CAN SUSTAINABLE AND RESILIENT DATA CENTRES IN IRELAND BECOME A REALITY?

Marc Garner, VP, Secure Power Division, Schneider Electric UK and Ireland

The convergence of technology, data generation and connectivity are driving prolific changes throughout society. From our consumption of social media and digital services, to enterprise ambitions and public services, society is becoming ever-more digitised.

There also remains the need to decarbonise the economy and make that digital future more sustainable. Indeed, during the last decade, digital transformation and connectivity requirements have grown at an unprecedented rate, placing great demands on the data centres, networks and energy grids that power the digital domain.

In Ireland alone, it's estimated that 90 per cent of people aged between 16 and 24 are using social media platforms, and that many other generations are quickly becoming accustomed to a hyper-connected life. As we look to build a sustainable and resilient, carbon-neutral future, it's paramount that we begin to decarbonise the data centres and infrastructure systems underpinning such digital services.

Sustainability has fast risen to the top of the business agenda. An article in the Harvard Business Review previously highlighted that 99% of large company CEOs agree that "sustainability issues are important to the future success of their businesses."From technology vendors to Internet Giants, sustainability has indeed become a key topic within the data centre sector. Large players such as Microsoft, Facebook, Amazon, and Google all have significant footprints in Ireland, and their public commitments to sustainability have become all the more important to their operations.

Data centres in Ireland

For many years data centres have been seen as large consumers of power, with various analyses suggesting they represent 1 - 2% of global electricity consumption. Prior to the EirGrid and CRU consultations, data centre construction investment in Ireland totalled €7 billion in the decade between 2010 and 2020. The Irish Times also reports that there are now 70 operational data centres in Ireland, using an estimated 900 megawatts (MW) of power.

With the projected demand for digital services expected only to increase, the emphasis on both energy efficiency and a reduction in power consumption must be considered within the wider context of the number of facilities being built in Ireland.

Future digital economies will undoubtedly depend entirely on data centres, so it is incumbent on both technology vendors, and facility owners and operators to ensure they deliver their value in the most efficient, sustainable and responsible a way as possible, while addressing valid concerns from the public. As the country continues to be a key location for the hyperscale and Internet Giant communities, it's fundamental it finds a means to balance sustainable operations with resilience for the grid.

Interestingly, the belief that Ireland's data centre boom is complicating climate change efforts is a far cry from the actual efforts of the country's big tech stakeholders. Many, such as Amazon, have worked to improve the resilience and sustainability credentials of the operators residing there. AWS, for example, has funded a 23.2MW wind farm in Cork, which will support its €350 million facility in Drogheda. From a sustainability perspective, Ireland exceeded its 2020 RES capacity target by delivering 43% of all electrical power generated using renewable sources.

Further, data centres are part of a technology industry that employs 140,000 people in Ireland. According to an ESRI report, computer services, which also rely heavily on data centre infrastructure, accounted for more than a quarter (26%) of exports – around €117 billion of the total €448 billion of Irish goods and services. Such positive impact means data centres play an important role in Ireland's digital future not only from a technology perspective, but also for GDP.

Sustainable ambitions

Interestingly, a report from Schneider Electric and 451 Research found that 97% of colocation customers are demanding contractual commitments to sustainability. Of the +800 global operators surveyed, 57% believe that efficiency and sustainability will be important competitive differentiators within three years and more than half (55%) of those also surveyed were taking some action.

There are, of course, many reasons for data centre operators to embrace environmentally sustainable practices. Customers and investors are demanding it, industry-led movements such as the Climate Neutral Data Centre Pact require it, and it is not just good for business, but it's essential for the planet.

Fundamentally, however, sustainability is about protecting the environment and its resources for future generations. Ireland has much to do in this respect and help from any quarter is to be encouraged. CSO reports, for example, have shown the country to be among the highest per capita carbon emitters in Europe.

Over the last decade, technology and efficiency improvements have undoubtedly provided the sector with a crucial vehicle to reduce carbon emissions and energy losses, but those alone will not be enough to deliver the next leap in sustainable data centres. What is clear is that operators need a holistic and actionable strategy to challenge thinking outside the confines of traditional design and operational strategies.

Embracing opportunities to integrate with the grid and ingrain circular economy principles will also be essential, as will resource and energy efficient facilities powered by renewables. But how will operators achieve this?

An actionable strategy

At the first step, it's paramount that operators agree an integrated strategy; empowering design, procurement, facility and sustainability teams to collaborate to reach a common goal. At the second, they must utilise resource efficient data centre designs, which use fewer raw materials and offer an extended lifecycle through technological innovation.

At the third, operational efficiency becomes essential. Here management software can enable detailed visibility of critical systems, enabling operators to track energy usage and benchmark performance against measurable targets.

At the fourth, renewable energy strategies, encompassing renewable energy credits (RECs), on site, or distributed power generation via microgrids, or offsite generation via power purchase agreements (PPAs) are critical both to meet demands for a resilient grid and to support the CRU's objectives.

Finally, it's crucial to decarbonise the supply chain. Scope 3 emissions are the industry's biggest challenge and by understanding the embodied carbon footprint of their products and services, operators can reduce emissions. The fact is that there is no magic bullet for improving data centre sustainability. But with relentless collaboration and transparency, the country's operators can continue to make Net Zero data centres a reality and support digital economic growth, sustainably.