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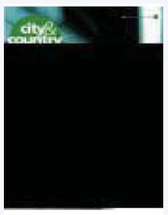
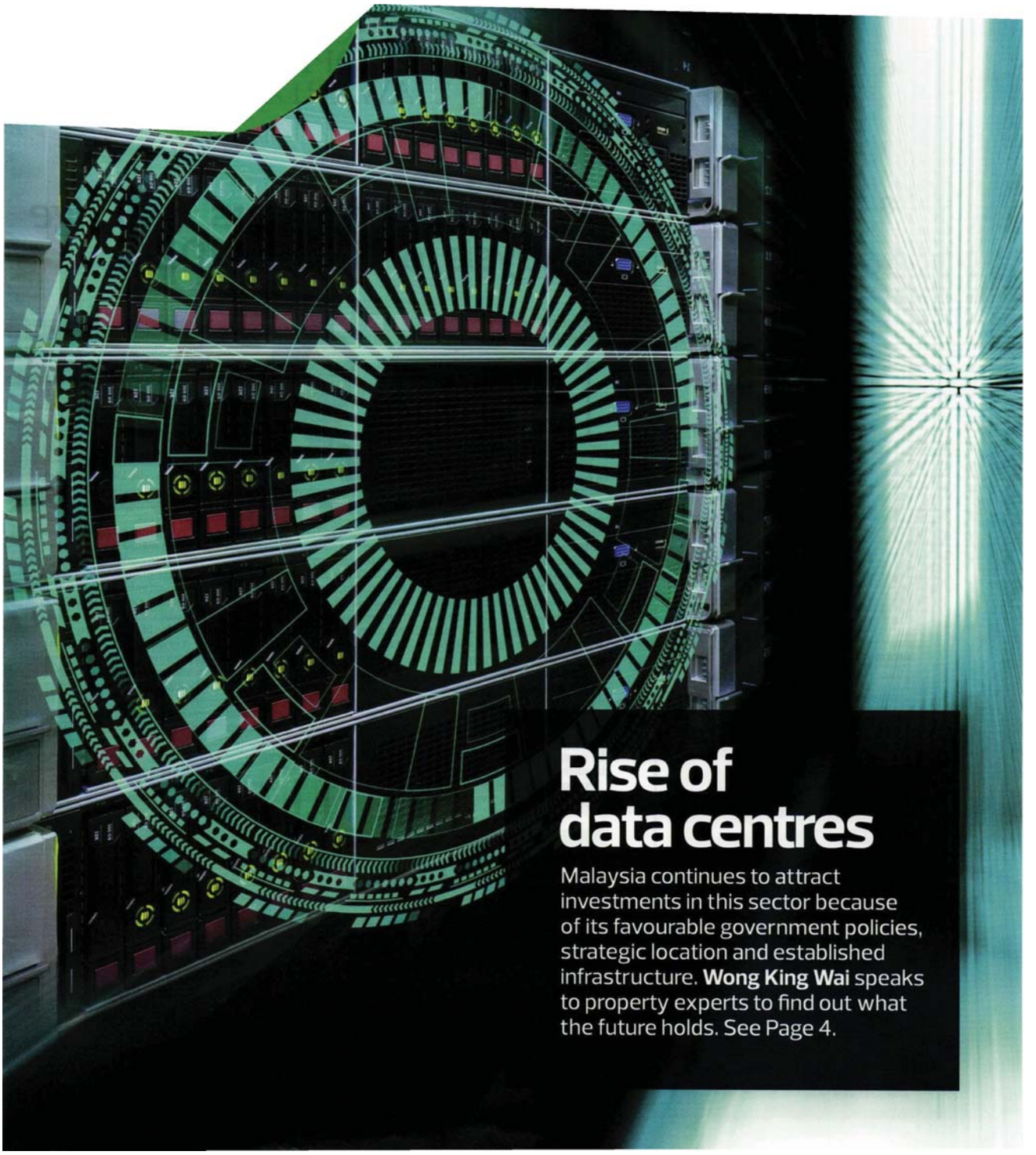


01 JUL, 2024

Data centre sector in Malaysia continues to grow

The Edge, Malaysia



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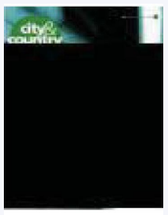

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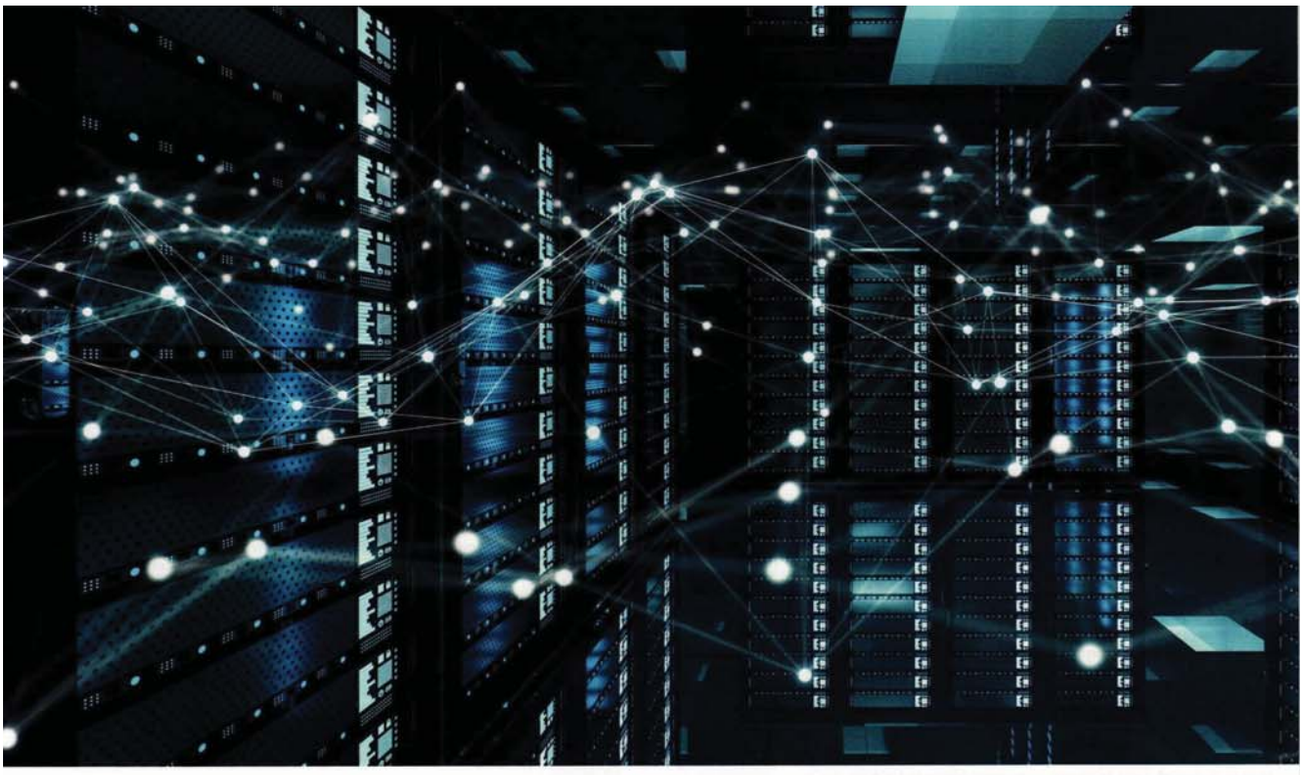

Data centre sector in Malaysia continues to grow

BY **WONG KING WAI**
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The growing demand for data centres has benefited Malaysia. Data centres are facilities that manage data and applications through a network of servers and storage devices. As more companies use cloud computing — with on-demand access to computing resources — data centres will play an increasingly important role.

"Based on our records, NTT Global Data Centers was the first to develop a data centre in Malaysia — in Cyberjaya in early 2000. It was known as Cyberjaya 1 (CBJ 1). Subsequently, we saw the entry of others, including CSF [Advisers], Basis Bay and AIMS [Data Centre], especially post-Covid-19," says Savills Malaysia managing director Datuk Paul Khong.

CBRE | WTW group managing director Tan Ka Leong says, "Companies began looking at Malaysia to set up their data centres in the early 2000s, with global players such as NTT Communications and Keppel DC establishing a presence in Malaysia from 2010. Malaysia's strategic location in Southeast Asia makes it an attractive destination for data centre companies due to its proximity to major markets and low risk of natural disasters."

JLL Malaysia data centre team member Kent Seet concurs with Khong and Tan, adding that there has been a significant push towards cloud adoption in both the private and public sectors in Malaysia over the past three years. "The Covid-19 pandemic and the resulting Movement Control Order forced businesses to adopt software as a service solutions to ensure their operations continued smoothly despite disruptions."

SAVILLS MALAYSIA

> "Many major players are now shifting to sustainable models which prioritise energy efficiency and renewable energy."
> — Khong, Savills Malaysia

Attractive location

Several factors make Malaysia an attractive location for data centre operators. "The electricity tariffs here are among the lowest in Asean," says Khong. "For example, the average electric tariff in Thailand and Singapore are now well priced at 51 sen per kWh (THB3.99) and RM1.11 per kWh (S$0.3247) respectively. In comparison, Malaysia charges 33.7 sen per kWh and 20.2 sen per kWh during peak and off-peak periods, respectively, for high-voltage industrial usage," he adds.

Favourable government policies in Malaysia, with tax incentives and subsidies, are an added bonus, Khong continues. "Notable incentives given include a 100% tax exemption to eligible data centres and cloud business investments."

Among the policies designed to collectively promote digitalisation are the Malaysia Digital Economy Blueprint (MyDIGITAL), National Digital Network (Jendela), National Fourth Industrial Revolution Policy, DE Rantau programme (under Malaysia Digital Economy Corporation) and Digital Ecosystem Acceleration Scheme (DESAC), Khong points out.

Furthermore, the abundance of industrial land in the north and south of the peninsula increases the attractiveness of Malaysia. "These industrial parks provide competitive land prices, alongside investment incentives supported by the government," says Khong.

For Seet, the country's established infrastructure is a plus point. "Malaysia has dependable and robust infrastructure, including modern telecommunications networks, fibre connectivity (land and undersea cabling), reliable power supply at competitive rates and modern transport systems, which are vital for the seamless operation of data centres.

"Malaysia has a great presence of data-intensive industries such as semiconductor, finance, e-commerce, telecommunications and logistics. Locating data centres close to these industries allows for low-latency connectivity and efficient data processing."

CBRE Data Center Solutions' Asia-Pacific head and executive director Dedi Iskandar says, "Malaysia's internet economy has continued to rise. According to the IDC Asia-Pacific Cloud Survey 2021, 86% of organisations in Malaysia had higher than regional average increases in cloud usage. In addition, the Malaysian government is promoting the digitalisation of public services to create a highly skilled

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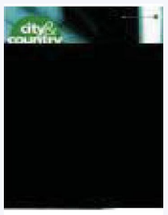

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and digitally enabled nation with a competitive digital economy under the MyDIGITAL blueprint.

"Artificial intelligence (AI) and content consumption continue to be the primary driver of data centre growth in Malaysia. The country offers an attractive proposition as a key base for data centre companies and their end users, targeting regional consumers in Southeast Asia.

"On top of its strategic location, Malaysia offers a stable political and economic environment, well-developed telecommunications infrastructure, an abundant supply of educated and skilled workforce, and competitive operating costs compared with other countries in the region," Dedi says.

As a result of the demand for data centre space and facilities, current and new locations are seeing growing interest. "Currently, the existing data centres are predominantly concentrated in Cyberjaya, Selangor, and the future or upcoming data centre developments will be mainly in Iskandar Malaysia as well as in Selangor," says Khong.

CBRE | WTW's Tan reveals that there are other areas on the radar. "Beyond the two large clusters (Greater Kuala Lumpur and Johor regions), we have noticed alternative locations being identified, such as Sarawak and northern Peninsular Malaysia.

"In terms of space, each of the facilities takes up between 10,000 and 150,000 sq m, with a growing trend of building larger spaces in the future. In terms of power capacity, the total operational capacity in Malaysia is around 150MW, with an additional 1.3GW at various development phases."

JLL Malaysia head of research and consultancy Yulia Nikulicheva says, "Currently, the area with the highest number of operating data centres is Cyberjaya, which has 16 data centres with at least 74.9MW in place, while a few are still under construction. By 2025, Cyberjaya is expected to host about 141.7MW, taking into consideration existing data centres and those currently under construction. We foresee that Johor, specifically Sedenak Tech Park (STeP), will soon take over the lead in the coming years, with 370MW expected to come online in 2024. This is because most of the data centres in STeP are currently under construction, aiming to reach an ultimate power capacity of more than 900MW in the coming years."

ESG compliance

Data centres are known to be energy guzzlers and with that awareness, operators are cognisant of the need to comply with the environmental, social and governance (ESG) initiatives of the country they are operating in, and of their own organisations.

"Data centres manage energy consumption and meet ESG goals through various measures such as optimising cooling systems, using renewable energy sources, implementing energy-efficient hardware and software technologies, decommissioning outdated equipment that consumes more energy, virtualisation of servers to reduce the number of physical servers needed, and deploying automation and AI to improve energy efficiency," says Tan.

Khong says, "Many major players are now shifting to sustainable models which prioritise energy efficiency and renewable energy. YTL Power has revealed plans to build the Green Data Center Park in Johor, powered by renewable solar energy. Upon completion, it will be Malaysia's inaugural data centre to utilise solar energy for its 500MW data centre campus.

"AirTrunk, a specialist in hyperscale data centres in the Asia-Pacific and Japan region, is set to construct a data centre facility named AirTrunk (JHB1) in Johor Bahru. With AirTrunk's industry-leading power usage effectiveness (PUE) standard of 1.15, the facility will have a capacity of over 150MW. It will utilise an innovative cooling system that combines direct-to-chip liquid cooling technology and indirect evaporative cooling, potentially saving 20% in [energy] consumption."

Nikulicheva explains that some data centre operators manage ESG matters by implementing self-regulatory initiatives to improve the climate impact of the industry. "This can be seen in more mature markets such as Europe where there is the Climate Neutral Data Centre Pact (CNDCP) whereby the goal is to make all European data centres climate neutral by 2030. The CNDCP sets specific targets for energy efficiency, clean energy, water conservation and circular economies."

She adds that government legislation helps, and cites Singapore as an example. "Singapore lifted its moratorium last year but requires data centre developers to meet exacting guidelines on decarbonisation and efficiency. Potential projects under this initiative are also evaluated based on the wider economic impact and ability to support Singapore as the regional interconnectivity hub."

According to Nikulicheva, there is a technical code for green data centres under the Malaysian Communications & Multimedia Commission. "This technical code was designed to provide the minimum requirements for green data centres for the purpose of establishing policies, systems and processes to improve the energy efficiency of data centres and, at the same time, reduce the carbon footprint of the industry. The minimum PUE requirement under this scope is 1.9, with data centres that are able to achieve a PUE of 1.6 or below being classified as excellent. The technical code further sets out minimum requirements for a range of metrics pertaining to data centres such as supply air temperature and relative humidity range."

Both Nikulicheva and Seet say the advancement of technology and the increase in awareness of energy efficiency in data centres has seen a reduction in the PUE and many data centres are aiming to achieve PUE values of 1.5 or lower.

"Some exceptionally efficient data centres have achieved even lower PUE values, approaching or even surpassing 1.2 or 1.1. These data centres utilise advanced cooling technologies, efficient power distribution systems and innovative design strategies to maximise energy efficiency and minimise wasted power," says Seet.

Positive outlook

When all is said and done, the outlook for data centres remains positive. Tan explains: "The outlook is positive as the country has seen significant growth in recent years and is well positioned to become a major player in the data centre industry in Southeast Asia. Upcoming areas where companies are looking to set up their data centres include the Klang Valley and Iskandar Malaysia in Johor Bahru, both of which have established themselves as attractive locations for foreign investment due to their developed infrastructure and strategic location."

JLL MALAYSIA

"Malaysia has dependable and robust infrastructure, which are vital for the seamless operation of data centres." — Seet, JLL Malaysia

CBRE | WTW

"The country offers an attractive proposition as a key base for data centre companies and their end users, targeting regional consumers in Southeast Asia." — Dedi, CBRE Data Center Solutions

JLL MALAYSIA

"We foresee that Johor, specifically STeP, will soon take over the lead in the coming years, with 370MW expected to come online in 2024." — Nikulicheva, JLL Malaysia

CBRE's Dedi says, "Apart from the known clusters such as Greater Kuala Lumpur and Johor, the government and Malaysian data centre entrepreneurs are actively promoting new alternative data centre destinations such as Sarawak and Bukit Kayu Hitam [in Kedah]."

According to Seet, JLL Malaysia expects the data centre sector to continue growing at a compound annual growth rate of 42%, based on the capacity of 128MW in 2020 to 750MW by 2025. "Of course, the figures will be influenced by the sustainability of demand as well as the global economic situation."

Nikulicheva believes that as the government promotes digital infrastructure and renewable energy in regions such as Kedah, Negeri Sembilan and Sarawak, these areas could become future locations of interest for data centre companies. "One of the key determinants to ensure the sustainable growth of the data centre sector in Malaysia will be the readiness of infrastructure, which would enable our nation to better receive and secure any form of foreign investments."

Khong concurs with this assessment and says, "Malaysia will continue to experience robust demand from renowned global providers, including GDS, Yondr, Vantage Data Centers, YTL Data Centers, AirTrunk and Equinix. The majority of Malaysia's data centres are concentrated in Greater Kuala Lumpur, particularly in Cyberjaya, with some located on the fringes of Kuala Lumpur. One of the emerging areas with potential for data centre operation in Greater Kuala Lumpur is the Malaysian Research Accelerator for Technology & Innovation (MRANTI) Park in Bukit Jalil.

"Johor, specifically Iskandar Malaysia, has become an attractive destination for data centre investment due to its proximity to Singapore, cost-effective land prices and available labour pool. The data centre market in Johor appears to be growing as it captures the spillover demand from Singapore. New facilities in Iskandar Malaysia are generally focused in areas like Sedenak, Nusajaya Tech Park and the latest at the Southern Industrial Logistics Clusters (SLIC).

"Newer potential areas include Silver Valley Technology Park (Perak) and Delapan Special Border Economic Zone (Kedah)," he adds.

Staying on course

While it is good to strike while the iron is hot, there is also a need for safeguards to ensure this sector is sustainable, both in terms of energy consumption and business longevity.

According to Khong, the Malaysia Green Data Centre Standard establishes the guidelines for designing, constructing and operating green data centres. Also, the Green Investment Tax Allowance encourages and incentivises investment in environmentally friendly and sustainable projects, and there are tax benefits too. And then there is the Green Income Tax Exemption. "This tax exemption applies to companies listed in the MyHijau Directory that offer green technology services in their projects, including green data centres."

For Seet and Nikulicheva, the key safeguards include energy efficiency measures, sustainable infrastructure planning, environmental impact mitigation, clear regulatory framework, integration of renewable energy sources, collaboration and setting industry standards, consideration throughout the data centre lifecycle, and having monitoring and reporting mechanisms.

Tan agrees with his fellow property experts on how data centres must prioritise energy efficiency and employ best practices in their design, construction and operation, as well as the implementation of a robust regulatory framework.

Adding to this, he says, "Data centre development should be a part of a comprehensive strategy for sustainable urban planning that ensures adequate infrastructure and resources to support the growth of businesses. This includes planning for reliable and resilient energy supply, waste management systems, water resources management, transport infrastructure and other critical public services."

The growth of data centres in Malaysia bodes well for the country and with concerted efforts, this sector will benefit both the economy and the rakyat.