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Peninsula to get power from Sarawak?

Nine proposed hydropower projects to generate additional 4,000MW of electricity



by ADRIAN LIM

→ **STATE** power company Sarawak Energy Bhd, which is planning nine hydropower projects in the state, is targeting to supply electricity not only to neighbouring Indonesia and Brunei but also Peninsular Malaysia and Sabah.

Sarawak Energy CEO Torstein Dale Sjøtveit tells **FocusM** that the company has "an aspiration to supply electricity to Peninsular Malaysia but the proposal is still at a preliminary stage".

While there are no immediate plans for an interconnection between Sarawak and Peninsular Malaysia for the supply of electricity, Sjøtveit believes this option may have a role to play in meeting the peninsula's energy needs at some time in the future.

"For the plan to work, it will take more than seven years to complete. Assuming that we start the project in 2014, it will end beyond 2020.

"This is because it involves the laying of undersea cables

which span more than 600km. Besides, 80% of the cables will go through Indonesian waters," Sjøtveit explains.

The company is currently in negotiations with its counterparts in Brunei and Sabah and has signed an agreement with Indonesia's PT PLN Persero for the export of 230 megawatts (MW) of electricity to West Kalimantan, expected to start by 2015.

Sjøtveit says hydropower will be one of the biggest and most viable

renewable energy sources in the future. He foresees huge potential for electricity demand, especially from the state's development of the Sarawak Corridor of Renewable Energy (Score), which covers an area of more than 70,000 sq km of the state's resource-rich central region.

Hydro projects in the works

The construction of an additional nine hydroelectric projects will enable Sarawak to become a renewable energy hub. "We can leverage on the development of Score to capitalise on our power supply especially to heavy industries in Samalaju Industrial Park [a 7,000ha industrial park near Bintulu].

He says that Sarawak Energy has signed power purchase agreements with international companies such as Tokuyama Corp of Japan, Asia Minerals Ltd of Hong Kong, OM Holdings Ltd of Australia, PT PLN Persero and local firm Press Metal Bhd. "The agreements outline that power demand will total up to about 2,300MW."

Sjøtveit confirms the company is negotiating with 10 other potential customers. "They are operating in industries such as aluminium, titanium, silicon, manganese, fertilisers and pharmaceuticals."

He notes that the strength of demand for power from Score, especially from energy-intensive customers, will push up the demand for electricity in the future.

In addition to catering to the industries in Score, he says Sarawak Energy is also committed to becoming a regional powerhouse through the export of power.

He points out that all the energy from the Bakun and Murum dams have been sold and at present, there is demand from customers competing for the electricity that will become available in the future.

Sjøtveit adds the nine proposed hydroelectric dams, which are at various stages of feasibility and pre-engineering investigation, are located at Baram, Baleh, Pelagus, Lawas, Baram 3, Belaga, Trusan 2, Limbang 1 and Limbang 2.

He notes that construction of the dams will begin only after feasibility studies and comprehensive social and environmental impact assessment (SEIA) report have been conducted by

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Sarawak's growth beyond 2020

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Sarawak Energy and approvals granted by either the National Resources and Environment Board (NREB) or the state's SEIA steering committee.

Sjøtveit says the nine dams would produce just over 4,000MW of electricity. Together with the 2,400MW capacity of Bakun and nearly 1,000MW from Murum, this would bring the potential power supply to 7,400MW.

He adds that projections indicated residential, retail and commercial customers in Sarawak will require 2,000MW while customers from Score will require 6,000MW by 2020. In terms of its power generation roadmap, Sarawak Energy expects to have 5,000MW of electricity supply on-line by 2015, while the ultimate target is to reach 8,000MW by 2020.

No overcapacity

On the question of whether there will be an overcapacity given the huge power generation from the upcoming hydroelectric projects, Sjøtveit says the surplus capacity will power Sarawak's growth beyond 2020 while any excess will be exported to other countries, creating more trade for the state.

"An overcapacity situation will not arise because at any one point, Sarawak needs to maintain a margin of 20%, which is a buffer against any shortfall. In Peninsular Malaysia, the margin is 30%," he explains.

Sjøtveit adds that in terms of power generation mix, the company also depends on gas and coal. He notes that the company's present energy mix comprises 47% from gas, coal (41%), hydro (8%) and diesel (4%). However, he is optimistic that power generation through hydro will change in the future.

He points out that hydro will contribute a larger percentage of the energy mix

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of the company given its benefits as a clean and sustainable source of renewable energy. Going forward, Sarawak Energy forecasts that new developments in the group will result in a balanced generation mix of 69% from hydro, coal (19%), gas (10%) and diesel (2%) by 2020.

Aside from hydro-generation, he says Sarawak Energy is also planning to develop new coal-fired plants to diversify the company's power generation portfolio and to fully utilise the state's natural resources.

He reveals that the first of these developments is the Balingian coal-fired plant in the Mukah area, which is set to commence construction this year with production slated for late-2015.

On solar energy, he says cloud cover and high levels of precipitation make solar power non-viable, considering that solar power output would struggle to cater to the huge demand of energy-intensive industries.

Sarawak Energy is the project owner and developer of two hydroelectric projects in Sarawak, namely the Batang Ai and Murum dams.

On financing for the hydroelectric projects, Sjøtveit notes that Sarawak Energy has a RM15 bil sukuk facility which can sustain the company's financials until 2016. Going forward, the company may

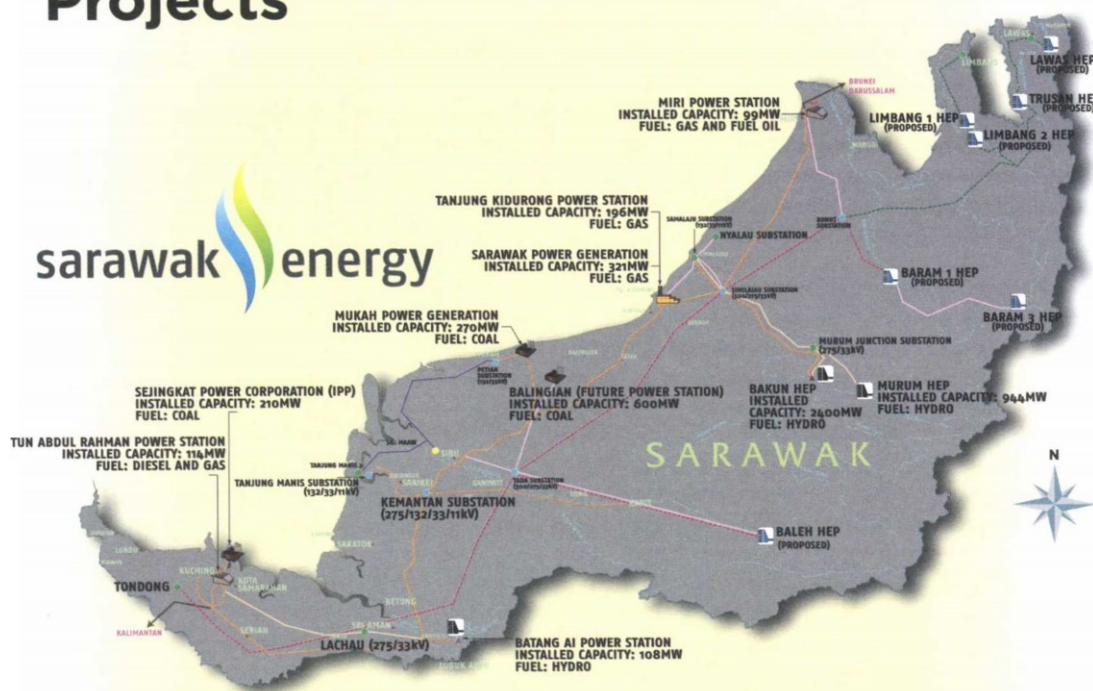
require additional financing if there are more hydroelectric projects in the pipeline. **FOCUSM**



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Sarawak's Hydropower Projects



LEGEND

- MAIN POWER STATION
- SUBSTATION
- FUTURE SUBSTATION OR UNDER CONSTRUCTION
- PLANNED SUBSTATION
- GAS POWER STATION
- EXISTING HYDRO
 - BATANG AI
 - BAKUN
- FUTURE HYDRO
- COAL POWER STATION
- 275KV TRANSMISSION LINE
- 132KV TRANSMISSION LINE
- 275KV TRANSMISSION LINE - UNDER CONSTRUCTION
- 275KV TRANSMISSION LINE - PLANNED
- TRANSMISSION LINE - PLANNED
- 132KV TRANSMISSION LINE - PLANNED
- 500KV TRANSMISSION LINE - PLANNED
- PLANNED INTERCONNECTION
- MAJOR RIVER