Ireland's Data Hosting Industry

2019 Q4 Report

"An Industry of Substance"

Host In Ireland

bitpower energy solutions

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2019 Q4 Update

March 2020

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Foreword

In March 2000, Ireland was announced as the largest software exporter in the world by the Organisation for Economic and Cooperative Development (OECD). The preceding decades saw Dublin become a centre of excellence as a global hub for software localisation. Technologies were trialled, standards defined, milestones achieved and the expertise of the Irish workforce was second to none. As the market transitioned from floppy disks to fibre over the next two decades, the strength of that foundation laid the groundwork for the data centre market we see today.

Twenty years later, Ireland has the largest cluster of data centres in Europe. The critical infrastructure found in the Metro Dublin Area acts as a foundation for Foreign Direct Investment in the ICT industry in Ireland. It is by far our largest service export at €86 billion* per year and underwrites almost 115,000 ICT jobs** in Ireland.

The last quarter of 2019 saw the market sustain 3% growth with 658 MW of operational data centres. Hyperscalers remain the dominant data centre type, with 73% of capacity, but the colocation wholesale market has doubled from 6% to 12% in the past 3 years.

In order for Ireland to maintain its leading status as Tier 1 hosting location over the next decade, the decarbonisation of the grid as set out by the Government, Eirgrid and IWEA will play a critical role. The Irish national grid has a set target of 70% of electricity generated from renewable sources by 2030. This target not only looks feasible, but likely to be exceeded sooner than expected, when you take into account the wind generation power records that have been repeatedly broken in early 2020.

Wind farms have recorded max wind output of 4.249 MW on 21 February and set new daily generation records of 71% of of electricity needs met by wind⋆. In addition, coal produced power was not been called upon for the first seven weeks of the year⋆⋆.

Whilst the tech giants - Microsoft, Google, Facebook and Amazon - were the world's biggest buyers of renewable electricity in 2019, in January, Microsoft looked to set the gold standard by pledging to be carbon neutral by 2025 and carbon negative by 2030. The company took a bold step in taking responsibility for the Scope 1, 2 and 3 sources of their emissions. No other company has gone to this length to cover their direct, consequential and supply chain emissions.

As we embark on a new decade, we have a chance to reflect on the past, the future and how the industry is evolving. Ireland's role as a centre of excellence for all things data, both data resting here and the exporting of the design, build and operation of the centres themselves, carries forward the legacy of our ICT history and pedigree. Take a bow, Ireland. You have been brave, creative and relentless over the past twenty years to maintain your rightful place as a leader for all things data. Whilst the challenges will be different over the next twenty years, a foundation of success has been set and we look forward to what's to come next.

Garry Connolly
President & Founder - Host in Ireland

Host In Ireland

* https://www.cso.ie/en/releasesandpublications/er/its/internationaltradeinservices2018/
** https://statbank.cso.ie/
⋆ http://smartgriddashboard.eirgrid.com
⋆⋆ https://www.independent.ie/business/farming/agri-business/renewables-industry-has-wind-in-its-sails-38982371.html

Data Market Developments in 2019

2019 saw a significant increase in the amount of activity in the data centre market in the Dublin Metro area. Plans for up to eighteen new data centres were added to our projections.

Eleven data centres were under construction at the end of 2019, compared to eight at the end of 2018. Thirty-three proposed data centres (totalling over 650MW) had planning permission at the end of 2019 compared to twenty (436 MW) at the end of 2018.

The total investment in data centre buildings in Ireland in the decade from 2015-2024 is expected to reach over €10 billion. The total since 2011 was €5.6 billion, and a pipeline of €7.5 billion is expected. Conservative estimates project investment of over €1.3 million per annum for each of the next five years.

With approximately 630 MW (of 658 MW) of capacity operational through 2019, the total energy use at 50% utilisation would be 2.76 TWh. Ireland's total annual electricity use is about 28 TWh. Data centre energy demand is therefore estimated at 10% of electricity use in 2019.

In terms of carbon emissions, the Irish electricity grid produced about 375g CO2/kWh according to the 2018 SEAI figures*. Data centres therefore represented about 1 million tonnes of CO2 in 2019. This equates to approx 1.7% of Ireland's total 60.5 million tonnes of CO2.

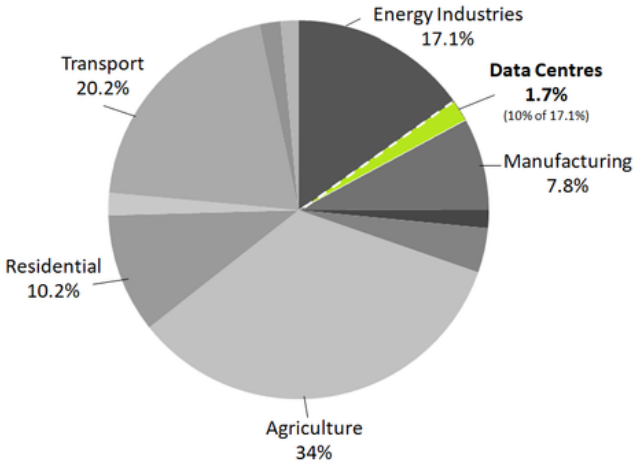

Figure 1 - % of Ireland's Total CO2 Emissions*

For the purpose of clarity, this analysis does not include renewable procurement including direct renewable power purchase agreements and premiums for renewable electricity.

Dave McAuley
Founder & CEO - BitPower

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* https://www.seai.ie/publications/Energy-in-Ireland-2019-.pdf

Data Market Developments in Q4 2019

There is now a total of fifty-five data centres in Ireland, with 658 MW of grid-connected power capacity. These reside mostly in the Dublin Metro area, which is beginning to extend north and south by up to 60 kilometres.

While Hyperscale remains the dominant data centre type, with 73% of capacity, the colocation wholesale market has grown from 6% to 12% in the past 3 years, as shown in Figure 2.

Colocation Wholesale

The latest **EdgeConneX** development at Grange Castle was appealed to An Bord Pleanala. **EngineNode** applied for planning for four data centres at Clonee. The **CyrusOne** development continues through the construction stage at Grange Castle. Up to fourteen new data centres have planning permission across **Echelon**, **Orion**, and **K2 Data Centres**.

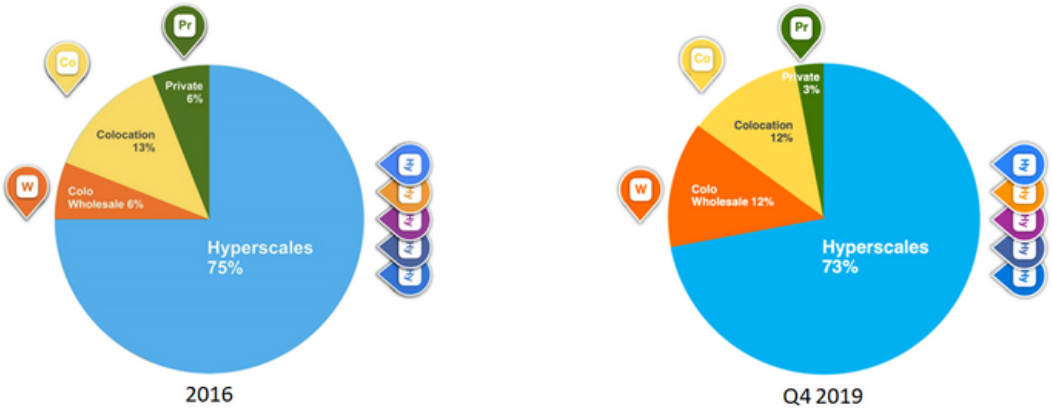


Figure 2 - Relative scale of digital hosting types in Ireland.

Private Data Centres

The Office of Public Works (OPW) planned data centre at Celbridge was appealed to An Bord Pleanala. This sector accounts for smaller facilities not explicitly leasing out space in their buildings. They provide internet services for business and have a regional spread. This remains at 20 MW total.

Colocation Data Centres

No planning or construction activity has been reported by colocation operators in Q4 2019. Fourteen currently operational colocation facilities in Ireland include **Digital Realty**, **Equinix**, **Interxion**, **CIX**, and **Keppel DC**.

Hyperscale Data Centres

AWS, Microsoft, and **Facebook** continue development at various sites in the Dublin Metro area. **CAP Developments Limited** applied for planning permission for the first of three potential data centres at Drogheda, Co. Meath.

Digital Hosting 2019 Q4 Update

Q4 2019

Masterplans
10 Estimated
277 MW

Current Planning Applications
6 Currently in the Planning Process
193 MW

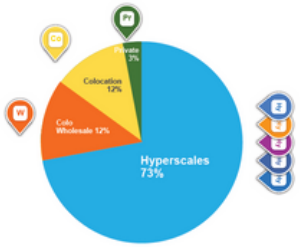
Planning Permission
33 with Planning Permission Approved
659 MW

Under Construction
11 currently Under Construction
228 MW

Operational Data Centres
55 in Q4 2019
658 MW
Includes 20 MW Private

Data Centre Types

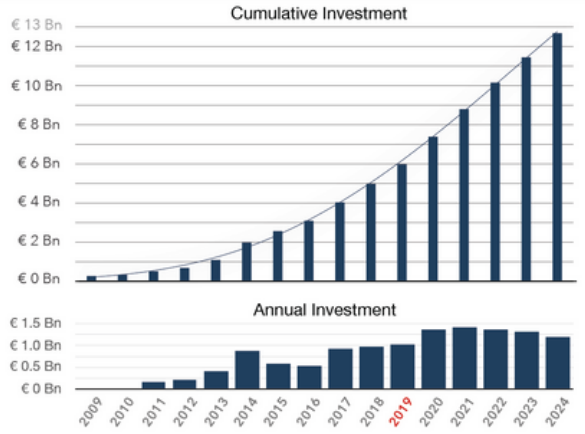
Operator business model



There were fifty-five data centres in operation in Ireland in Q4 2019. Hyperscales continued to dominate in terms of scale, with 73% of the MW capacity.

Construction Investment 2009 - 2024

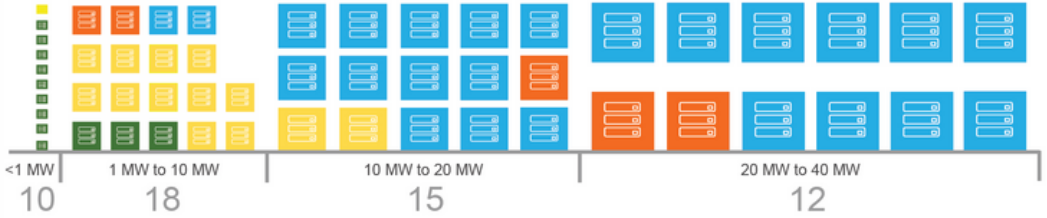
Cumulative and Annual investments in data centres



Ireland Hosts Commercial Data Centres of all Sizes

Fifty-Five operational data centres in Ireland by Q4 2019

55



Highlights Q4 2019

The Big Picture

188 MW
Newly Planned Data Centres
New Applications for five Data Centres plus two in Masterplans

44
Data Centres in Development
Under Construction or with approved planning

€1.3 Billion
Investment
Average annual investment expected for 2020-2024

638 MW
Cloud & Managed Services
Colocation, Wholesale, and Hyperscale Capacity

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Host in Ireland is an award-winning strategic global initiative created to increase awareness of the benefits of hosting digital assets in Ireland as well as Irish companies that are designing, building, and operating data centres globally.

There are many benefits to hosting in Ireland: access to affordable power; redundant network and bandwidth capacity; along with a variety of data centre providers that offer an array of services sustained by the the “6 Ps”: Policy, People, Pedigree, Pipes, Power, and Proximity.

Ireland is not only the optimum location to host data, but as a global centre of excellence, it is also exporting data centre related products and services all over the globe.

Host In Ireland Partners

Although many of Host in Ireland’s partners are competitors, they have come together as a collective through Host in Ireland. This collective work together to promote the capabilities of Ireland as a centre of data excellence.

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