



03 JUL, 2026

Battery storage poised for rapid expansion



The Star, Malaysia

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PETALING JAYA: The rise of renewable energy (RE) is forcing Peninsular Malaysia to confront a critical gap in its power system – the need for more battery energy storage capacity.

In a note to clients, MBSB Research quoted Tenaga Nasional Bhd (TNB) as saying that Peninsular Malaysia’s current system can absorb solar capacity of around six gigawatts (GW) compared to about 4.5GW currently.

Further increases in renewable penetration beyond that, would therefore, require more battery energy storage system (Bess) capacity.

“As a rule of thumb from TNB’s grid studies, every additional 1GW of solar capacity would require around 500 megawatt (MW) of Bess capacity,” said the research house.

MBSB Research recently visited the newly launched grid-connected Bess in Dungun and the Sultan Mahmud Power Station, which forms part of the larger Kenyir Power Station, Terengganu.

The Santong Bess in Dungun is the country’s first grid-connected system. It was fully commissioned on April 16, 2026.

It is a 100MW/400MWh Bess, meaning it

can discharge up to 100MW of power for around four hours.

This is the equivalent electricity support for 40,000 households in the East Coast.

The project was completed in 10 months or 309 days, ahead of the typical construction period of 18 months and it is also the first Bess in Malaysia constructed on an elevated reinforced concrete platform due to the swampy land.

The useful life for the asset is expected to be 21 years.

MBSB Research also noted that there is massive potential for hybrid hydro floating solar (HHFS). TNB Genco is spearheading a 2.5GW HHFS programme across its hydro reservoirs, which is among the flagship projects under the National Energy Transition Roadmap.

The first phase in Kenyir (Kenyir #1) will serve as the anchor project, with a BESS capacity of 297.5MW/1190MWh.

For context, the Kenyir Lake is the largest man-made lake in the peninsula with an approximate size of 369 sq km.

Kenyir #1 will take up about 522 acres of lake area, which is about 0.6%.

It will be built across 64 “islands” featur-

ing 1.1 million pieces of solar panels.

“Based on studies, 10% of the lake area could support up to 2.5GW of floating solar capacity.

“Theoretically, this could be increased to about 50% to 60%, which may reach a capacity of 7.5GW though this will depend on factors such as water levels, environmental constraints, operational requirement and other technical factors.”

Kenyir #1 will be developed under the Corporate Renewable Energy Supply Scheme, with DayOne Data Centres as the offtaker under a 21-year take-or-pay arrangement.

The project is structured through a strategic partnership between TNB Genco and Terengganu Inc (70:30).

Looking ahead, MBSB Research has maintained its “buy” recommendation on TNB, with a target price of RM16.40 per share.

At press time, the stock traded at RM14.24.

“The latest tariff framework under the Regulatory Period 4 provides greater stability and transparency, especially through the dynamic Automatic Fuel Adjustment that removes the lag in fuel-cost recovery thus, protecting TNB from fuel price swings.”