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# FOR SUSTAINABLE DATA CENTRE GROWTH UPGRADE STATE CAPACITY




It was not long ago that announcements of data centre investment were touted as a monumental national achievement, with billions of dollars framed as foreign direct investments. When land opened up for the construction of facilities, the economic argument was that sleepy palm oil estates or unutilised industrial land could now benefit from mega infrastructure promising direct impact on the surrounding communities.

Between 2021 and mid-2025 alone, 143 data centre and cloud computing projects worth RM144.4 billion were approved. This period overlapped with the zealous excitement over the potential of artificial intelligence and the next generation of computing power. For the tech giants, Malaysia's land availability, accommodating energy infrastructure, generous tax incentives and relatively lower costs seemed like the perfect recipe. Johor alone has grown into one of the largest emerging AI infrastructure clusters in the world.

The construction demand has been so encouraging that land parcels in major tech parks — such as those in Johor — are fully booked, including for their next phases. Naturally, more small- to mid-scale developments are moving to non-industrial areas, including near neighbourhoods. This trend is evident in Petaling Jaya, Selangor,


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as well as the now-cancelled project in Kota Damansara and the Iskandar Puteri project in Johor, which required a stop-work order.

It is only proper for projects of this scale to acknowledge community feedback, which highlights concerns over the extent of the state's approval discretion, particularly regarding environmental safeguards. Equally concerning is whether there has been a standardised assessment of our local resource resiliency against the potential economic upside, given the varying technological sophistication of these projects.

It was unthinkable then that a data centre would draw protest over pollution concerns, yet those concerns proved serious enough for the developer to step in and remedy the situation.

## The scorecard approach

This increased scrutiny of data centres led to the acknowledgement by treasury secretary-general Tan Sri Johan Mahmood Merican that even large capital investments cannot be presumed to generate sufficient spillovers.

The government has since been prompted to change its approach to evaluating incoming projects, moving from the singular emphasis on the quantum of investments to a "scorecard" assessment of economic amplifiers and the impact on the country's energy and water stress. Achieving these objectives, however, may require the type of state actions and capacity that is understated by the proposed "scorecard" approach. It requires the government to incentivise development of backward linkages in water and energy solutions, to steer prominent industry players to deploy state-of-the-art cooling solutions, and to put in place a regulatory framework that ensures transparency of water and energy usage by data centres.

According to a July 2026 parliamentary reply, data centre electricity usage currently accounts for about 7% of total electricity consumption in Peninsular Malaysia, against a peak demand set to reach 33.5GW by 2035. The government estimates that data centres alone will account for up to 31% of that peak by 2035, or roughly 10GW.

Water reserve margins are similarly being tested. Although data centre water usage remains a small share of the total today, projections show that demand is rising sharply to 384 million litres per day in Johor (almost a fifth of the state's current total water consumption) and 73.88 MLD in Selangor by 2030.

In fact, the rationing may have already begun. Of the 808 MLD requested by 101 data centres across Selangor, Johor and Negeri Sembilan, the National Water Services Commission approved fewer than 18% of applications, equivalent to just 142 MLD.

## Lessons learnt

Certainly, lessons have been learnt and steps are being taken to address pain points revealed over the course of this rush for computing power.

Tenaga Nasional Bhd (KL:TENAGA) is projected to spend a further RM78 billion between 2026 and 2030 on grid expansion, as analysts estimate the country may need as much as 12GW of new generation capacity by 2031. Some of that demand is being met through the Corporate Renewable Energy Supply Scheme (CRESS), which allows data centres to source renewable energy (RE) directly from solutions providers.

Dayone, a Singapore-headquartered data centre developer and operator, is reportedly an early adopter, and Petroliam Nasional Bhd (PETRONAS)-owned Gentari, Gamuda Bhd (KL:GAMUDA) and Tenaga subsidiaries are slated to be involved as RE developers.

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In Johor, the government announced multiple water treatment plant developments to meet projected data centre demand of up to 440 MLD, as the state's total water demand is projected to reach 3,000 MLD by 2035.

Water reclamation solutions are also being developed through joint ventures between state-linked entities, Johor Special Water and Indah Water Konsortium Sdn Bhd, together with data centre operators such as AirTrunk and Bridge Data Centres. Alongside expanding supply, Johor is also acting on the demand side, halting approvals for Tier-1 and Tier-2 data centres over water overuse concerns and holding back water-cooled projects until at least mid-2027.

## Narrowing the local capacity gap

Ambition and capacity are not lacking in the New Industrial Master Plan 2030 and National Energy Transition Roadmap 2023, which aim for a structural, sustainable transformation, high-waged jobs and greater RE share in the energy mix.

Meanwhile, the Ministry of Investment, Trade and Industry has taken a step in the right direction by linking incentives to water and power usage effectiveness.

Yes, the technological and financial barriers to adopting liquid cooling are high. But the potential return justifies the effort, as liquid cooling can use up to 91% less water and 50% less energy than conventional systems.

Given that return, negotiating for technology transfer, or at least licensing, from the technology owners is worth the ambitious ask. The scale of the water and energy challenge means Malaysia should also push for more of its local players to be part of that supply chain. Selangor has already set a marker here by mandating a 30% local content requirement as a share of capital expenditure across the data centre value chain.

Sustainably developing the ecosystem would also mean securing greater public buy-in through increased transparency and accountability.

Since operating such infrastructure extracts a high amount of public resources and may potentially affect the inherent responsibility of the state to provide basic services to the people, it is a reasonable expectation for the area residents to not only be consulted, but also given a formal channel to propose an appropriate "return of value" towards community development, as has been practised in several counties hosting some of the highest numbers of data centres in the US. E

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