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More power isn't the answer: Malaysia needs an AI-enabled grid

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MALAYSIA'S energy transition is accelerating, but the real question is no longer how much energy we can generate. It is whether our grid can become intelligent enough to keep up.

The country has set clear goals to increase renewable energy integration to 40% by 2035 and achieve net zero by 2050. Large-scale solar projects are advancing, regional interconnection through the Asean Power Grid is gaining momentum, battery energy storage is entering the system, and new sources of significant demand, particularly from data centres powering artificial intelligence (AI), are reshaping how we think about power infrastructure.

At the recent Energy Transition Conference hosted by Tenaga Nasional Bhd, I discussed one of the most important enablers of Malaysia's energy future: grid resilience.

Malaysia has already progressed from LSS 1 to LSS 5+, with about 5.2 GW of large-scale solar integration committed so far. Grid readiness is also accelerating, with 48 nodes identified to support nearly 8 GW of solar integration. At the same time, newer technologies are being introduced to strengthen system

stability, including Malaysia's first grid-connected battery energy storage system in Dungun, Terengganu with a capacity of 100 MW/400 MWh.

That requires a grid that is not only stronger, but more intelligent – using data, automation, and AI-enabled tools to anticipate stress, respond faster, and optimise capacity in real time.

As more renewable energy enters the system, the grid becomes more dynamic. Solar generation is variable, demand patterns are shifting, and electrification is accelerating. Data centres require large amounts of stable power. Climate-related disruptions are also pressuring infrastructure originally designed for a more predictable energy system.

Strong physical infrastructure remains fundamental, but the next phase of resilience will depend on digital visibility, automation, and AI-enabled intelligence.

That is where digitalisation and AI become critical. Today, utilities often have access to large volumes of data from substations, devices, meters, asset systems, and control platforms. AI-enabled analytics can help turn that data into earlier warnings, better forecasts, and faster

operational decisions.

The challenge is that data is often scattered across systems, platforms, and departments—making it harder for operators, planners, and maintenance teams to translate information into timely action.

The value is practical. When data is integrated with AI-enabled analytics, utilities can reduce blind spots, restore power faster, lower technical losses, prioritise maintenance before failures occur, and make better use of existing grid capacity before new infrastructure is built.

This is already visible in markets such as Australia, where Schneider Electric's ADMS and fault location, isolation, and service restoration capabilities have helped SA Power Networks respond more effectively to extreme weather events, restoring power to most affected customers within just one minute.

At Schneider Electric, this is what we mean by energy technology: the convergence of electrification, automation, digital intelligence, and AI-enabled decision-making.

Data centres show how quickly Malaysia's demand profile is changing. As of March 2026, there were about 138 data centre applications in Malaysia, with 38

commissioned ahead of schedule through a green-lane pathway. By 2033 or 2034, data centres could add around 6 GW of additional demand, compared with Peninsular Malaysia's current maximum demand of about 21 GW.

That level of demand is significant. The conversation cannot stop at connection speed. For data centres, AI-enabled grid planning, digital twins, and monitoring tools can help operators simulate power, cooling, and load conditions before deployment – reducing design risk, improving deployment accuracy, and supporting higher energy efficiency.

The same applies to renewable energy. Digital grid optimisation can help reduce technical losses, improve asset utilisation, and support lower-emission operations, as seen in Enel's use of network reconfiguration to cut technical losses by 75,000 tonnes of CO₂ per year. Battery energy storage, advanced grid technologies, and interconnection projects will play key roles. Yet these technologies will deliver the greatest value when underpinned by robust digital foundations.

The recent introduction of MCSeT with EvoPacT in Malaysia offers a

glimpse into that evolution: an SF₆-free, digital switchgear designed for a more modern grid.

This transformation requires a strong and sustained collective effort, with utilities, policymakers, technology providers, investors, and energy users all playing an important role in driving and supporting the transition.

If Malaysia aims to scale up renewable energy, attract high-value digital investments, strengthen industrial competitiveness, and achieve its net-zero ambition, grid resilience must be treated as a national priority.

The next phase of the energy transition will not be driven by generation capacity alone. Its success will also depend on Malaysia's ability to develop a smarter, more integrated, and more resilient power grid that can support the country's evolving energy needs.

Because ultimately, Malaysia's energy future will be defined not just by how much power it can generate, but by how intelligently, efficiently, and reliably an AI-enabled grid can operate.

This article is contributed by Schneider Electric Malaysia country president Eugene Quah.