



PUBLIC-PRIVATE PARTNERSHIPS BRIEFS

Indonesia: Asahan Hydroelectric Power Plant



Overview

The elevation difference in Northern Sumatra's Asahan River and Lake Toba region has been used for its hydroelectric power generation capacity since 1975. Bajradaya Sentranusa (BDSN), an Indonesia energy company, has set up a 180 megawatt (MW) hydroelectric power plant (HPP), Asahan I, to provide low-cost, renewable, and dependable power in Indonesia. IFC supported this project through equity and debt finance.

This series showcases how the World Bank Group supports the development and implementation of public-private partnerships. This support comes in the form of public sector loans, private sector finance, sector and transaction advice, guarantees, and output-based aid.

Background

Indonesia annual energy consumption, currently estimated at 1.044 billion barrels of oil equivalent, is expected to rise 2.5 times by 2030. Now, 51 percent of this energy need is met through fuel-based sources and with the growth expected in energy consumption, this demand is likely to exert macroeconomic stress on the developing country. Similarly the consumption of electricity in Indonesia is expected to grow at an average of 8.4 percent per year to a total of 386.6 TWh by 2022. The Government of Indonesia (GoI) is keen to raise the stakes of new and renewable energy sources share of the energy mix from 5.7 percent in 2011 to about 20 percent by 2022.

Consequently, the development of hydroelectric capacity is a priority for GoI. State-owned utility PT Perusahaan Listrik Negara (PLN) has identified 96 potential hydroelectric power sites in Indonesia, of which 40 percent will be open to private developers. However, the development of hydropower in Indonesia is not without obstacles as the archipelago country has a vast area under protected forest coverage and many disparate islands. An equally significant challenge is the lack of qualified local developers who can invest in this sector.

World Bank Group Role

Asahan I is developed by BDSN, an independent power producer (IPP) whose principal shareholders are Fareast Green Energy Pte. Ltd. and PT Pembangunan Jawa Bali (PJB), a subsidiary of PLN. Asahan I is a 180 MW run-of-river hydroelectric power plant located in Indonesia's North Sumatra Province. The plant has been operational since January 2011 and sells electricity to PLN in accordance with a long-term power purchase agreement expiring on December 31, 2040. The contract stipulates an annual "take-or-pay-energy level" of 1,175 GWh of electricity.

To improve the financial sustainability of BDSN and the Asahan I HPP, IFC acquired a minority stake in the company and provided it a \$280 million loan facility. The financing agreements comprise of IFC

loans of \$75 million as well as syndicated and parallel loans of \$205 million. The parallel loan lender is PT Indonesia Infrastructure Finance, a private financing institution, and the syndicated-loan lenders are KDB (Korea Development Bank), Maybank International Labuan Branch, Natixis Singapore Branch, Societe Generale, and Sumitomo Mitsui Banking Corporation.

The investment in BDSN is part of IFC's strategy of building long-term partnerships in renewable-energy sectors that power development. Asahan I, which is powered by the river's natural flow, has been providing reliable power at a low cost since it started operating in January 2011 and is now a cornerstone of the country's regional electricity grid.

Outcomes

Increased access to consistent power: more than a quarter of Indonesia's growing population is not connected to the national grid, leaving about 66 million people without access to electricity; the Sumatra grid suffers the longest blackouts among all of the country's regional grids.

Reduced reliance on fossil fuels: sixty percent of Indonesia's electricity supply in 2012 came from coal and oil, both of which are polluting fuels that produce high carbon emissions.

Reduction in the cost of power generation: estimated savings from BDSN's power generation is up to \$250 million per year based on the marginal cost of production in the North Sumatra grid of around 30 cents per kilowatt hour using diesel fuel.

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