



11 AUG, 2025

Clean energy shift in Malaysia targets equity, regional growth

The Malaysian Reserve, Malaysia



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The govt is prioritising energy sector as a high-impact launch point

MALAYSIA is accelerating efforts to recalibrate its clean energy transition, with fresh moves to reform tariffs, consider nuclear energy, expand Asean energy trade and reduce its over-reliance on subsidies — all while ensuring equitable access and sustainable development.

Speaking at the Malaysia Energy Policy Forum hosted by

MBSB Group recently, Energy Transition and Water Transformation Minister Datuk Seri Fadillah Yusof said the country must adopt a pragmatic, people-centred approach to meet its energy security and climate goals.

“Malaysia’s energy transition must be pragmatic, people-centred and equitable. No sector or community should be left behind,” he said during his keynote address, reaffirming the government’s commitment to achieving net zero emissions by 2050 under the National Energy Transition Roadmap (NETR).

As of July 2025, the share of renewables in Malaysia’s electricity mix has reached 31%, driven by large-scale solar (LSS) and rooftop systems. The next milestone is 40% by 2035 and 70% by 2050 — an ambitious target, especially as the energy sector accounts for 70% of the country’s total carbon emissions.

Fadillah, who is also deputy prime minister, said this goal is not just about installing new generation capacity, but about “mobilising hearts and minds” across ministries, industries and communities.

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When asked whether Malaysia's net zero target could be brought forward from 2050, Fadillah acknowledged that while technically possible, it would be financially and institutionally challenging.

"Our energy transition cuts across sectors — energy, transport, agriculture, land use — and involves federal and state jurisdictions. Some industries still rely heavily on coal and fossil fuels," he said.

The government is prioritising the energy sector as a high-impact starting point. With the right pace of migration to renewables and energy efficiency, he added, Malaysia may even exceed its 2050 target ahead of schedule.

NEM4.0 to Replace Costly Net Energy Inventory Scheme

Deputy secretary general (Energy) Mareena Mahpudiz revealed that a new iteration of the Net Energy Metering (NEM) scheme — tentatively called NEM4.0 — is being finalised and will be announced by this month.

This comes after the government discontinued the earlier net energy inventory programme due to its unsustainable subsidy burden.

"The previous NEM structure cost the government nearly RM250 million in subsidies due to avoided energy costs. With the new tariff structure implemented in July, we are moving towards more targeted and transparent support," Mareena said.

While she did not confirm whether the new scheme will retain the NEM name, she hinted that it could be a hybrid of NEM, Self-Consumption Renewable Energy System (SeCo) and the Community Renewable Energy Aggregation Mechanism (CREAM) — which facilitates shared solar generation and consumption at the community level.

In a separate media session, Fadillah explained that SeCo enables consumers to install solar panels primarily for their own use, reducing dependency on the grid.

"If you add a battery, you can go from three to four hours of solar usage to seven to eight hours before needing to draw from the grid."

He also highlighted community-based models within a 5km radius, where residents can collectively subscribe, use and manage their energy system.

"This community-sharing approach aligns with the goals of CREAM, allowing communities to govern how energy is generated and used," he added.

When asked whether the new scheme would adopt a hybrid model, Fadillah responded that the government has yet to finalise the details, adding that the full announcement will be made in due course.

Nuclear Energy Under Formal Review

Malaysia is also re-evaluating its long-term base load options to support increasing demand, especially as coal is phased out and solar remains intermittent.

Fadillah confirmed that nuclear power has officially entered the planning pipeline as a post-2030 consideration.

The government is also exploring future possibilities in fusion energy.

"We have not made a decision yet. That will only come after 2030 once we have analysed all aspects including regulations, safety, technology and public acceptance," he said.

He revealed that Malaysia has nuclear experts currently working abroad — in countries such as Russia and France — who could be mobilised once the country makes a firm policy decision.

"Only after we have made a final call can we bring them back. We have identified more than 10 professionals who could contribute," he added.

LNG Imports, Gas Infrastructure Reforms to Reshape Energy Mix

The forum also discussed the impact of Malaysia's recent liquefied natural gas (LNG) trade negotiations with the US, which could increase gas imports.

Mareena explained that this would shift the national energy mix, requiring a holistic plan that includes regasification, upgraded pipelines and integration into the national grid.

"The demand for gas is rising not only from the power sector but also from non-power industrial users. That is why we approved RM43 billion for grid upgrades — to ensure digitalised, smart and efficient



(From left, on the stage) Wan Kamaruzaman, Fadillah and Mareena at the Malaysia Energy Policy Forum recently



Nuclear power has officially entered the planning pipeline as a post-2030 consideration, says Fadillah

distribution," she said.

The infrastructure overhaul will support time-of-use billing, smart metering and real-time optimisation, all of which reduce wastage and support affordability.

Water Pricing, Zoning and Recycled Cooling for DCs

The government is also reforming water tariff structures, particularly for high-demand sectors like data centres (DCs), which are forecast to grow rapidly in Malaysia.

Water falls under state jurisdiction, but the federal government is working with the National Water Services Commission (SPAN) to introduce policy guidance and performance benchmarks for utility providers.

"We are introducing a specific tariff for the data sector and we are encouraging all data centres and industry players to use recycled water," Fadillah said.

States are also being asked to set up district cooling zones to manage water usage efficiently and reduce pressure on clean water supplies.

"This zoning model ensures recycled water is used for cooling while fresh water is reserved for human consumption," he added.

Fadillah also cautioned against overreliance on industry estimates when planning energy supply.

"Data centres often overestimate. We want to see actual consumption first before making decisions like launching LSS6, LSS5 has been announced while LSS6 will depend on real demand," he noted.

ASEAN Power Grid to Support Cross-border Resilience

Fadillah said Malaysia's long-term energy security cannot be achieved in isolation, and the government is banking on deeper cross-border electricity integration under the ASEAN Power Grid (APG).

Malaysia has agreed to transmit up to 2,000-megawatt (MW) of hydroelectric power from Sarawak to Peninsular Malaysia through inter-regional transmission lines, with interconnections to Singapore, Thailand and Laos already operational. New links to Vietnam and Brunei are being explored.

"We are also working with Laos, Thailand and Singapore under the Lao-Thailand-Malaysia-Singapore (LTMS) framework to facilitate energy exports. We top up any shortfall, ensuring reliable flow," he added.

He cited a recent gas pipeline incident in Cyberjaya that forced supply closures from the south to the north.

"Thanks to our Thai connection, we were able to maintain supply continuity in the north," he said.

Fadillah also revealed plans for an under-sea cable linking Vietnam to Perak, where 30% of incoming energy will be used domestically and 70% exported to Singapore.

"This is how we ensure ASEAN becomes a hub for clean energy — through interdependence, not isolation," he stressed.

Tariff Reform Protects Domestic Users

The new tariff structure, effective from July 2025, unbundles energy costs into generation, capacity, energy and network components — improving transparency and avoiding cross-subsidisation.

Mareena said under the previous model, domestic consumers indirectly subsidised industrial users.

"Now, the cost burden shifts to the top 10% of energy consumers, like heavy industries and large data centres."

"There is a special ultra-high-volume category. These users will bear the cost of their demand, while 85% of consumers — especially domestic users — will not be affected," she added.

Fadillah added that the earlier system unfairly benefitted those who could afford solar, while others paid full tariff rates.

"Some users with solar panels can sell energy back to the grid. But those without solar still pay full price. That is why we must revisit the system to ensure it is fair and equitable for all," he said.

Financing the Transition: Capital must Meet Climate Action

Additionally, Fadillah said Malaysia will need over US\$143 billion (RM605.46 billion) in green investments by 2050 to support renewable energy (RE) deployment, clean mobility and energy efficiency.

He urged financiers to expand their green portfolios and support innovative funding structures such as blended finance and green sukuk.

MBSB Group chairman Datuk Wan Kamaruzaman Wan Ahmad shared that the group had mobilised RM4.75 billion for sustainable and transition-aligned projects

in 2024, including floating solar plants, low-emission locomotives and carbon-smart data centres.

"Finance is the oxygen of the transition. Every solar panel, every green locomotive begins as a line item on someone's term sheet," he added.

The group aims to increase its green and sustainable financing commitment from RM10 billion to RM15 billion by next year.

MBSB representatives noted that its majority shareholders, Employees Provident Fund (EPF) and Permodalan Nasional Bhd (PNB), are both pushing for stronger environmental, social and governance (ESG) standards across their portfolio companies.

"We now assess climate risk alongside credit risk. Unmanaged exposure is the real threat," said Wan Kamaruzaman.

Malaysia also leads the world in Islamic green sukuk issuance, accounting for 262 out of 291 issuances globally.

Fadillah said this is an advantage the country must leverage to fund renewables and nature-based solutions.

Bank Negara Malaysia's (BNM) Low Carbon Transition Facility (LCTF), which offers concessional financing of up to RM10 million for small and medium enterprises (SMEs) decarbonisation, was also cited as a scalable model.

Wellbeing Economy, Madani Values

In response to civil society calls to shift away from GDP-centric development, Fadillah reiterated that the Madani government is focused on economic inclusivity, sustainability and long-term wellbeing.

"The challenge is to balance economic growth with cost and affordability, especially for low-income groups. We need policies that are fair and just — not just ambitious."

He added that innovation and private-public collaboration will be key to achieving a managed and investable energy transition.

"Energy and water are linked. Without water, there is no energy. Without energy, there is no water. Our policies must reflect this interdependence," he added.

A Future Anchored in Resilience, Regional Integration

Fadillah called on all stakeholders — government, industry, financiers and communities — to co-own the transition and deliver outcomes that are both inclusive and scalable.

"This is not just about megawatts and emissions. It is about momentum. It is about the future of our economy and the legacy we leave behind," he said.

With investments ramping up, policy reforms underway and regional power linkages expanding, Malaysia's energy transformation now hinges on coordinated execution — and the political will to ensure that no Malaysian is left behind. — by AKMAR ANNUAR