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The journey to solar power expansion



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The launch of the National Energy Transition Roadmap (NETR) in 2023 was a major starting point in accelerating market-based open access to renewable energy.

Since then, the Energy Transition and Water Transformation Ministry (PETRA) and the Energy Commission (ST) have initiated structural programmes to iron out fundamental issues with solar energy adoption, including its intermittent nature, grid stabilisation and the rollout of utility-scale solar generation projects alongside settlement mechanisms with solar producers.

Solving the intermittency problem

Expanding Battery Energy Storage Systems (BESS)

As solar power is intermittent and weather-dependent, BESS is the critical bridge to transform the variable solar energy supply into a reliable power source. BESS absorbs surplus midday solar power and discharges it during periods of low generation.

Tenaga Nasional Bhd (TNB) launched the first BESS system in the country to be connected to the national grid at Santong, Dungun in June, with a capacity of 100 megawatt (MW)/400 MW-hour (MWh).

PETRA Minister Datuk Seri Fadillah Yusof has said the ST is preparing to open tenders for large-scale BESS projects in the near term, adding that the latest Large Scale Solar (LSS6) programme is expected to require BESS in its design.

Stabilising the grid

TNB is investing RM43bil to strengthen the reliability, resilience and capacity of the national grid. In August, it commenced a new 500 kV National Grid Backbone transmission line. Upon completion by 2030, it will become the longest 500kV transmission system ever to be developed in Malaysia, spanning approximately 500km.

Utility-scale solar generation

The LSS6, announced in July, has an expanded total quota of **2,500 MW**, up from LSS5's **2,000 MW in 2024**. LSS6 will focus on strategic areas with high electricity demand growth, particularly in the southern Peninsula where many data centres are being developed.

LSS and the Corporate Green Power Programme (CGPP) and Corporate Renewable Energy Supply Scheme (CRESS) have opened up opportunities for property and construction companies to develop large-scale solar farms, attracting participation from **Sunway Construction Group Bhd (SunCon)**, **Gamuda Bhd** and **LBS Bina** in partnership with Solarvest Holdings Bhd.



(NETR target of RE capacity share by 2050)

Settlement mechanisms

Previous LSS programmes have come with a **21-year** power purchase agreement between the solar farm developers and TNB.

CGPP and CRESS both offer pathways for corporate consumers to purchase renewable energy.

While CGPP operates entirely on a virtual financial mechanism, CRESS introduces third-party access to the national grid where solar producers pay a System Access Charge (SAC) to physically wheel green power directly to corporate buyers.

Solar Atap (the successor to Net Energy Metering - NEM) allows consumers to install and operate rooftop solar PV systems for self-consumption while allowing surplus energy to be exported to the grid.

RM15 billion

(Estimated amount of private investment unlocked by LSS6*)

2.6 million

Tonnes annually
(Estimated reduction of carbon dioxide emissions enabled by LSS6*)

*According to PETRA



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