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A new power play

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MALAYSIA'S energy sector may be standing at the threshold of one of its most consequential structural changes in decades.

The government's decision to require newly approved data centre (DC) developers to build their own off-grid power generation facilities is significant for reasons that extend beyond the country's burgeoning DC industry.

It opens the door to a much wider adoption of self-generation (Selco), arrangements.

While the idea of large industrial electricity consumers generating their own power has existed in Malaysia, it has hardly flourished.

While the regulatory framework has permitted certain forms of self-generation, the economics and practicalities of operating independently of Tenaga Nasional Bhd (TNB) have often proved challenging.

That could now change.

The rapid expansion of Malaysia's DC industry, particularly in Johor and the Klang Valley, is creating electricity requirements of a magnitude that the country's existing grid infrastructure may struggle to accommodate.

A single hyperscale DC can require hundreds of megawatts of electricity. With so many DCs being built in the country, this demand is placing considerable pressure on generation capacity, transmission infrastructure and ultimately electricity tariffs.

Hence requiring these developers to provide their own electricity supply is a sensible policy response.

Selco: An old concept, new opportunity

Self-generation is not a new concept in Malaysia but has never developed into a meaningful alternative to the conventional utility supply system.

Some industry experts reckon that one reason for this is the challenges related to securing backup supply from the grid.

Substantial connection and standby charges can undermine the economic rationale for investing in self-generation in the first place. Such charges need to be transparent, proportionate and structured in a way that encourage rather than discourage private investment in electricity generation.

If Malaysia is serious about requiring new DCs to build their own power plants, these issues must be addressed before developers commit billions of ringgit to new facilities.

While there are numerous Selco operations in Malaysia, it is difficult to see just how many and large they are.

A new power play

■ Having DCs develop their own electricity supply could reshape the power sector

■ It will ease pressure on TNB's grid and accelerate industrial development

■ Clearer rules are needed on grid access, backup charges and private distribution

A verified current nationwide total of active Selco projects is not readily available.

The Energy Commission should publish a consolidated breakdown distinguishing captive generation, standby generation, solar self-consumption and licensed private distribution networks.

The most compelling example of private networks latter remains NUR Power, which operates an integrated electricity generation and distribution system serving the Kulim Hi-Tech Park in Kedah.

NUR Power is not merely an industrial company generating electricity for itself.

It is a licensed independent utility supplying multiple customers within a designated industrial development, effectively functioning as a private electricity network.

Its existence shows that Malaysia already has experience with an alternative electricity supply model.

The obvious question is why similar arrangements have not been done elsewhere.

The potential of industrial mini-grids

This is where the government's DC initiative could have implications far beyond that sector.

Imagine an industrial park in Johor, Kedah or Selangor where a private operator develops a dedicated power plant and electricity distribution network serving multiple factories, warehouses and DCs.

Instead of each company negotiating separately for large electricity connections, the industrial park could establish its own

mini-grid, with electricity generated locally and distributed directly to the tenants.

Such an arrangement could combine gas-fired generation, rooftop solar, battery storage and eventually other low-carbon technologies.

The private operator would assume responsibility for electricity supply, maintenance and reliability within the park, while maintaining a properly priced connection to the national grid for backup or supplementary supply.

The benefits could be considerable: reduced pressure on TNB's infrastructure, faster industrial development, greater flexibility in electricity procurement and potentially more competitive energy costs.

Germany offers established examples. At Industriepark Höchst, an industrial complex housing around 90 chemical and pharmaceutical companies, operator Infraser Höchst provides electricity through its own generation facilities. A dedicated distribution network serves customers within the park.

In The Netherlands, logistics developer Prologis announced a microgrid at its Almere facility in November 2025, combining solar generation, battery storage and backup generators.

The arrangement increased usable electricity capacity from a constrained 55KW of grid supply to approximately 400KW.

It illustrates how decentralised generation can unlock investments that would otherwise be delayed by grid limitations.

Across the United States, technology companies and energy developers are increasingly considering dedicated power generation facilities to support the extraordinary electricity requirements of artificial intelligence and hyperscale DCs.

Gas-fired power plants are particularly attractive because they can provide dependable electricity round-the-clock, unlike intermittent renewable sources operating without sufficient storage.

Indeed, a July 2026 news report identified 74 proposed off-grid gas-fired projects associated with American DCs although many remain at the planning stage.

Where will the gas come from?

Malaysia's move towards allowing DCs to build their own gas-fired power plants raises the question of securing their natural gas, and at what price.

While Malaysia is a major LNG exporter, Peninsular Malaysia faces declining domestic gas production, particularly from mature offshore fields along its East Coast.

Consequently, new gas-fired power plants may increasingly depend on imported LNG, exposing developers to international gas prices and supply volatility.

The good news is that Malaysia already has an extensive Peninsular Gas Utilisation pipeline network operated by Petronas Gas Bhd.

Furthermore, the Gas Supply Act's third-party access framework theoretically allows independent gas suppliers to access regasification terminals, transmission pipelines and distribution networks.

However, the effectiveness of this liberalisation depends on access arrangements, pipeline capacity and commercially viable transportation tariffs.

The planned regasification terminals in Lumut, Perak, and Yan, Kedah, could strengthen supply security and introduce greater competition, particularly as the Yan project involves developers independent of Petronas.

The forthcoming National Gas Roadmap will be crucial in determining how independent power producers, including DC operators, can procure gas and whether they can negotiate directly with LNG suppliers.

The government's latest move should be viewed as more than a practical solution to the electricity demands of DCs.

It could become the catalyst for a more decentralised, competitive and resilient electricity industry.

For decades, Malaysia's power sector has evolved around a highly centralised utility structure. That model has served the country well in many respects, but the next phase of industrial development may require greater flexibility.

DCs could provide the initial impetus, but the same framework could eventually support semiconductor manufacturers, industrial parks and other energy-intensive businesses.

It should be able to create an electricity ecosystem in which

TNB, independent generators and private industrial utilities can coexist under fair and transparent rules.

What Malaysia needs now is regulatory clarity and the political will to translate a sector-specific decision into meaningful structural reform.

