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Grid readiness and bankable projects crucial as energy transition accelerates

The Edge, Malaysia



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BY **VANESSA GOMES**

According to HSBC Bank Malaysia CEO Datuk Omar Siddiq, capital is not the biggest constraint on Malaysia's energy transition. Bankable projects, a grid ready to absorb more renewables and clear carbon pricing matter more, he and fellow panellists said at *The Edge*-HSBC Renewable Energy Forum 2026.

Speaking at The Energy Transition Accelerated forum's first panel session titled "How can Malaysia accelerate its energy transition?", the panellists concurred that despite the geopolitical instability and volatile fuel costs, the country must hold to its long-term policy vision and keep pace with technology adoption.

"The government has set a very clear policy and vision, which acts as the compass and pathway to energy transition ... it is incumbent upon the private sector, in particular, to work hand in hand with the government to identify projects that we need to drive, scale and accelerate [this vision]," said Omar.

"I don't think capital is a constraint. It is about working with the government to really drive the agenda forward, and there's a lot more to do."

Tenaga Nasional Bhd chief strategy and ventures officer Dr Mohd Fadzil Mohd Siam stressed that the energy transition cannot be viewed solely through the lens of renewable energy (RE) generation, but must encompass the entire value chain, including grid readiness and shifting customer demand.

"Can we accelerate [the energy transition]? Yes, and we need to do it. Under the current regulatory period, we have ensured system readiness — that the grid must be ready and that we should be the right enabler to allow renewable energy developers to connect," he said.

"But at the same time, as more demand comes in, how do we address it? We have energy efficiency but in terms of electric vehicles (EVs), for example, how do we ensure that the charging points are available? Those things need to be done and it can be done."

> **"The government has set a very clear policy and** vision ... it is incumbent upon the private sector, in particular, to work hand in hand with the government to identify projects that we need to drive, scale and accelerate [this vision]."
> ***Omar, HSBC***


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To handle intermittency and maintain grid flexibility, Tenaga is deploying smart grid technologies and utility-scale battery storage while expanding EV charging infrastructure and energy efficiency initiatives.

Addressing Tenaga's coal phase-out road map amid volatile fuel costs, Mohd Fadzil reaffirmed the utility giant's commitment made three years ago to no longer build new coal-fired power plants. The company is currently enhancing the operational efficiency of existing plants to lower carbon emissions while exploring carbon capture, utilisation and storage (CCUS) technologies.

"Our commitment in terms of managing our coal-fired power plants is there, but this involves ongoing discussions with the government and the regulator. While we balance sustainability, we need to ensure [that] energy security as well as affordability remain key concerns," he said.

The National Energy Transition Roadmap (NETR), launched in 2023, originally set a target to increase RE installed capacity to 35% by 2030. However, rapid progress has pushed the nation ahead of schedule as RE installed capacity had reached nearly 32%, or about 14,000MW, as at Sept 1, said Minister of Energy Transition and Water Transformation Datuk Seri Fadillah Yusof in the Dewan Rakyat on Oct 13.

Progress across key NETR levers this year has included the launch of the sixth Large Scale Solar (LSS6) tender, which pairs 2.5GW of solar capacity with 1.25GW of battery energy storage systems (BESS), and larger feed-in tariff (FiT) quotas for biogas, biomass and small hydropower projects.

Despite these achievements, higher renewable energy penetration increases grid instability risks due to solar intermittency, making physical grid upgrades and energy storage urgent priorities, said Mohd Fadzil.

"How do we manage intermittency dynamics? We have to consider battery storage — how we can

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support the grid while providing [for the needs of our customers]. [The deployment] of new technologies has to be done in parallel as well because if, for example, we want to do CCUS, the preparation has to start now," he added.

Managing data centre demand and regional grid integration

The rapid expansion of artificial intelligence (AI) infrastructure and data centres has significantly heightened power demand across Peninsular Malaysia. Mohd Fadzil said Tenaga expects the peninsula's electricity demand growth to reach between 5% and 6% this year, mostly driven by data centre developments.

To manage this influx without compromising grid stability, the government's data centre task force conducts evaluations before approving new facilities. For approved projects, Tenaga has established the Green Lane Pathway — a fast-track programme designed to accelerate electricity supply and grid connection for data centre operators in Malaysia — to supply the required power capacity within a one-year time frame.

"Once the task force has approved the project, Tenaga is committed to providing the supply," he said, adding that structured phase-ins ensure energy security for existing domestic and commercial consumers without shifting cost burdens to the people.

On cross-border power integration, Mohd Fadzil highlighted Malaysia's strategic positioning to serve as the central energy hub for Asean. The country already maintains active grid interconnections with Thailand and Singapore, and has participated in multilateral power trading under the Lao PDR-Thailand-Malaysia-Singapore Power Integration Project (LTMS-PIP).

To expand regional grid connectivity, Malaysia is exploring a three-country collaboration with Vietnam and Singapore. The initiative involves a feasibility study to transmit large-scale offshore wind energy from Vietnam via submarine cables through Kelantan to Singapore.

"The objective is energy security, but along the way, it will also spur growth in Malaysia when it comes to addressing the needs [of the people]. At the same time, as we enhance the power being integrated from the offshore wind, there will be requirements in terms of battery storage as well," he said.

HSBC's Omar pointed out that Malaysia is uniquely positioned to lead regional energy initiatives, being involved in almost two-thirds of all interconnections in the Asean power grid framework.

"Malaysia is a consequential player, and close to two-thirds of the interconnections involve Malaysia. That's where we have a role to lead on this initiative and we saw that in the 2025 Asean chairmanship, where we were talking and driving that conversation very strongly. Malaysia is a key voice at the table in that context," he said.

Mobilising capital and structuring bankable projects

While the NETR estimates that the country will require up to RM1.3 trillion over the next 25 years to fund its energy transition, Omar said capital is not the biggest constraint, noting that an estimated US$2.4 trillion has already been allocated to energy transition globally.

"What's critical for the country is to identify projects that are bankable and work in terms of risk-reward allocation. That's something that the financiers, lawyers, accountants ... it's their job to work hand in hand with researchers and corporations to design projects that are bankable and that can earn a decent return to enable their attraction to capital," he added.

Omar said there is risk capital directed to frontier technologies and developments, and Bank Negara Malaysia has stepped in to work with banks to drive specific frameworks to help with such capital-making investments.

> **"Can we accelerate [energy transition]? Yes, and we need** to do it. Under the current regulatory period, we have ensured system readiness — that the grid must be ready and that we should be the right enabler to allow renewable energy developers to connect."
> ***Mohd Fadzil, Tenaga***



LOW YEN YEING / THE EDGE

For example, the central bank launched the RM2 billion Low Carbon Transition Facility (LCTF) in 2022, for which it paired RM1 billion with a matching RM1 billion from participating banks. Small and medium enterprises in any sector can borrow up to RM10 million at a maximum rate of 5% a year, for up to 10 years, to fund the move to low-carbon operations such as improving energy efficiency, using sustainable materials or obtaining sustainability certification.

"I agree that there is a lot that Malaysia can do to look beyond what we normally see. But at the end of the day, it must make sense and it must work towards solving the energy trilemma, and it must be bankable. Then, you can have that sort of development at scale," he said.

Carbon pricing, policy levers and infrastructure agility

Touching on the obstacles to creating a viable local carbon market, Omar identified standardised carbon pricing as the essential missing baseline. "Unless we have a standardised price of carbon, the ability for us to trade — whether in green securities or carbon credits — is a bit moot. And we see that today — whether it's in Singapore or Europe — that pricing carbon is difficult and the markets have not been able to take off."

He said clarity on carbon tax legislation and the upcoming National Climate Change Bill (RUUPIN) will allow Malaysia to align with international mechanisms such as Europe's Carbon Border Adjustment Mechanism (CBAM), as well as state-level carbon credit frameworks such as Sabah's. The state passed its Climate Change and Carbon Governance Enactment in July 2025, giving it ownership of carbon rights within its borders and a registry to license projects and record credits, although no date has been set for the legislation to come into force.

"Once we have that clarity and that ability to price, we can then trade. Without this baseline pricing, it's very difficult for us to really move carbon trading at the level and pace that we need for Malaysia," he added.

Tenaga's Mohd Fadzil noted that carbon pricing carries direct implications for electricity tariffs and must be introduced progressively. "Our perspective is it has to be done in a phased manner. Now may not be the right time, but this requires further discussion and engagement." ■

Tenaga's green solutions pioneering sustainability in data centres

1. Rooftop solar PV solution
Service from Tenaga Nasional Bhd's wholly-owned subsidiary GSPARX with zero capital expenditure outlay, which can power the data centres' non-critical areas and any extra solar energy generated can be exported back to the grid by leveraging the Net Energy Metering 3.0 and self-consumption schemes via a Supply Agreement with Renewable Energy contract. This helps to address Scope 1 emissions.

2. Malaysia Renewable Energy Certificates
Globally recognised as a tool for corporations to purchase renewable energy transparently and credibly via Tenaga's wholly-owned subsidiary TNBX Sdn Bhd. The certificates can be purchased to offset part of the data centres' electricity consumption and help meet their sustainability goals. This tool addresses Scope 2 emissions.

3. Green Electricity Tariff
Enables organisations with environmental, social and governance (ESG) goals to offset their carbon footprint by subscribing to the programme and powering their businesses with green electrons from hydro and solar sources.

Tenaga's energy transition pillars

1. Utility-scale renewable energy
Tenaga Nasional Bhd is rapidly expanding solar power capacity through major solar farms in Chenderoh, Kenyir and Temenggor. Floating solar panels on dam surfaces help produce clean electricity while maximising land use.

2. Centralised solar parks
Five large solar parks are being developed. Each centralised Large Scale Solar park across Peninsular Malaysia is planned for a 100MWac capacity, totalling 500MWac.

3. Grid modernisation
The national grid is being upgraded to be more resilient and intelligent, using advanced digital tools to manage energy flows more efficiently, especially with more solar and self-generated energy coming online. These upgrades will also tie in to the overarching Asean Power Grid, a regional initiative designed to connect the electricity networks of Southeast Asian nations.

4. Green hydrogen and ammonia
At power plants in Manjung and Jimah, Tenaga is piloting hydrogen and ammonia as cleaner fuels in collaboration with Petroliam Nasional Bhd (PETRONAS).

5. Carbon capture and repowering
To reduce emissions, Tenaga is trialling carbon capture technology that traps carbon before it escapes into the atmosphere. Meanwhile, in Terengganu, the Paka power plant is being upgraded to use newer, cleaner technology, with completion targeted for 2029.

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