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TNB begins work on 500kV grid backbone to strengthen energy security

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The infrastructure will improve inter-regional power transfers, accommodate more RE and meet growing electricity needs

by TMR

TENAGA Nasional Bhd (TNB) has commenced development of a new 500-kilovolt (kV) National Grid Backbone transmission line, a strategic project aimed at strengthening Peninsular Malaysia's electricity network and supporting rising power demand.

The project, which is expected to be completed by 2030, will span about 500km across the east coast and become the longest 500kV transmission system developed in Malaysia.

The development will strengthen grid connectivity across Kelantan, Terengganu, Pahang, Negri Sembilan and Johor, while providing additional capacity to integrate renewable energy (RE) and support the country's energy transition.

The project site for the 500kV Transmission Main Intake Substation (PMU) Kampung Awah in Maran, Pahang, was launched last Friday by Pahang Menteri Besar (MB) Datuk Seri Diraja Wan Rosdy Wan Ismail, with TNB president



Pic by Hussein Shaharuddin

TNB is investing RM43b in grid development and modernisation between 2025 and 2027

and CEO Datuk Shamsul Ahmad in attendance.

PMU Kampung Awah will serve as a strategic transmission node along the Paka-Kampung Awah-Bahau South-Kulai East corridor, strengthening inter-regional power transfers and the resilience and reliability of the national grid.

It will also provide additional capacity to accommodate existing and future generation sources, including RE projects in the

eastern region.

Wan Rosdy said the project would strengthen Pahang's position within the national grid and help attract green and high-tech investments by improving transmission capacity and grid readiness.

"As a key transmission node within the 500kV national grid Backbone, the project will strengthen Pahang's connectivity to the National Grid and enhance our readiness to support new indus-

tries, high-value investments and emerging RE developments.

"This infrastructure will also create opportunities for local businesses and communities across the supply chain, further contributing to Pahang's economic development and positioning the state as an important contributor to Malaysia's energy transition," he said in a statement.

Shamsul said the project would strengthen Malaysia's energy secu-

rity while providing the capacity and flexibility needed to meet growing electricity demand and integrate more RE.

"A resilient and future-ready grid is fundamental to Malaysia's ability to meet growing electricity demand, integrate more RE and support sustainable economic growth.

"The 500kV National Grid Backbone will strengthen the transmission backbone of Peninsular Malaysia, providing the capacity and flexibility needed to meet the nation's evolving energy needs while advancing the National Energy Transition Roadmap (NETR)," he said.

The project is also expected to support growing electricity requirements from artificial intelligence (AI)-driven industries, data centres, digital infrastructure and high-value green investments.

TNB said the development forms part of its wider grid modernisation programme, with RM43 billion allocated for grid development and modernisation between 2025 and 2027.

The National Grid Backbone is expected to increase transmission capacity and flexibility while improving the efficiency and resilience of the electricity network, supporting implementation of the NETR.

It is also expected to create opportunities for local companies in engineering, construction, operations and related services as the infrastructure is developed.