

EirGrid has committed to providing guidance to DC customers with flexible demand as to the anticipated level of reduced load that can be expected at times for a given connection year. DC operators will need to consider the extent to which this can assist in managing the operation of a DC with flexible demand.

Is there any other way that a DC can achieve fully firm capacity?

The DC COPP Paper states that EirGrid will provide firm capacity where a DC provides on-site dispatchable generation that is available for an extended period of time. This refers to on-site generation that is capable of supplying electricity to the grid and can be centrally controlled by EirGrid. The example given in the DC COPP Paper is generation that is available for a minimum of 15 hours per day over five consecutive days. Whilst some flexibility is suggested for generation with lower availability, this would likely exclude certain storage technologies such as batteries.

The intention of this policy seems to be to incentivise DCs to contribute to the alleviation of constraints in the area by being able to dispatch additional generation capacity when required.

Interestingly the DC COPP Paper requires that this generation must be on the same site and owned by the customer. It is unclear whether this would preclude typical 'auto-production' generator models where generation is onsite but the generation plant may be owned by a third party, however we would suggest that this is not the intention.

Conclusion

Whilst flexible demand policy undoubtedly leaves challenges for DC developers to manage, it does represent an effort by system operators to facilitate the connection of DCs to the system in constrained areas. We continue to monitor developments in this important area including any future industry consultations in relation to flexible demand policy. When considering connecting on the basis of flexible demand arrangements, interaction with the system operators is encouraged to understand the practicalities of these arrangements. Similarly, legal and technical advice should be taken to ensure the arrangements are appropriately documented, understood and incorporated into project design.

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