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Transitioning from coal to clean energy



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AS South-East Asia's economy grows, fuelled by its strategic location and expanding consum-er market, the transition from coal to renewable energy (RE) is underway

underway. Energy security remains a cor-nerstone of sustainable growth,

nerstone of sustainable growth, essential for long-term economic competitiveness and business continuity. In this regard, Malaysia is tak-ing an active leadership role through a series of strategic initi-atives grounded in environmen-tal, social and governance (ESG) principles, aimed at accelerating the shift from fossil fuels to clean energy.

the shift from fossil fuels to clean energy. Beyond government-led poli-cies (at both national and state levels), the momentum is also growing in the corporate sector, where businesses are embedding ESG principles into their opera-tions to uphold responsible prac-tices. At the individual level, con-scious choices and sustainable scious choices and sustainable

scious choices and sustainable habits are gaining traction, demonstrating how collective action can drive meaningful, long-term change. One of Malaysia's key initia-tives is the National Energy Transition Roadmap, which was launched in 2023. The roadmap sets ambitious targets including

launched in 2023. The roadmap sets ambitious targets, including enhancing RE capacity to at least 70% of power generation by 2035, up from about 25%. Analysts estimate that these targets will entail at least 20GW of new RE until 2050, of which more than 90% is expected to come from solar. This goal is a significant step up from the pre-

come from solar. This goal is a significant step up from the pre-vious targets of achieving 40% RE capacity by 2035. Around the region, Indonesia aims for 23% RE in its primary energy supply by 2025 and 31% by 2050, while Vietnam plans for RE to constitute 32.3% of total



primary energy consumption by 2030 and 44% by 2050. Thailand, meanwhile, tar-gets 30% RE in total final

Thanand, meanwhile, tar-gets 30% RE in total final energy consumption by 2036. "Malaysia's energy sector is evolving rapidly to meet sustain-ability demands. "The need to adapt is driven by global shifts in technology, environmental policies and evolving consumer expectations – all of which directly influence Malaysia's energy trilemma: striking a balance between ener-gy security (ensuring reliable power access), environmental sustainability (minimising greenhouse gas emissions) and affordability (maintain-ing accessible electricity for all citizens), "Nirinder Singh Johl, founder and chief executive efficies of deia Carbon XChonere Johl, founder and chief executive officer of Asia Carbon XChange

officer of Asia Carbon XChange PLT, says. He says investors and consum-ers are increasingly demanding cleaner energy solutions that are competitively priced. Meeting these expectations is crucial; not only to fulfill international com-mitments but also to build a mitments but also to build a resilient and inclusive energy

"The energy sector is gradually becoming more decentralised, shifting away from the tradition-al model where energy is pro-duced solely by large utilities. "Individuals, businesses and communities are now becoming prosumers' – both producing their own electricity, often through renewable sources like solar panels, and selling any excess energy back to the grid." He points to the grovernment's initiative like the Feed-in Tariff and various Net Energy Metering

Proportion of coalfired power generation to decline in the coming years

 Energy sector is gradually becoming more decentralised

schemes, which exemplify the shift of allowing consumers to offset electricity bills with RE sources.

Sources. "RE prosumers can make meaningful progress towards their broader sustainability goals. For example, a reduced reliance on conventional-ly-sourced electricity enables them to lower their Scope 2 emissions, which refers to indi-rect greenhouse gas emissions rect greenhouse gas emissions associated with the consumption of purchased electricity," says Nirinder.

With the natural retirement of existing plants, the proportion of coal-fired power generation in Malaysia is expected to decline in the

Malaysia is expected to decline in the coming years. A complete phase out is target-ed by 2045. Natural gas is antici-pated to act as a "transitional" fuel as the government acceler-ates the deployment of RE tech-nologies, particularly solar pho-tovoltaics (PV) and battery ener-gy storage systems (Bess) to increase the share of clean ener-gy in the power mix. gy in the power mix.

gy in the power mix. With upcoming tenders for the LSS5, LSS6 arge-scale solar programmes, analysts fore-see significant growth in solar PV capacity in Peninsular Malaysia, translating into another round of multi-billion-ringgit job flow opportunities for listed compa-nies. Meanwhile, the bidding round for the installation of Bess

to third parties is likely to take place in the third quarter of 2025.

2025. One key milestone in Malaysia's energy transition jour-ney is enforcement of the Energy Efficiency and Conservation Act on Jan 1, 2025. It mandates that large energy consumers, selected buildings and key energy-using products adhere to minimum energy efficiency (FE) standards energy efficiency (EE) standards and implement robust energy

management systems. CIMB Securities, in a recent

CIMB Securities, in a recent report, says the regulatory meas-ure is anticipated to drive signifi-cant operational improvements and cost savings. "With Malaysia poised to increase electricity tariffs as part of subsidy rationalisation pro-grammes, the financial benefits of EE has become even more pronounced.

of EE has become even more pronounced. "Companies that invest in energy-efficient upgrades can effectively mitigate higher oper-ating costs, safeguarding their profitability and positioning themselves for long-term com-netitive advantages over peers? petitive advantages over peers,' CIMB Securities adds.

CIMB Securities adds. The research house notes that a significant portion of existing government buildings have been identified as energy inefficient, thus an urgent need for large-scale retrofitting to bring energy use closer to best practice stand-ards. ards.

RE mechanisms	Year of introduction	RE covered	Quota based?
Feed-in-Tariff (FiT)	2011	Bioenergy, geothermal, small hydro	Yes
Large-scale solar (LSS)	2016	Solar	Yes
Net energy metering (NEM)	2016	Solar (rooftop)	Yes
Self consumption (Selco)	2017	Solar (rooftop, open to ground mounted and floating solar from January 2025)	No
Corporate green power programme (CGPP)	2022	Solar	Yes
Low carbon energy generation programme (LCEG)	2024	RE other than solar	Yes
Corporate renewable energy supply scheme (Cress)	2024	Solar	No
Community renewable energy aggregation mechanism (Cream)	2025	Solar (residential rooftop)	No

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