

12 OCT, 2026

Infrastructure gaps could slow Malaysia's green energy drive

The Malaysian Reserve, Malaysia



Infrastructure gaps could slow Malaysia's green energy drive

The transition presents an opportunity to strengthen domestic energy resilience while building expertise in technologies and infrastructure

by ALISSYA ZUNIZAM

MALAYSIA'S push to accelerate renewable energy (RE) adoption under Budget 2027 will depend on whether investments in grid infrastructure, energy storage and financing support can keep pace with the sector's growth, said industry players and researchers. Under the budget, the government has committed RM15 billion through Tenaga Nasional Bhd (TNB) to strengthen the national electricity grid, while UEM Iestra will invest RM1 billion in projects including energy storage at Kuala Lumpur International Airport (KLIA) and a 1-gigawatt (GW) hybrid energy project in Johor.

According to Prime Minister (PM) Datuk Seri Anwar Ibrahim, Budget 2027 extends green technology tax incentives until Dec 31, 2030, with Investment Tax Allowances of up to 100% for eligible projects, electric vehicle (EV) charging stations and green technology assets for own use.

Concurrently, the government will channel another RM1 billion through the Retirement Fund (Inc) (KWAP) Climate Fund towards green projects, including RE and decarbonisation initiatives, amid uncertainties arising from the West Asia conflict.

However, researchers and industry players said expanding RE capacity would require corresponding improvements to the electricity grid, greater energy storage deployment and more accessible financing.

Universiti Kebangsaan Malaysia (UKM) Solar Energy Research Institute (SERI) director Prof Dr Norasikin Ahmad Ludin said solar generation is variable and could cause voltage fluctuations, grid congestion and curtailment when the electricity system could not absorb the additional supply.

"You cannot just add solar. You have to add flexibility and that means grid, storage and smart operations working together," she told *The Malaysian Reserve* (TMR).

At the same time, The Malaysian Photovoltaic and Sustainable Energy Industry Association (MPSEA) similarly identified grid connection capacity, approval timelines and solar intermittency as key challenges facing the industry.

"Greater grid transparency, faster connection processes and accelerated Battery Energy Storage Systems (BESS) deployment are essential to accommodate higher RE penetration," the association



As more RE projects come online, the challenge will be ensuring that new generation capacity can be integrated into the grid without creating bottlenecks

Meanwhile, Solarvest Holdings Bhd group CEO Datuk Davis Chong Chun Shiong welcomed TNB's investment, saying a modern grid supported by utility-scale BESS would be critical to meeting the electricity needs of expanding high-tech industries.

"Similarly, a resilient, modern grid paired with utility-scale BESS is essential to power Malaysia's expanding high-tech industrial corridors," he said in a statement.

The need for reliable electricity is becoming more pressing as demand rises from semiconductor facilities, industrial parks and artificial intelligence-driven data centres.

These developments place greater emphasis on the electricity system's ability to accommodate additional demand while maintaining a stable and reliable supply.

As more RE projects come online, the challenge will be ensuring that new generation capacity can be integrated into the grid without creating bottlenecks.

The pace of grid development and storage deployment will therefore influence how effectively Malaysia can translate its RE ambitions into additional usable electricity.

Tax Incentives Positive But Financing Gaps Remain

Beyond infrastructure, industry players said the extension of green technology tax incentives until Dec 31, 2030, would provide greater investment certainty but would not, on its own, address financing barriers to wider RE adoption.

Norasikin said the Investment Tax Allowance of up to 100% could encourage corporate investment,



Source: ukm.my

Norasikin says expanding solar generation can reduce Malaysia's exposure to imported fuel prices and global supply disruptions

but its benefits would be limited for households, small and medium enterprises (SMEs) and other organisations without sufficient taxable income to offset.

"My short answer is they help, but they are not enough on their own," she said.

While tax allowances can improve the investment proposition for eligible companies, access to capital remains an important consideration in determining whether projects proceed.

MPSEA said further support should include affordable green financing, battery storage incentives and improvements to the Corporate Renewable Energy Supply Scheme (CRESS).

"We encourage additional support for BESS, affordable green financing, improved CRESS commercial viability and simplified regulatory approvals," it said.

MK Land Holdings Bhd COO for group planning and corporate services Nazri Tunin said policy certainty, financing access and reliable infrastructure were important in attracting private-sector participation.

"RE projects require substantial capital and long-term planning. The government's commitment to strengthening grid infrastructure and providing a more supportive investment environment is therefore an encouraging step towards attracting continued private sector participation," he said in a statement.

Meanwhile, Solarvest said the extended incentives would give businesses greater certainty to commit capital towards decarbonisation while supporting infrastructure development to meet rising corporate demand for RE.



Source: Media Mula

Policy certainty, financing access and reliable infrastructure are important in attracting private-sector participation, says Nazri

For companies considering RE investments, longer incentive periods can provide greater visibility when assessing project costs and expected returns.

However, the effectiveness of these measures will also depend on whether businesses can obtain financing and secure the necessary grid connections within commercially viable timeframes.

For households and smaller businesses, Norasikin said wider solar adoption would require leasing arrangements, zero-capital expenditure models and green loans to reduce upfront costs.

MPSEA had also called for personal income tax relief for residential solar installations and continued support for green financing.

These options could help address the initial costs associated with installing solar systems, which may otherwise limit participation among consumers and businesses with less available capital.

The views highlight the need to ensure that incentives benefit a broader range of energy users, rather than primarily those with the capital and taxable income to invest in RE projects.

Making financing more accessible would help widen participation, while improvements to grid connections and regulatory processes could support the delivery of projects already being planned.

ASEAN Power Grid Offers Regional Opportunities

Beyond the domestic market, researchers and industry players said Malaysia could use the ASEAN Power Grid (APG) under Budget 2027 to strengthen regional elec-



tricity connectivity while creating opportunities for local companies.

However, realising these opportunities would require infrastructure capable of supporting cross-border transmission and arrangements that allow participating countries to trade electricity reliably.

Norasikin said the APG could create opportunities for Malaysian oil and gas (O&G) services and equipment (OGSE) companies to apply their offshore engineering, subsea and marine construction expertise to cross-border electricity infrastructure.

"We are not starting from zero," she said, citing that existing capabilities could be applied to submarine cables, offshore transmission platforms, converter stations and grid interconnections.

Norasikin added Malaysia should aim to develop local companies capable of building and maintaining regional infrastructure, creating opportunities for export revenue and high-skilled jobs.

Developing these capabilities could allow Malaysian companies to participate beyond the domestic RE market, particularly in engineering, construction and maintenance work associated with regional electricity infrastructure.

Such opportunities would depend on local firms being able to meet the technical requirements of cross-border projects and compete for contracts.

MPSEA similarly said regional electricity trading could benefit RE developers, engineering consultants, contractors and technology providers.

"Malaysia should position itself as a regional RE and energy storage hub, supported by transparent cross-border trading mechanisms and competitive transmission charges," the association said.

However, Norasikin said regional integration would require common technical standards, transparent market rules, clear pricing, cyber-security safeguards and sufficient storage and backup generation to manage fluctuations in RE supply.

"Cross-border trade only works when the electrons and the rules can cross borders together," she said.

The initiative would therefore require coordination beyond the construction of physical connections.

Countries participating in regional electricity trading would need compatible technical requirements and clear arrangements for pricing, system operations and managing supply disruptions.

Greater regional connectivity could complement domestic efforts to strengthen energy security.

Norasikin said expanding solar generation could reduce Malaysia's exposure to imported fuel prices and global supply disruptions.

"Energy security is no longer just about who you buy from. It is about what you can generate at home," she said.

For Malaysia, the transition presents an opportunity to strengthen domestic energy resilience while building expertise in technologies and infrastructure that could serve regional markets.

Turning that potential into a competitive advantage will depend on the effective implementation of policies, the accessibility of financing and the ability of local companies to participate in the expanding RE sector.



Researchers and industry players say expanding RE capacity will require corresponding improvements to the electricity grid