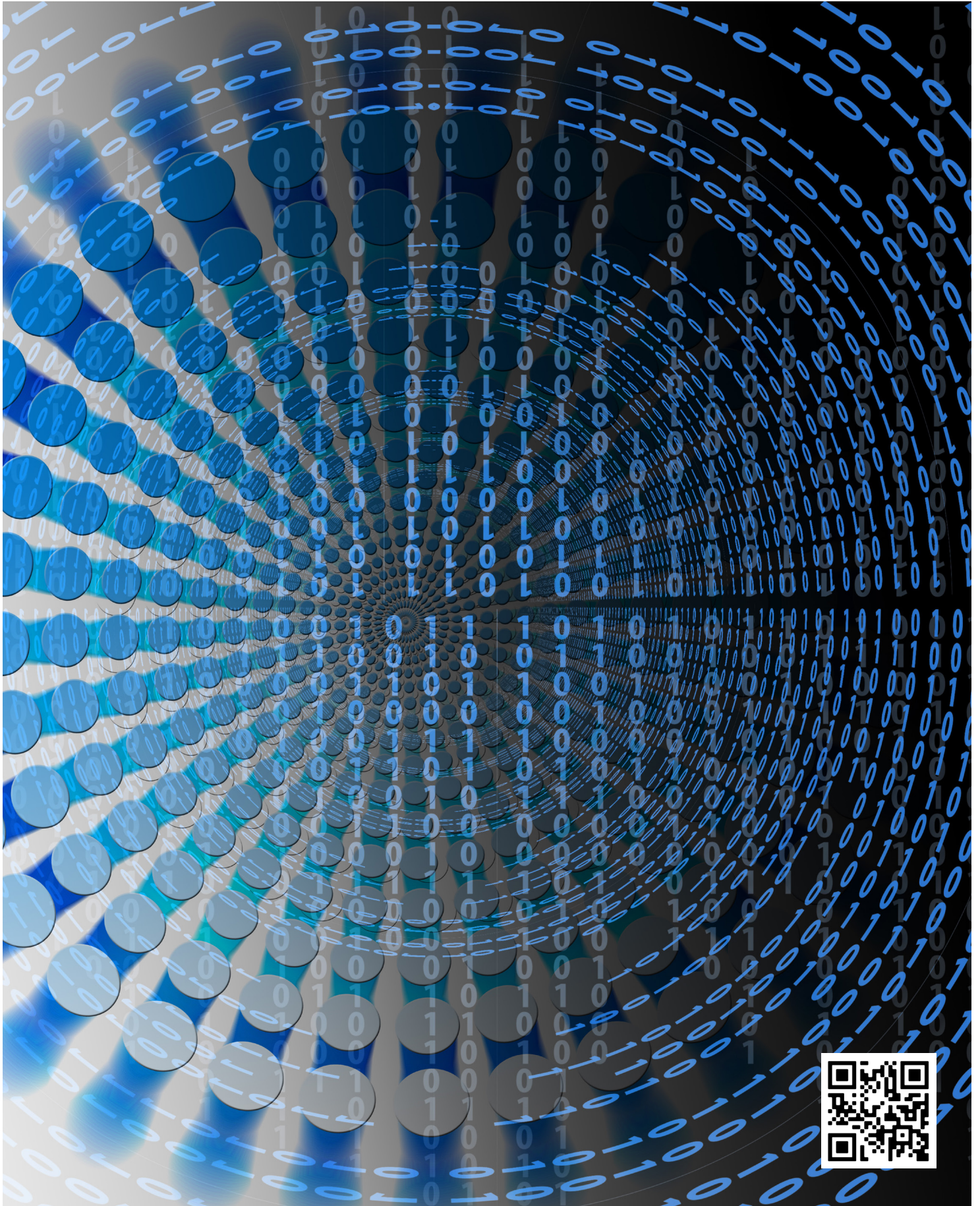


Asia Pacific - January 2025

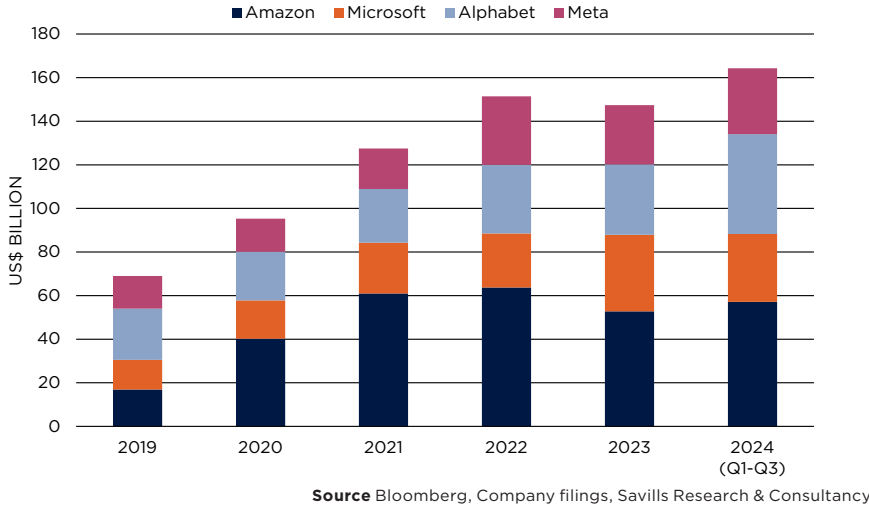
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Asia Pacific Data Centres

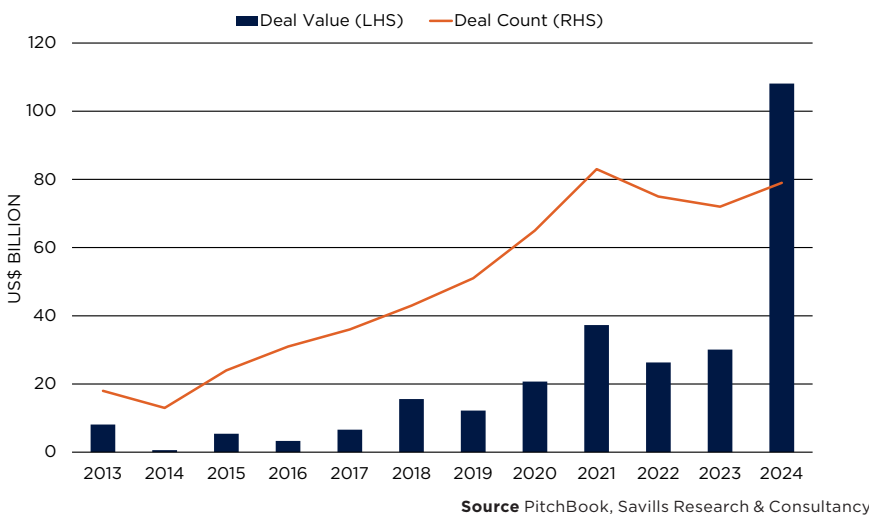


AI-driven demand fuels data centre investment

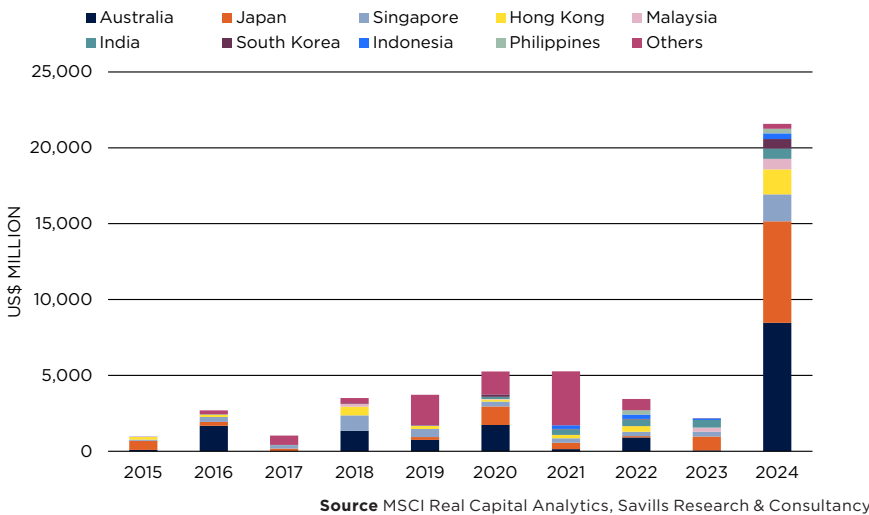
GRAPH 1: Capital Expenditure by Big Tech, 2019 to Q1-Q3/2024



GRAPH 2: Global Private Investments in Data Centres, 2013 to 2024



GRAPH 3: Asia Pacific Data Centre Transaction Volume by Market, 2014 to 2024



A RECORD YEAR FOR GLOBAL DATA CENTRE INVESTMENT

The global data centre market reached new heights in 2024, driven by the growing demand for generative AI, which has triggered a new wave of investment. In a historic year, companies like Amazon, Microsoft, Meta, and Alphabet were on track to collectively invest over US\$200 billion of capital expenditure, predominantly on data centres and AI-driven tools for the full year of 2024. This investment boom is not expected to slow down anytime soon, instead it is set to accelerate. Microsoft, for example, has unveiled a US\$128 billion investment plan for AI infrastructure and data centres globally for fiscal year 2025, including plans to deploy US\$3 billion in India over two years and US\$2.9 billion in Japan. President Trump has also announced a significant investment into AI worth, potentially, hundreds of billions. A new venture called Stargate will initially invest US\$100 billion to build an AI datacentre. Total investment could climb to US\$500 billion.

Alongside the tech giants, private equity firms are playing an increasingly important role in fuelling market growth. According to PitchBook, digital infrastructure general partners struck a record-breaking US\$108.1 billion in deals for data centres and related markets, more than three times the amount spent in previous year. Among the most prominent investments is a partnership between BlackRock, Microsoft, and UAE's MGX investment vehicle, which has created a global AI infrastructure investment fund aiming to raise US\$30 billion in private equity capital, which will then leverage up to US\$100 billion in potential investments. Additionally, in October 2024, KKR and Energy Capital Partners announced a US\$50 billion collaboration to develop data centres, power-generation projects, and transmission infrastructure. KKR has projected that global data centre spending could reach US\$250 billion annually, underscoring the sector's immense growth potential.

ASIA PACIFIC: THE NEXT DATA CENTRE POWERHOUSE

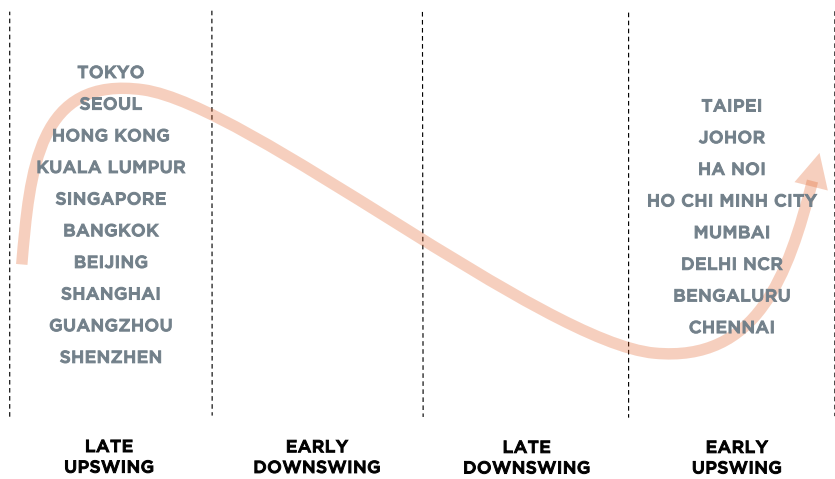
While North America remains the epicentre of AI innovation and data centre investment, the Asia Pacific region is also attracting PE interest as well. The headline deal of the year was Blackstone's US\$16.1 billion acquisition of AirTrunk, one of Asia Pacific's largest data centre platforms with over 800MW of capacity, in September 2024. This transaction not only stands out as the largest in the region but also as the largest deal in the global data centre market to date.

In June 2024, a consortium consisting of KKR and Singapore Telecommunications (SingTel) made a US\$1.3 billion investment in ST Telemedia Global Data Centres, a Singapore-based operator with a portfolio of more than 1.7GW of IT load, via redeemable preference shares, with detachable warrants. Upon exercise of the warrants in full, the consortium plans to inject an additional US\$920 million.

Another prominent player in this field is the Canada Pension Plan Investment Board (CPPIB). It has formed a US\$686 million Korean data centre joint venture with Pacific Asset Management Company to develop

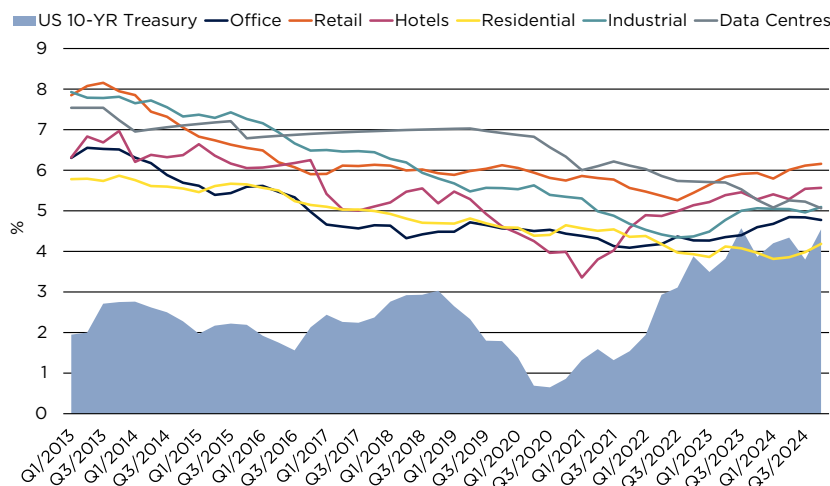
AI-driven growth is reshaping the data centre landscape, giving rise to innovative infrastructure, advanced energy solutions, and increased investment opportunities.

GRAPH 4: Prime Data Centre Market Cycle, 2H/2024



Source Savills Research & Consultancy
Note Note Late upswing: rental values rising, but growth is slowing
 Early downswing: rental values falling
 Late downswing: rental falls accelerating, close to reaching bottom
 Early upswing: rental values rising

GRAPH 5: Yields by Asset Class, Q1/2013 to Q4/2024



Source Oxford Economics, MSCI Real Capital Analytics, Savills Research & Consultancy

carrier-neutral hyperscale data centres in South Korea. CPPIB also has a venture with Japanese trading firm Mitsui & Co to build hyperscale facilities in Japan and a partnership with entities of Keppel Ltd to develop data centres in Asia Pacific and Europe.

However, as mentioned in our previous spotlight, much of the region’s existing supply is not yet equipped to host AI servers. Most of the investment grade properties are colocation data centres with an IT load of 10-40MW concentrated in more mature markets. According to MSCI Real Capital Analytics, the total transaction volume for data centre properties in Asia Pacific soared to US\$21.6 billion in 2024, nearly ten times the investment of 2023. Australia dominated the region, accounting for 39% of the total transaction volume, followed by Japan (31%), Singapore (8%), and Hong Kong (8%).

Other notable transactions included DigiCo REIT’s US\$1.3 billion acquisition of Global Switch Australia, which holds two colocation data centres in Sydney with a capacity of 26MW and an estimated cap rate of 4.4%. In Singapore, Keppel DC REIT acquired a 99.49% stake in Keppel Data Centre Singapore 7 & 8 for US\$1.0 billion from a JV of Keppel’s Connectivity Division and Cuscaden Peak Investments Private Ltd. This deal boasted a cap rate of 6.5% with a call option for the remaining 0.51% in 2025. The buyer has also agreed to pay an extra US\$258 million to the JV’s shareholders, ADCF and co-investors, should a 10-year land tenure lease extension to 2050 be approved for the data centre campus by the relevant authorities.

Despite strong leasing demand in tier-1 markets, the growth of rental values has begun to slow. Among the 18 prime data centre markets tracked across Asia Pacific, 10 were noted to be in the late upswing cycle in the second half of 2024. Tier-2 markets such as Johor, Hanoi, Ho Chi Minh City, Bengaluru, and Chennai are gaining traction, positioned

at the early stages of the upswing cycle. India's tier-1 markets, including Delhi NCR and Mumbai, remain on the cusp of expansion, fuelled by robust investment in hyperscale and AI data centre developments.

As the market becomes more competitive, yields for investment-grade properties in tier-1 locations are compressing, averaging around 5%, with rates ranging from 4.0% to 7.0%. Meanwhile, data centre development projects in emerging markets are offering higher yields, ranging from 9.5% to 10.5%, and are attracting growing interest from investors.

POWER CONSTRAINTS HAVE ENCOURAGED MORE INNOVATIVE SOLUTIONS

As demand for AI-driven activities continues to soar, a critical challenge for the industry remains the escalating hunt for power. AI-driven data centres require two to five times more power than traditional cloud-based facilities, prompting a fundamental shift in design and site selection approaches.

To address the issue, the market has seen more innovative solutions appearing. Microsoft recently launched a new design which optimizes AI workloads and consumes zero water for cooling. By adopting chip-level liquid cooling solutions, the facility can efficiently regulate temperature without water evaporation. Additionally, the system recycles water through a closed loop, continually circulating it between the servers and chillers to dissipate heat,

eliminating the need for a continuous supply of fresh water. This design is projected to save over 125 million litres of water annually per data centre.

On-site power generation, particularly from nuclear energy, is also gaining traction as a viable solution. Amazon Web Services (AWS) acquired Talen Energy's 960MW nuclear-powered data centre campus in Pennsylvania in March 2024, underscoring the growing interest in nuclear energy for AI-driven facilities. Similarly, small modular reactors (SMRs) have also emerged as a promising alternative, offering high-capacity, low-carbon power solutions. Several leading data centre operators have already signed agreements with SMR developers, with most deals taking place in the US. Google, for instance, has ordered six to seven SMRs from California-based start-up Kairos Power, expected to generate up to 500 MW between 2030 and 2035. AWS has signed an agreement with Energy Northwest to develop four advanced SMRs capable of generating 320MW for the first phase of the project, with plans to scale up to 960 MW. Similarly, Equinix has entered into a pre-agreement with Oklo to procure between 100 to 500MW of energy when Oklo's plants begin operations.

While China and Japan both have a strong nuclear and SMR pipeline, they have yet to see similar commercial projects taking place. Though a notable advancement has occurred in South Korea, where LS Electric, Korea Hydro and Nuclear Power

Corporation (KHNP) signed a memorandum of understanding in December 2024 to explore AI data centres powered by SMR technology. KHNP is currently developing its SMR product, the i-SMR, an integrated pressurized water SMR with an electrical output of 170MW.

NEW REGIONAL HUBS EMERGE TO OVERTAKE EXISTING MARKETS

While these solutions present great potential, the existing power and land constraints in many mature markets have paved the way for new regional hubs to emerge. A prime example is Johor, Malaysia, which has benefited from Singapore's 2019 moratorium on data centre development. Although Singapore lifted the moratorium in 2022, rising land and electricity costs, coupled with licensing hurdles, have limited expansion opportunities. Johor has since become a natural choice for regional capacity expansion, hosting nearly 400MW of live capacity—roughly half of Singapore's 1,072MW total in just three years. Additionally, Johor boasts 3,300MW of planned capacity, compared to Singapore's 445MW pipeline, positioning it as a significant hub for future growth.

Moreover, Singapore and Malaysia have recently signed an agreement to create the Johor-Singapore Special Economic Zone (JS-SEZ), which aims to attract high-value investments in 11 economic sectors, with the digital economy identified as one of the key sectors targeted. Through combining Malaysia's natural resources and Singapore's global connectivity and governance standards, this initiative will further enhance the appeal of Johor as a growing regional hub.

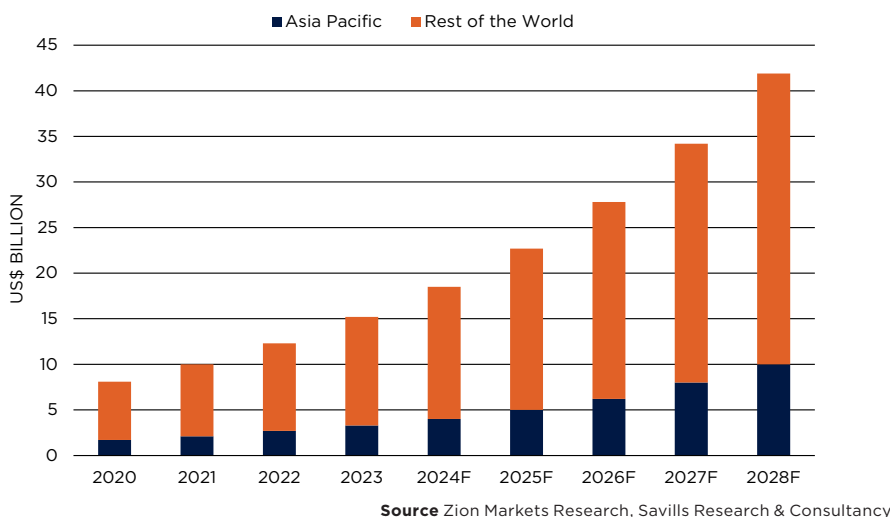
EDGE DCS ARE GAINING PROMINENCE

As traditional large-scale data centres struggle to secure power and land, edge data centres are gaining traction, particularly in tier-1 markets.

Edge data centres are smaller facilities, often located in urban areas. They are designed to optimize operations which require low latency through edge caching and edge computing, supporting applications such as augmented reality, autonomous driving, and the Internet of Things (IoT). While conventional edge data centres typically operate with a capacity of 500kW or less, the surge in data generation has led to the development of facilities with capacities of 2 to 5 MW.

This type of facility offers several advantages compared to the large-scale

GRAPH 6: Edge Data Centre Market Size, 2020 to 2028F



Source Zion Markets Research, Savills Research & Consultancy

colocation or hyperscale data centre, including faster deployment, scalability, and lower costs. Their smaller size allows them to be built on urban plots or repurposed from existing buildings. By utilizing existing structures, these data centres can leverage the established power infrastructure and potentially be exempt from certain permits, such as traffic and environmental impact assessments, thereby significantly reducing both construction time and costs.

Furthermore, edge data centres present an attractive opportunity for domestic and smaller players. Unlike the capital-intensive hyperscale

market, where large international operators dominate, edge data centres provide a more accessible entry point for local investors. As the demand for low-latency services continues to grow, edge data centres are likely to emerge as a key alternative asset class across the region.

Looking ahead, the global edge data centre market is expected to grow at an average annual rate of 23% beyond 2024, with the Asia-Pacific region anticipated to experience even faster growth at 25% per year. By 2028, Asia Pacific is projected to account for approximately 24% of the global edge data centre market.\

A PROMISING FUTURE AHEAD

Looking forward, Asia Pacific's data centre market is poised for sustained growth as data centres have become the backbone of the digital economy, supporting the operation of a wide range of industries and enabling critical technologies. As AI continues to evolve, the need for sophisticated infrastructure will only intensify, creating new opportunities for investment and innovation.



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