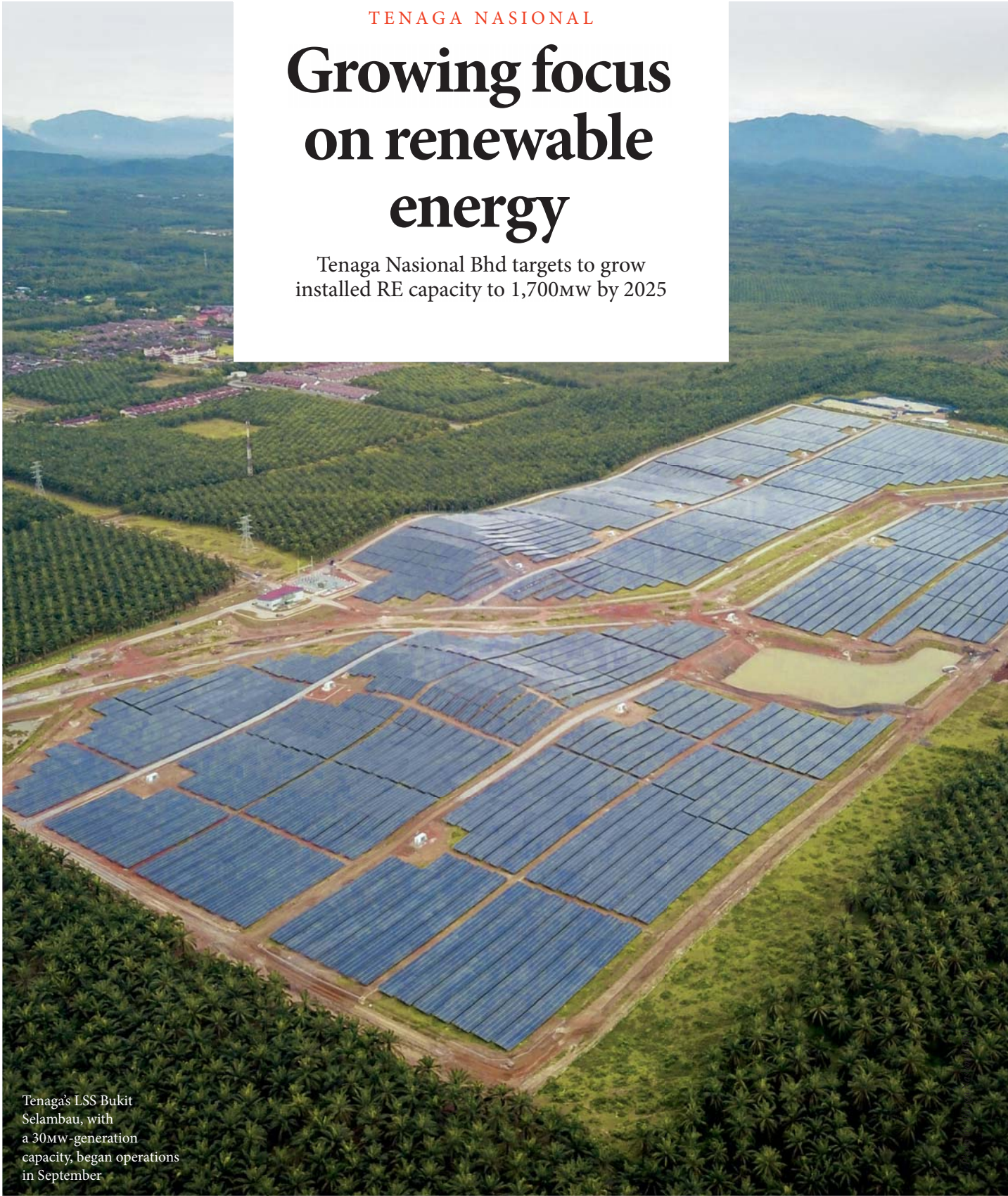


TENAGA NASIONAL

# Growing focus on renewable energy

Tenaga Nasional Bhd targets to grow installed RE capacity to 1,700mw by 2025



Tenaga's LSS Bukit Selambau, with a 30mw-generation capacity, began operations in September

TENAGA Nasional Bhd's investments in solar and wind energy in Malaysia and abroad affirm its commitment to renewable energy (RE) and support the government's target of 20% RE capacity by 2025. President and CEO Datuk Seri Amir Hamzah Azizan says the group continues to grow its RE portfolio — the plan is to increase it from the current 780MW to 1,700MW by 2025, with the sources determined by available and commercially viable technology as well as geographical suitability.

Currently, RE generation in Peninsular Malaysia amounts to 7% of the overall mix — contributed by solar and hydro. The RE mix has been steadily rising, particularly since the launch of the Feed-in Tariff (FiT) in 2011. The programme provided the much-needed boost to place solar and other RE sources as viable contributors to electricity generation in the country.

"In Malaysia, we are still looking largely at solar, although mini-hydro, biogas and biomass (including waste to energy) are already being implemented and, to a certain extent, are commercially viable. Locally, Tenaga successfully bid for the first two Large Scale Solar (LSS projects) and now own TNB Sepang Solar (50MW/78Mwp) and TNB Bukit

Selambau Solar (30mw/45mwp). Both are already in commercial operation status, providing clean and green energy to the system," says Amir Hamzah.

The LSS programme was introduced by the government in 2016 and through that, about 1,500MW of capacity were awarded through three rounds of LSS from 2016 to 2019. In June, the Energy Commission opened competitive bidding (the fourth cycle of the LSS) for 1GW of solar plants, worth about RM4 billion.

"We have invested in FTJ Bio Power Sdn Bhd (a joint venture with the Federal Land Development Authority) for a 10MW biomass power plant, 2 x 1.6MW biogas (operation) + 1.6MW (construction) with Sime Darby and a 4MW mini hydro plant in Sg Tersat, Terengganu, with a Terengganu-based company. Internationally, Tenaga has invested in solar and wind assets in the UK, with a total capacity of almost 400MW," says Amir Hamzah.

Tenaga owns 100% of Tenaga Wind Ventures, which is the largest FiT wind platform in the UK.

The group has ventures in renewables plants in Turkey and India. "The plan is to strategically grow our RE portfolio locally and abroad, with a focused approach in Southeast Asia from our Malaysian hub, and in Europe from our UK hub."

Amir Hamzah says that apart from

"It's important that the public is aware of the choices and trade-offs of the sources of energy we use today, and what it would take to transition to a more sustainable ecosystem."

~ Amir Hamzah

LSS, the group is committed to growing the rooftop solar segment. "Riding on the government's Net Energy Metering and Self Consumption Schemes, TNB — via its RE retail arm GSPARX — provides options to retail customers to generate clean and green solar energy on the rooftop of their own buildings while enjoying the benefit of lower electricity bills. The Zero Capex Solutions offered to businesses and government agencies accelerated the uptake of rooftop solar."

To date, GSPARX has secured 56MW of rooftop solar installations.

Recently, Tenaga — through GSPARX — signed an agreement with Malaysia Airlines Bhd to install solar panels on four of the airline's buildings at the Kuala Lumpur International Airport (KLIA). The photovoltaic (PV) panels will have a capacity of 2.210 megawatt peak (MWP), capable of generating about 2.86 gigawatt hours (GWh) of clean energy per year. Once completed in April 2021, the green energy generated from the project is expected to offset about 2,022 tonnes of CO<sub>2</sub> emissions for the first year, or about 56,638 tonnes of emissions until 2050 — translating into about 12,197 cars taken off the road or 933,520 trees grown.

### Strategic tie-ups

In addition to constantly evaluating up-and-coming technologies such as battery storage, low-speed wind turbine technology and hydro energy recovery, Tenaga works closely with partners and technology providers to test and establish robust business models to complement the technologies, says Amir Hamzah. "On top of that, we are working with technology companies to enable more efficient and optimised operations, especially in data analytics and remote monitoring," he adds, pointing to its collaboration with Envision Digital for the LSS plant.

By adopting cloud-based solutions, the utility giant is able to monitor and analyse the solar farm's performance remotely and achieve better returns on investment. "Our asset management team is able to support the site operations and maintenance team by utilising the in-built data analytics that

Photo by Mohd Shahrin Yahya/The Edge





A Tenaga employee on site at the LSS Bukit Selambau

allows faster decision-making and a focus on specific segments or areas of operation,” he says.

From the perspective of rooftop solar, partnerships with various players across the value chain of the industry will not only make solar an affordable and attractive alternative to retail customers but indirectly create a multiplier effect on the local economy,” says Amir Hamzah.

“GSPARX’s strategic collaboration with the financial institutions via various financing schemes eases the financial constraints for the mass market, particularly the small and medium enterprise (SME) and residential segment, to transition to solar energy,” he adds.

With strong support from the Ministry of Energy and Natural Resources and the Energy Commission, Tenaga has successfully introduced Renewable Energy Certificates (REC) in Malaysia. The certificate represents the delivery of 1Mwh of RE to the grid and all associated environmental benefits of displacing 1Mwh of conventional power. Malaysia Green Attributes Tracking System (mGATS) is a platform introduced by the utility giant that allows RE generators, retailers and customers to purchase RECs in 1Mwh blocks of electricity that are generated from RE.

### Investing in sustainability

Tenaga is also looking at investing in the sustainability of the sector as a go-

ing concern to reshape the economy in a post-Covid-19 scenario. “We see the need for some game changers for the Malaysian economy for it to move from being based on low value, low technology and low skills towards an economy driven by high value, high technology and high skills,” says Amir Hamzah.

The pandemic, although adversely impacting the economy, presents an opportunity for the country to consider reshaping the economy towards engines of growth that focus on the environment, innovation and people.

“Investments for a more robust and smarter grid to enable higher variable RE integration is already ongoing,” he says, adding that growing Malaysia’s RE mix, which is largely contributed by solar

without grid infrastructure upgrades and flexible capacity support, could pose a big challenge in scaling up RE.

“Power sector-related allocation and incentives can contribute towards capability building, upskilling and reskilling of employees for a future that will see innovative technology enable a sustainably-driven power sector, in tandem with shifts among energy companies to respond to ESG-gear (environmental, social and governance) investors,” says Amir Hamzah.

“To complement RE, it is also important to drive other energy transition levers such as electric vehicles (EV), energy efficiency (EE) as well as battery energy storage. We believe the future of mobility is electric.

“Malaysia’s overall economy stands to capture significant economic benefits from a robust EV industry and ecosystem by attracting manufacturers, incentivising consumers and scaling up charging infrastructure. Increasing both EV and EE adoption will create future-proof jobs, drive economic growth and facilitate de-carbonisation.”

Going forward, it would be crucial for Malaysia to have longer-term targets for RE beyond 2025, which would indicate the country’s sustainability aspirations for the future, says Amir Hamzah. “This would give a positive signal and confidence to industry players, investors and consumers alike to further invest in RE technologies and drive RE adoption in Malaysia.” ♦

*By Sreerema Banoo*



Tenaga’s wind turbine in Lancashire, England. TNB Renewable Energy’s subsidiaries in the UK — GVO Wind Ltd and Bluemerang Capital Ltd — are the largest Feed-in Tariff wind portfolios in that country, comprising 53 operational onshore medium wind turbines with a total combined capacity of 26.1MW.