

Data centres: Understanding this unique sector to maximise opportunities

As a global investor in sustainable infrastructure, Actis is focused on investing in real assets critical to supporting the three megatrends driving the global economy: decarbonisation, digitalisation and supply-chain transformation. One of the property sectors underpinning these megatrends, particularly digitalisation but also decarbonisation, is the data centre sector.

Data centres offer a compelling investment opportunity in the real estate sector, providing vital infrastructure for continued growth in our increasingly online and technology-dependent economies and societies. The data centre market has been growing rapidly, and this growth shows no sign of slowing down, as data consumption continues to expand apace.

McKinsey Global Institute has forecasted that the world could be consuming 20 times more data in 2030 than we did in 2020.¹ This predicted market growth is also reflected in the huge increase expected in data centre electricity consumption, with the International Energy Agency (IEA) forecasting global data centre electricity consumption to jump from 460 terawatt hours in 2022 to more than 1,000 terawatt hours in 2026, equivalent to Japan's electricity consumption.² This secular demand trend was well under way before the launch of ChatGPT in late 2022, but the adoption of generative AI has only further fuelled this trend, creating more demand for data processing and storage, as AI tools such as ChatGPT are approximately 10 times more power hungry than traditional online search engine tools.³

The data centre market writ large, therefore, looks set for continued growth, but given the electricity needs of these assets, power will become a major constraining factor and also a key differentiator in the market creating winners and losers. A large majority of data centre capacity globally is consumed by hyperscalers, including Google, Microsoft, Meta and Amazon, all of which have set decarbonisation targets and are aiming for net-zero carbon emissions by 2030 or 2040.⁴ Therefore, to ensure data centres are viable and attractive, they need to be sustainable and specifically catered to hyperscale customers.

A compelling data centre offering relies on far more than the development of buildings. The sector is a mix of real estate and infrastructure, and developments must deliver on both counts. The land, core and shell can be categorised as real estate, requiring the expertise typically associated with industrial property. But the success of these assets also depends on specialist knowledge of how to operate infrastructure, to be able to deliver a fully powered, energy-efficient, no-fail facility that runs 24 hours a day, all year long.

Often, pure real estate investors do not appreciate this infrastructure aspect. Likewise, infrastructure investors do not fully appreciate the real estate side of the business, especially local market practices, such as negotiating with land sellers, accessing power and obtaining project approvals. This is where Actis' experience across energy, infrastructure and real estate in Asia provides a genuine competitive advantage.

Real estate, digital and energy expertise in one

Amid the relentless digitalisation of economies and the surging demand for cloud services, AI and machine learning, investors should focus on comprehensive data centre strategies integrating real estate, digital and energy expertise. This is what Actis offers, with its holistic but hands-on approach and its builder-operator mindset.

Hyperscalers do not contract with anybody, and simply having a building that can house servers will not suffice. They will be laser-focused on cost but also on how efficiently the data centres operate and whether they can be powered by clean, renewable energy. Bringing forward such a proposition to market to attract and secure hyperscale tenants means investors need to have strong, senior teams made up of professionals with a track record of delivering for hyperscalers.

A key aspect of this expertise involves energy efficiency. Given that data centres consume vast amounts of energy, that power represents the largest operating cost item for data centres, and that efficiency is critical to limiting the carbon emissions of the infrastructure, this ought to be a priority for any developer and operator of data centres.

Over time, the sector has become increasingly efficient, with the key measure – the power usage effectiveness (PUE) ratio – coming down from a mean of 2 (which means as much power is used by the data centre as the servers) to 1.5. In some cooler regions, PUE ratios as low as 1.2 to 1.3 can be achieved. Actis has an average PUE ratio of 1.3 for a total design IT capacity of 454.3 megawatts across data centres completed or under development.⁵ This PUE ratio is a testament to the Actis team's focus on sustainability and driving efficiency gains, despite holding data centres across a diverse range of markets, including in warmer climates where they require more cooling. As an investor across a number of different types of infrastructure – including district cooling – that leverage different tools to maximise operating efficiencies, for example AI, Actis can cross-pollinate its expertise to stay ahead of the field when it comes to efficiency. The firm strives to maintain an industry-leading approach to efficiency across all data centre projects.

While efficiency will continue to become ever-more important, the reality, however, is that electricity consumption from data centres will accelerate at a faster rate than efficiency gains. To provide long-term, sustainable data centre solutions compatible with the decarbonisation targets of hyperscalers, clean energy is needed. This provides a major advantage for Actis, a leading energy-transition investor that has built or operated more than 18.5 gigawatts of renewable energy generation capacity globally.

Through our deep sector specialisation and our builder and operator model, we believe Actis is well positioned to develop solutions for these customers. Today the firm is building data centres for hyperscalers across Asia in our real estate

business, while at the same time providing renewable energy through energy platforms, using global relationships and insight to enhance both. Our ambition is to join up our sector specialisation, including in real estate and energy, to offer more integrated solutions that will be compelling for these customers, while enabling us to access a superior investment opportunity.

Actis' real estate, digital and renewable energy experience in our markets allows us to anticipate this, particularly when put together with the firm's sustainability approach that focuses on skills development, job creation and industrial contribution to support a Just Transition in the countries where we invest.

This model is being deployed to all Actis data centres in Latin America and Africa, but particularly in Asia, where the bulk of our efforts in this space are focused.

Asia: A driver of global growth and digital opportunity

Asia's real estate landscape benefits from three key trends that support the sector: (1) demographic shifts relating to urbanisation and the densification of wealth in cities; (2) real estate supply deficiencies, where current property supply is not fit for purpose, affordable or sustainable enough to attract demand; and (3) demand for yield, the nascent but growing aggregation of local institutional capital that is key to delivering exits on investments. Taken together, these act as secular demand trends underpinning growth. Add the fact that Asia represents more than half of the global population, with growing middle classes and rapidly developing but diverse markets, and the region is all the more compelling. For the data centre market, it is also crucially home to increasing internet penetration with growing data needs.

During the past decade or so, the data centre space has been focused on enabling the development of cloud computing. As such, most of the demand has come from cloud services hyperscalers operating in major gateway cities. Such solutions needed to be based geographically close to major demand centres to reduce latency (the time it takes to request and send data), and as a result, cities such as Tokyo, Osaka, Seoul, Hong Kong, Singapore and Mumbai attracted a lot of data centre projects.

This trend is continuing, with growing demand for low-latency data centres to serve major urban areas and business hubs. In addition, however, a new type of data centre demand has emerged. Generative AI training modules do not have the same requirement to minimise latency, and this means the data centres developed to serve such technology do not need to be located near major cities, which tend to be constrained in both land and power. This widens the availability of data centre locations so they can be developed on more affordable land with greater access to power, and renewable power, in particular.

Such considerations have seen locations such as Johor Bahru in Malaysia become up-and-coming sites for building data centres. Johor Bahru offers plentiful land and power at a lower cost than major gateway cities, and it is adjacent to Singapore, a major connectivity and data centre hub, but one that is constrained in terms of land, power and high development costs. Microsoft has recently acquired two plots of land for data centres in Johor Bahru, and Actis' data centre platform in Asia, Epoch Digital, is also in the process of developing a data centre there.

Data centres for our epoch

Actis launched Epoch Digital as an integrated data centre platform in Asia with a current portfolio under development offering approximately 200 megawatts of IT capacity across three projects in key markets: Johor Bahru, Malaysia; Taipei, Taiwan; and Seoul, South Korea. The business aims to develop, own, and operate a scalable and geographically diversified portfolio across these strategic and highly selective markets where hyperscale customers are growing, with imminent demand, and where Actis and the Epoch Digital leadership team enjoy a competitive advantage. The business is led by CEO Hak Kiat Chng and COO Pei Ping Lim, who have worked together for more than a decade and led the full-cycle development of more than 250 megawatts of IT capacity in the target markets.

The platform is also leveraging Actis' deep expertise and capabilities in data centres, real estate, clean energy and sustainable infrastructure to provide compelling energy-efficient and cost-effective solutions to hyperscale customers. Epoch Digital illustrates Actis' thoughtful approach to the data centre market – the data centres are being brought forward in highly targeted markets to provide tailored solutions and meet the needs of hyperscalers, thanks to an expert offering.

We believe the Actis track record in real estate, digital and energy infrastructure puts us in a strong position to capitalise on massive hyperscaler needs. Digitalisation and cloud adoption were already creating tremendous opportunities in the sector. AI is only adding further rocket-fuel to this growth.

Notes:

¹ [mgi_connected-world_discussion-paper_february-2020.pdf](#)

² <https://www.iea.org/reports/electricity-2024/executive-summary>

³ Electricity 2024, Analysis and forecast to 2026

⁴ Structured research: Aiming to Achieve Net-Zero Emissions, Google Sustainability; Microsoft will be carbon negative by 2030, The Official Microsoft Blog; Climate, Meta Sustainability; Amazon Climate Pledge

⁵ Actis in Numbers, Actis

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Actis is a leading global investor in sustainable infrastructure, investing in structural themes that aim to support long-term, equitable growth in defensive, critical infrastructure across the energy transition, digitalisation and supply-chain transformation.

Actis believes the firm's decades of global experience, operational know-how and strong culture allow it to create global sustainability leaders at scale and deliver competitive returns for investors. Actis is one of the longest-standing energy investors globally and a signatory to the Principles for Responsible Investment (PRI), an investor initiative supported by the United Nations.

You can learn more about Actis at www.act.is, or by contacting Sarah Douglas, director of communications and marketing at sdouglas@act.is.



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