Briefing note: Data centres - why they must be powered by renewable energy

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Promoting Ireland as a data centre hub is a key element of the government's Enterprise Strategy[i]. Eirgrid estimates that demand from data centres could account for up to 36% of Ireland's electricity demand by 2030, along with 75% of new electricity demand growth (Eirgrid, 2017:30)[ii]. The Irish Academy of Engineering predicts that data centre development will add at least 1.5 million tonnes to Ireland's carbon emissions by 2030, a 13% increase on current electricity sector emissions, and will require an investment of €9 billion by 2027[iii].

For example, if Amazon's eight centre project in Mulhuddart, Dublin 15, is realised, by 2026 it would use c. 4.4% per cent of the State's entire energy capacity, the equivalent of Galway city, but employ only 30 people post construction, largely in facility maintenance[iv]. The Apple data centre proposed for Athenry, Co. Galway, would ultimately use over 8% of the national capacity, more than the daily entire usage of Dublin, and would require 144 diesel generators as back-up[v].

The government has acknowledged that "data centres pose considerable challenges to the future planning and operation of Ireland's power system"[vi]. These challenges include higher electricity costs for consumers[vii] and regional security of electricity supply. The government states that to address these issues it will support "the recalibration of the Renewable Electricity Policy and Development Framework to provide guidance to planning authorities on electricity generation and supply potential for enterprise development". It is essential that a revised framework stipulates that **new data centres must be powered by onsite or new offsite renewable energy, with existing centres required to transition rapidly to onsite or new offsite renewables.**

Corporations have been forced by increasing civil society pressure, such as the Greenpeace Click Clean campaign, and through consumer pressure[viii], to commit to renewable power for data centres. The Danish Council on Climate Change recommended in April 2019 that the Danish government legally binds data centre owners and developers to contributing to the infrastructure required to supply the centres with renewable energy, such as wind and solar farms[ix]. Data centres such as Apple's centres in North Carolina[x] and Nevada[xi] are already operating on 100% onsite-generated renewable energy, demonstrating that this is technically feasible.

Currently, many companies claim to operate data centres powered by 100% renewable energy. However, the energy is largely sourced indirectly through Renewable Energy Certificates or Purchase Power Agreements[xii], which means that the energy is sourced from the grid, which in Ireland is 69% fossil fuel powered[xiii]. If we continue to allow companies to virtually purchase clean energy where it is cheapest to create, while actually using and increasing demand for dirty energy in Ireland, we allow them to profit while our real emissions continue to rise. It is crucial therefore that data centres are powered directly by onsite renewable energy generation such as rooftop solar farms or new offsite generation such as offshore wind or solar farms.

[i] Department of Business, Enterprise and Innovation (2018) Government Statement on the Role of Data Centres in Ireland's Enterprise Strategy. Available: https://dbei.gov.ie/en/Publications/Publication-files/Government-Statement-Data-Centres-Enterprise-Strategy.pdf (Accessed 2019, September 22)
[ii] Eirgrid (2017) *Tomorrow's Energy Scenarios 2017*. Dublin: Eirgrid. Available: http://www.eirgridgroup.com/site-files/library/EirGrid/EirGrid-Tomorrows-Energy-Scenarios-Report-2017.pdf (Accessed 2019, September 22)
[iii] Irish Academy of Engineering (2019) Electricity Sector Investment for Data Centres in Ireland. Available: http://iae.ie/wp-content/uploads/2019/08/Data-Centres-July-2019.pdf (Accessed 2019, September 22)
[iv] Lillington, K (2018) Net Results: Data centres need to power down their energy requirements. Available: https://www.irishtimes.com/business/technology/net-results-data-centres-need-to-power-down-their-energy-requirements-1.3561745 (Accessed 2019, September 22)
[v] Climate Home News (2017) 'Tsunami of data' could consume one fifth of global electricity by 2025. Available: https://www.theguardian.com/environment/2017/dec/11/tsunami-of-data-could-consume-fifth-global-electricity-by-2025 (Accessed 2019, September 22)
[vi] Department of Business, Enterprise and Innovation (2018) Government Statement on the Role of Data Centres in Ireland's Enterprise Strategy. Available: https://dbei.gov.ie/en/Publications/Publication-files/Government-Statement-Data-Centres-Enterprise-Strategy.pdf (Accessed 2019, September 22)
[vii] Taylor, C (2018) Data centre demand to lead to higher energy prices. Available: https://www.irishtimes.com/business/energy-and-resources/data-centre-demand-to-lead-to-higher-energy-prices-1.3581998 (Accessed 2019, September 22)
[viii] Sverdlik, Y (2016) How Renewable Energy is Changing the Data Center Market Available: https://www.datacenterknowledge.com/archives/2016/08/11/how-renewable-energy-is-changing-the-data-center-market (Accessed 2019, September 22)
[ix] Gadd, S (2019) Two new wind turbine parks needed just to cope with new data centres, council warns. Available: http://cphpost.dk/news/two-new-wind-turbine-parks-needed-just-to-cope-with-new-data-centres-council-warns.html (Accessed 2019, September 22)
[x] Data Centre Knowledge (2019) How Does Apple Power its North Carolina Data Center? https://www.datacenterknowledge.com/the-apple-data-center-faq-part-2 (Accessed 2019, September 22)
[xi] Sullivan, M (2018) Apple Now Runs On 100% Green Energy, And Here's How It Got There. Available: https://www.fastcompany.com/40554151/how-apple-got-to-100-renewable-energy-the-right-way (Accessed 2019, September 22)
[xii] Chernicoff, D (2016) How data centers pay for renewable energy. Available: https://www.datacenterdynamics.com/analysis/how-data-centers-pay-for-renewable-energy (Accessed 2019, September 22)
[xiii] Sustainable Energy Authority of Ireland (2019) Renewables. Available: https://www.seai.ie/data-and-insights/seai-statistics/key-statistics/renewables/ (Accessed 2019, September 22)