

HOUSE OF COMMONS, ENVIRONMENTAL AUDIT COMMITTEE

RISKS AND OPPORTUNITIES TO THE SUSTAINABILITY OF DATA CENTRES IN THE UK

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About BusinessLDN

BusinessLDN is a business campaigning group with a mission to make London the best city in the world in which to do business, for the benefit of the whole UK. We convene and mobilise business leaders to tackle the key challenges facing our capital. Our membership comprises around 170 organisations across a wide range of sectors, including energy, technology, construction, development, and industrial logistics. A full list of our members is available [here](#).

The role of data centres in London

Data centres are a critical component of the UK's digital infrastructure, underpinning economic growth, public services, and the adoption of artificial intelligence. In September 2024, the UK Government designated UK data infrastructure, including data centres as critical national infrastructure.

In London, they are particularly important for high-growth, data-intensive sectors such as financial and professional services, life sciences, telecommunications, and web-based applications that rely on low-latency services and large volumes of on-demand data transfer.

According to techUK estimates, UK data centres contribute around £4.7 billion in annual gross value added (GVA) and support approximately 43,500 jobs across the UK, with activity heavily concentrated in London, Europe's largest data centre market.¹ The significance of data centres in the context of climate change and the Government's net-zero targets should therefore be considered holistically.

¹ techUK, foundations for the future (2024) <https://www.techuk.org/resource/techuk-report-foundations-for-the-future-how-data-centres-can-supercharge-uk-economic-growth.html?form=MG0AV3&utm>

Impact of data centres on UK energy networks

In the short term, data centres represent a relatively modest but growing share of UK electricity demand. However, it is important to distinguish between electricity use and carbon emissions. The emissions impact of data centres is determined primarily by the carbon intensity of the electricity they use, rather than the demand itself.

As fully electrified assets, data centres' direct emissions, also known as scope one, are limited, with the majority of their footprint arising from electricity generation. The same facility can therefore have very different carbon impacts depending on whether it is powered by carbon-intensive fossil-fuel generation or low-carbon sources such as renewables and nuclear. As the UK electricity grid continues to decarbonise through rapid expansion of renewables and the phase-out of high-carbon generation, the carbon intensity of grid electricity is expected to fall over time, even as overall demand, including from data centre operations, grows.²

This distinction is critical for policy: rising electricity demand from data centres does not inherently conflict with net-zero targets if it is met with low-carbon generation. Moreover, data centres can actively support decarbonisation by serving as large, anchor customers for renewable energy. By entering into long-term power purchase agreements (PPAs), they can provide renewable developers with the certainty needed to make projects commercially viable, thereby accelerating investment in clean power.

The key challenge, therefore, is not reducing electricity demand but ensuring that sufficient levels of low-carbon electricity generation and grid infrastructure are developed *alongside* the proliferation of new data centres so that these energy sources can be fully utilised.

The types of energy data centres use can vary. For example, data centres often rely on diesel generators for backup power, but cleaner alternatives are available. Using centralised gas generation alongside battery storage and advanced grid technology can provide flexible support to the electricity grid while keeping data centres reliable.

This approach benefits all grid users and, when combined with smarter on-site and grid-connected power solutions, can reduce the need for costly and slow infrastructure upgrades, helping cut carbon emissions, lower costs, and speed up connection times.

² Carbonbrif.org.uk (2025) <https://interactive.carbonbrief.org/how-uk-transformed-electricity-supply-decade/index.html?utm>

Mitigation of environmental impacts from data centres

The data centre sector has also been proactive in reducing its own environmental impact. Data centre operators are among the largest early adopters of energy efficiency measures, advanced cooling technologies, and carbon reporting standards.

For example, companies such as Google have implemented advanced cooling systems like AI-optimised data centre management, which has reduced cooling energy use by up to 30%³. Similarly, Microsoft has piloted innovative approaches such as underwater data centres to improve cooling efficiency and lower energy consumption⁴.

New data centres are also typically developed in a coordinated manner, with operators working closely with grid providers and local authorities to assess capacity, co-invest in necessary upgrades, and ensure long-term system resilience. This collaboration often leads to enhanced substations and stronger local electricity networks, delivering benefits to local businesses and residents. Modern facilities also incorporate on-site resilience measures, including battery storage, backup generation using renewable energy or low-carbon fuels, and advanced systems to manage peak demand efficiently.

In terms of water use, most modern UK and European data centres largely rely on air-based or hybrid cooling, significantly reducing or eliminating operational water consumption. Where water is required, closed-loop systems recycle volumes repeatedly. A techUK report, based on a survey of 73 data centres conducted with the Environment Agency, found that 51 per cent of surveyed data centres use waterless cooling systems and 64 per cent consume less than 10,000 m³ of water per year, a level comparable to, or lower than, other non-industrial uses.⁵

Electricity demand and connections reform

The Committee is right that expanding data centre capacity will increase electricity demand over time. However, these challenges are largely structural, driven by how grid connections have historically been allocated. The previous “first-come, first-served” system created a backlog of projects holding capacity without progressing. As a result,

³ Urs Holzle, Google blog (Feb 2020) <https://blog.google/company-news/outreach-and-initiatives/sustainability/data-centers-energy-efficient/#:~:text=By%20directly%20controlling%20data%20center,unit%20of%20IT%20equipment%20energy>

⁴ Microsoft, sustainable by design (2024) <https://www.microsoft.com/en-us/microsoft-cloud/blog/2024/12/09/sustainable-by-design-next-generation-datacenters-consume-zero-water-for-cooling/?msocid=1dc95b0bd5646cea2ff94dc1d4c46d55&utm>

⁵ Data centre review (2025) <https://datacentrereview.com/2025/08/half-of-englands-data-centres-now-use-waterless-cooling-techuk-report-finds/?utm>

stated demand far exceeds the grid’s practical ability to support new infrastructure, including data centres, housing, and commercial development. Reforms by Ofgem and the National Energy System Operator are now addressing this by clearing the queue, accelerating viable projects, and moving toward a “first-ready, first-served” model.⁶

Planning and consent

In terms of planning and approval, we believe that it would be beneficial for data centres that have secured planning permission and have confirmed power connections to be granted preferential consenting powers, particularly to expedite the approval of lengthy transmission connections and reduce delays in grid integration.

Priority should also be given to building data centres on previously used land and in campus-style clusters rather than as isolated sites on undeveloped land. Grouping data centres together makes infrastructure more efficient, allows direct connection to higher-capacity transmission networks, and reduces pressure on local grids. It also brings wider benefits, such as creating skilled job hubs, improving biodiversity and water management, and enabling shared use of heat and flexible energy resources.

Summary

Data centres can be fully compatible with the UK’s net-zero targets if integrated into a decarbonised electricity system. They are strategic infrastructure that support economic growth, innovation, AI technology, and the transition to a low-carbon economy, while boosting high-growth businesses in London and across the UK. In BusinessLDN’s view, the key policy priority for the Government should be to ensure that their growth is aligned with the parallel expansion of renewable energy, transmission capacity upgrades, connections reform, and planning reform – enabling economic development while progressing net zero.

⁶ NESO, connections reform (2026) <https://www.neso.energy/industry-information/connections-reform>