



Panel discussion in Asian Power Utility Forum's Jakarta leg

# Indonesia seeks 17GW of power projects to hit ambitious electricity supply targets

But IPPs face regulatory hurdles that hamper the development of renewables and other energy sources.

**A**t the Jakarta Leg of the 2019 Asian Power Utility Forum, executives as well as thought leaders in Indonesia's massive power industry exchanged strategies that aim to address the country's growing demand for power and push its ongoing electrification project into completion.

Indonesia has a project pipeline for 17GW of generation capacity designed to hit the targets identified by the Electricity Supply Business Plan (RUPTL), according to **Dharma Djojonegoro**, deputy CEO of Adaro Power. However, developing IPP projects in the past few years has been fraught with difficulties amidst policy changes, he said.

### IPP challenges

Indonesia's IPPs are struggling to get new projects off the ground since the government changed its tender selection process in 2017. Under the new rules tenders are now being run by PLN subsidiaries and often they are demanding a majority ownership stake whilst demanding the IPP puts up a majority of the equity.

Djojonegoro said that two years ago, state utility PLN decided to change its normal tender procedure. Under its new

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scheme, PLN will assign projects to its subsidiaries, PT Indonesia Power (IP) or PT Pembangkitan Jawa-Bali (PJB), which also have their own selection process for their partners.

"In recent projects, IP or PJB demand to own 51% of the project and ask the partner to finance most of the equity portion," Djojonegoro said. "To be honest, it's been very challenging for the past few years," he added.

Another issue concerning IPPs is the recent trend in power purchase agreements (PPA) which are now given by PLN for a shorter duration. "We've also seen a worrying trend in the latest PPAs. The take-or-pay commitment (ToP) is now reduced," Djojonegoro said.

This means that PLN now only offers ToP commitment for the tenor of the senior loan, which previously was offered for the entire term of the PPA. "Previously it was up to 25 years, now the ToP is only offered for 10 years or below," Djojonegoro added.

Moreover, for terminations caused by grid errors, PLN could only guarantee a return of 10% or less under the revised scheme. "Obviously, this is difficult for sponsors to accept even if the grid is completely out of power," Djojonegoro

commented, citing that previous PPAs provided for 15% of sponsors' return.

### New procurement process

Whilst coal-centric Adaro Power is mostly keen on exploring solar photovoltaic (PV) and other renewables, development is largely difficult due to PLN's new procurement scheme or the DPT prequalification process (DPT), Djojonegoro said. This view was shared by **Nadia Soraya**, partner at HHP Law Firm, who noted that delays in the DPT have put development on hold and has even caused the two-year absence of renewable project tenders after the first DPT.

However, it's not only the DPT that's hindering the installation of renewables in Indonesia. Soraya said that issues lie in the renewable tariff that, in practice, is still capped at regional electricity generation costs (BPP) even if regulations allow for B2B negotiation.

### Hamstrung solar C&I projects

Apart from the interest from IPPs, experts have observed an increased attention towards solar rooftop projects from commercial and industrial (C&I) businesses, especially from companies with facilities or partners in the country.

## LNG IN EASTERN INDONESIA

### Gas to fire up demand for power in Eastern Indonesia amidst generators' low utilisation rates

State power utility PLN and other gas companies are looking to procure facilities for breaking liquefied natural gas (LNG) and distributing it to Kalimantan, Sulawesi, and other islands in Eastern Indonesia. Indonesian gas company PT Energi Nusantara Merah Putih (ENMP) is developing an LNG bulk-breaking terminal on the regency of Bantaeng, which would be the first of its kind in Eastern Indonesia. The firm is banking on the growing electricity demand brought about by four nickel smelters being developed in the region and its status as a Special Economic Zone.

"In 2019, there will be 1.5GW of existing capacity across Eastern Indonesia that will need 101.7 billion cubic feet a day of gas. By 2025, it will be 2.5GW thanks to planned projects or projects in execution as we speak," said **Bret Mattes**, vice president for gas of ENMP's consultant Numada.

In order to hit this capacity forecast, there are 15 planned receiving stations in

Eastern Indonesia that will be supplied by LNG liquefaction plants. However, PLN and gas companies have to first resolve the existing issue of dual fuel generators, which are not fully serving their purpose.

"Those facilities will need that amount of gas (101.7 billion cubic feet a day), if they were being run on gas," Mattes said. "They can run on gas or diesel. To date, they haven't generated a single electron using gas," he added.

#### Low utilisation capacity

The existing generator sets have low utilisation capacity, which is currently below the typical 80%. Mattes said, "The daily low curves are up and down, and it makes it difficult to average more than 50% in most of the areas where these plants are located."

Moreover, there's a "cynical view" that PLN may have an incentive not to grow its business in Eastern Indonesia if the tariff that they're receiving is below the cost. "Because they're using diesel, they're always losing money. There's no incentive to take the capacity factor up to be more efficient or to use the grid more efficiently," he added.

The levelised cost of power using diesel is about 60 cents per kWh. "It's losing vast amounts of money on this deal," Mattes said.

However, Mattes argued that PLN can raise the utilisation capacity to 80%. In order to meet this demand growth, Indonesia has to move away from gensets. Mattes laid out potential infrastructure that can be built across Eastern Indonesia in the coming years. He raised the possibility of using receiving stations for plants with over 50MW capacity, which could have one to four storage tanks of 2,000-5,000 sqm of gas. "Small-scale regasification is relatively cheap and efficient," he said.

With these facilities, Mattes said that the total cost across the LNG supply chain could fall within the range of 9.8-16.8 cents per kWh, with illustrative fuel costs at 7.6-13 cents per kWh.



Bret Mattes, vice president for gas, Numada

Solar rooftop C&I projects are expected to shed some load off Indonesia's national electricity grid and become a captive power plant that independently powers a growing number of large industrial factories, which could grow to 9,000 in the next 30 years.

However, Indonesia's C&I clients need to overcome various regulatory hurdles as the process for building projects and selling excess electricity to the grid is not as straightforward compared to other jurisdictions like Singapore and Australia. Developers may find it hard to navigate complexities in the two prevailing models used for Indonesia's solar C&I projects - the power purchase agreement (PPA) model and operating rental, Soraya said.

One delegate told *Asian Power* that a large American footwear manufacturer had plans for 15 factories worth of capacity but was insisting these had to be all 100% carbon-free powered, and that this was proving difficult to achieve in Indonesia. As a consequence, they were examining the option of shifting to Vietnam.

As a general rule, all of Indonesia's territories are franchise areas of state utility PLN, which has the sole mandate of selling electricity to these locations. The exception to this emerges with the PPA model, which entails that the factory site is "carved out" from PLN's franchise area and turned into a business area for the factory only.

Consequently, the factory owner has to own the factory building and the solar rooftop plant. The factory owner

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will need to provide a reliable supply to everyone within the area and will be unable to buy power from PLN.

#### Existing opportunities

"Regulations tend to be changed very, very often in the last few years," said **Surya Darma**, chairman of Masyarakat Energi Terbarukan Indonesia (METI). In order to keep regulations in place, organisations including METI are lobbying to standardise regulations through legislation.

This was also raised by **Dieter Billen**, principal at Roland Berger, who said that Indonesia is one of the Southeast Asian countries that lack ambition in terms of renewable energy and have no clear targets in spite of projections that estimate power demand to grow 3.2% to 3.8% yearly, nearly double of energy giant China.

**Mathieu Geze**, head of Asia business

development at HDF Energy, presented the concept of Renewstable, which attaches hydrogen storage to a plant with intermittent energy sources such as renewables, removing the need for traditional distribution facilities. According to Geze, HDF Energy was able to raise their plants' capacity factor to 80-90%, much higher than 20% and above in renewables plants.

Aside from renewables, liquefied natural gas (LNG) also presents opportunities for addressing power demand especially in Eastern Indonesia, wherein geography issues make it difficult to build transmission lines and only portable gas-fired generation sets are present in remote islands. **Bret Mattes**, vice president for gas at PT Energi Nusantara Merah Putih, discussed the prospects of an LNG terminal in Eastern Indonesia that could promote energy security and bring down electricity costs.



Nadia Soraya, partner, HHP Law Firm