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TNB 'Grid of the Future' programme to ensure quality power supply

For that, the power utility company will be investing RM27b into important core upgrades and expansions between 2021 to 2023

by NUR HAZIQAH A MALEK

TENAGA Nasional Bhd's (TNB) Grid of The Future programme targets to ensure power quality is accessible to all users alike due to demand from the heavy technology use following the digital acceleration caused by the Covid-19 pandemic outbreak.

TNB chief grid officer Datuk Husaini Husin said as the country's population is more digitally-driven, power stability needs to be ensured by the power grid.

"We are becoming smarter in technology, which means we are also becoming more technologically-intensive.

"Just a small flicker of electricity supply can make productivity difficult, so we look to ensure the power quality is delivered by TNB," he said in an interview with *The Malaysian Reserve* recently.

TNB aims to invest RM27 billion in the Grid of the Future technologies, with money going into important core upgrades and expansions between 2021 to 2023, and expects to deliver an estimated GDP impact of RM20 billion on top of creating over 300,000 jobs in the same period.

"The programme has been divided into six investment categories,



Pic by Hussein Shaharudin
Husaini says TNB will continue to focus on developing a smart grid which will increase network reliability and grid control, as well as increase integration of distributed energy resources and RE

namely new grid connection, self-healing, refurbishment, digital intelligent infrastructure, safety and environment compliance, as well as smart tools and equipment," he said.

Husaini said the company's projects in 2021 would focus on meeting customer demand and ensuring system reinforcement for higher reliability and security of its transmission network.

TNB's annual report 2020 stated that the capital expenditure (capex) projects under the distribution grid will include continuation of the 500kV Backbone projects.

The group has obtained approval from the regulators to deploy RM6.8 billion worth of regulated network capex projects, 58% of which is to enable supply provision, and 28% to improve systems performance.

Under the ongoing advanced metering infrastructure programme approved by regulators, TNB will be installing another 600,000 meters in 2021 in the Klang Valley, to bring the total to 1.5 million smart meters.

Moving forward, the group has identified its key focus areas to ensure the transformation of its distribution grid.

Husaini said the group will continue to focus on developing a smart grid which would increase network reliability and grid control to allow for better troubleshooting, as well as increase integration of distributed energy resources and renewable energy (RE).

"We also look to unleash workforce capability to improve in customer-facing areas and customer service on top of excelling under the incentive-based regulation,

thus improving productivity and practise high safety culture.

"Other key focus areas include supporting government-led initiatives to help drive the energy transition in Malaysia, as well as digitalising business interfaces which will improve productivity," he said.

The group targets to provide network solutions through the establishment of the official service commitment through identified agreements and create a strategic business unit as interim to enhance the distribution's service delivery, efficiency and accountability in business operations.

Nationwide, the transmission lines of the grid infrastructure span across 24,607 circuit-km in the Peninsular, and 2,941 circuit-km in Sabah, spanning across 462 and 48 substations, respectively.

The infrastructure has transmitted a total of 123,290 gigawatt-hour (GWh) of electricity in the Peninsular, and 6,392 GWh in Sabah.

The grid has been a part of TNB's energy transition move and it is making significant investments into the national grid to enhance its ability to support increasing generation of renewable energy by its prosumers, reliably and efficiently.

The full automation of the grid will enable not only customers but also workers to better manage and aid in the consumption and energy supply.

Husaini said to ensure a safe, secure and reliable national grid system, TNB's strategy is to leverage on new technology and improve

efficiency by creating a self-healing grid while making greater use of demand management.

Husaini said peak demand of the grid has lowered marginally this year due to the movement control order and movement restrictions, which has reduced commercial use of power.

"The peak demand has decreased marginally in the Peninsular to 18,808 megawatt-hour, but with the re-opening of the economy and business, it will increase back to pre-Covid levels and likely even more," he said.

Currently, the national grid supplies power to 9.44 million homes and businesses along the length and breadth of Peninsular Malaysia and is interconnected to Thailand's EGAT grid system and Singapore Power's grid system.

The grid provides adequate, secure and reliable supply to meet electricity demand while performing at world-class standards, such as running at transmission system minutes of less than two minutes.

Husaini added that although there are clear goals and key highlights for the power utility's grid division, there are also challenges faced by the company in its investments.

Among the biggest challenges are safety as well as having to reach the expectations of increasingly environmentally conscious consumers and stakeholders.

"Another challenge includes having to buy the land in order to build the grid infrastructure," Husaini added.