

The sustainability challenge facing data centres

Environmental, social, and governance considerations have grown increasingly important in real estate investing. Real estate investors are using metrics on governance, community impact and other factors to evaluate properties and prioritise sustainability.

For data centres, ESG considerations have proven to be particularly vital. These facilities account for an estimated 1% of worldwide electricity use, so the impact on global energy demand is significant. And data demand will only increase — from consumers, businesses and emerging technologies such as artificial intelligence, driverless car technology and 5G networks. We expect the rate of demand to grow exponentially. This is a key driving factor why data centre landlords and tenants are taking important steps to ensure that ESG considerations are a priority.

While data centres are energy-intensive, much has been done to help these facilities operate in an energy efficient way. In the last decade, even as data use skyrocketed, technological enhancements such as processor efficiency improvements and reductions in idle power significantly reduced the electricity requirements of data centre servers.

In addition, the growth in the number of servers needed to process this massive amount of data has slowed significantly, as technological advancements have allowed each individual server to process increasingly more data. In fact, despite the overall increase in power usage, the energy intensity of data centres has actually been reduced. What this means is that the amount of energy required to process a terabyte of data has fallen. Some research has estimated a 20% fall in energy intensity over the last five years. That's more than other energy intensive industries.

Beyond steps to reduce energy use, data centre landlords and tenants are constantly seeking new and innovative ways to improve energy efficiencies and promote ESG. Microsoft recently used hydrogen fuel cells to back up some of its data centre servers, which could help replace diesel-powered backup generators.

Utilising the excess heat produced by data centre cooling equipment is another emerging area of energy efficiency, particularly in Scandinavia, the Netherlands and Germany. For example, an initiative in Stockholm aims to heat 10% of the city with waste heat from data centres by 2035. Solar power and other renewable energy sources are also being explored by landlords and other stakeholders to supplement, or in some cases replace, the standard power supply for data centres.

Landlords can help maximise data centre efficiencies by investing in system upgrades and providing grants to tenants targeting improved efficiency and sustainability. However, ESG initiatives are most impactful when landlords actively partner with their tenants.

Many tenants, particularly the largest cloud service providers, known as 'hyperscalers', have led efforts to improve energy efficiency. Sustainability has been a high priority for these firms for some time, with several large tenants and technology companies setting significant carbon reduction goals. Reducing emissions through data centres will be a key effort. In 2018, Apple and Google generated enough renewable energy to run 100% of their data centres. Facebook, Microsoft, and Amazon have all made significant commitments, each setting goals to run their data centres on mostly renewable energy in the next few years. ■



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