

**Malaysia** – Tenaga Nasional Berhad (TNB), a government-linked company operating on the Malaysian peninsular, is developing a new hydropower project as part of its commitment to implement the government's Renewable and Green Energy Policy.

The Nenggiri hydropower plant will be located at Mukim Ulu Nenggiri, Jajahan Gua Musang, Kelantan Darul Naim, and will be one of several government-approved projects designed to meet Malaysia's growing energy demand. It will also help to meet government ambitions to increase the share of renewable energy to 40% by 2035.

In June 2021, TNB Power Generation Sdn. Bhd. (TNB Genco), a wholly owned subsidiary of TNB, received a Letter of Notification from the Ministry of Energy and Natural Resources granting the right to develop the 300 MW hydroelectric plant. TNB Genco then founded TNBPG Hydro Nenggiri Sdn. Bhd. (THNSB), a wholly owned Special Purpose Vehicle (SPV) company, as the project

company that will undertake the construction and operation of the hydroelectric plant. TNB, as the off-taker, signed a Power Purchase Agreement (PPA) with THNSB for a period of 30 years from the commercial operation date, scheduled for the middle of 2026.

**"Nenggiri will ensure  
a stable and reliable  
electricity supply for the  
people and the country."**

Datuk Baharin Din, CEO and president of TNB.

A consortium led by ANDRITZ was awarded the contract for the supply of the complete electro- and hydro-mechanical equipment for Nenggiri hydropower plant. The scope of supply comprises design, manufacture, supply, installation, and commissioning of two 153 MW turbines and two 180 MVA generators together with the auxiliary equip-

ment, and the complete electrical and mechanical balance of plant. This includes HV switchgear, main step-up transformers, cranes, HVAC, and firefighting systems, among other elements. The hydro-mechanical scope of the contract includes the intake, bottom outlet, spillway, draft tube, re-regulating dam radial gates and stop logs.

# MORE THAN JUST ANOTHER DAM



Once in operation, Nenggiri will deliver 300 MW to the national grid covering peak load demand for five hours a day, five days a week. It will provide fast start-up and spinning reserve duties in synchronous condenser mode when required. This function will be critical to the overall security of power supply, preventing massive blackouts arising from the sudden loss of large generators from the network.

The plant will also provide flood mitigation benefits with its ability to accommodate large amounts of rainwater during the monsoon season. The purpose of the re-regulating dam, located downstream of the main saddle dam, will be to regulate the river flow to a constant of approximately 39 m<sup>3</sup>/s. During the peak load operation, the re-regulating pond will smooth the outflows caused by short-term discharge variations in the river. Other benefits to the State of Kelantan are clean water supply and improvement of the irrigation for agriculture.

In the long term it is expected that the project will contribute to the socio-economic development of the local community in terms of tourism, aquaculture, and agriculture activities. During construction of Nenggiri, the peak demand for workers is estimated to be more than 2,000 people providing job opportunities to numerous local and Orang Asli (indigenous people in Malaysia) workers. The project will also boost local small industries by creating new economic opportunities once completed.

ANDRITZ is extremely honored to play a key role in this unique development and to be able to support TNB and the Malaysian people for a more sustainable energy future.

## TECHNICAL DETAILS

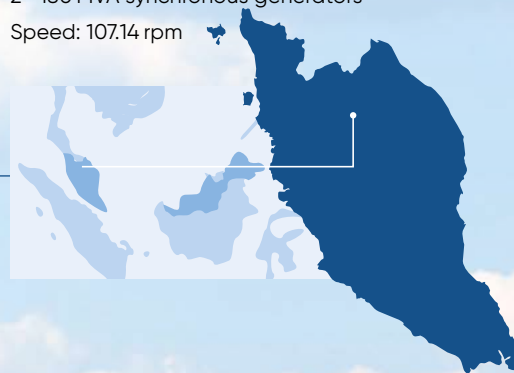
### Nenggiri

Total output:

2 × 153 MW vertical Francis turbines

2 × 180 MVA synchronous generators

Speed: 107.14 rpm



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## GROUND-BREAKING CEREMONY – A MILESTONE TOWARDS MORE RENEWABLE ENERGY

A festive ground-breaking ceremony of Nenggiri hydropower plant took place on June 12, 2022, and was attended by high-ranking delegations of government, economy and of course the customer and owner, Tenaga Nasional Berhad (TNB).

300 MW Nenggiri hydroelectric plant will provide peak load coverage to stabilize the national grid, as well as flood mitigation benefits for the downstream areas.

It is the largest single renewable energy project currently being implemented in Malaysia by TNB, and ANDRITZ is extremely proud to be the preferred partner for this prestigious undertaking.

