

NAM NGUM 2 POWER CO., LTD

No. 59/2017

31 August 2017

| | |
|------------------------|--------|
| Company Rating: | A |
| Issue Rating: | |
| Senior unsecured | A- |
| Outlook: | Stable |

Company Rating History:

| Date | Rating | Outlook/Alert |
|----------|--------|---------------|
| 26/07/17 | A | Stable |

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WWW.TRISRATING.COM**Rating Rationale**

TRIS Rating affirms the company rating of Nam Ngum 2 Power Co., Ltd. (NN2PC) at "A". At the same time, TRIS Rating assigns the rating of "A-" to NN2PC's proposed issue of up to Bt6,000 million in senior unsecured debentures. The one notch below the company rating reflects the structural subordination of the proposed debentures, compared with existing loans from banks. The proceeds from the proposed debentures will be used for refinancing part of its existing project loans.

The ratings reflect the stable cash flows the company receives from long-term power purchase agreement (PPA) with the Electricity Generating Authority of Thailand (EGAT), rated "AAA" by TRIS Rating, and the experience of its shareholders and management team in operating hydroelectric power plants. The ratings also take into consideration the structural protection embedded in the project contracts and the proven technology used in its hydroelectric power plant. However, the ratings are constrained by the unpredictability of the water flow in the Nam Ngum river and the sovereign risk of the Lao People's Democratic Republic (Lao PDR), rated "BBB+/Negative" by TRIS Rating, where the hydroelectric power plant is located.

As an affiliate of the CH. Karnchang Group (the CK Group), NN2PC is one of the flagship companies of the power business under the CK Group. It was incorporated in 2007, under the laws of the Lao PDR, to own and operate Nam Ngum 2 hydroelectric power plant. The ultimate major shareholders of NN2PC comprise CK Power PLC (CKP, with a 42% stake), Ratchaburi Electricity Generating Holding PLC (RATCH; 25%), and EDL-Generation PLC (EDL-Gen; 25%). CKP is an energy holding company of the CK Group. Currently, CKP invests in the small power producers (SPP) power plants, renewable power plants in Thailand, and the Xayaburi hydroelectric power project in Lao PDR. RATCH, rated "AAA" by TRIS Rating, which is 45% owned by EGAT, is the largest group of private power producers in Thailand, with an aggregate power generating capacity of 6,496 megawatts (MW) as of March 2017. EDL-Gen is a subsidiary of Electricite du Laos (EDL), a state-owned enterprise of the Government of Lao (GOL). EDL-Gen is rated "BBB+/Negative" by TRIS Rating.

The Nam Ngum 2 hydroelectric power plant has an installed capacity of 615 MW. It is located on the Nam Ngum river, 35 kilometers (km.) upstream from the 150-MW Nam Ngum 1 hydroelectric power plant. The construction of the power plant was completed on time within the budget of about Bt31,000 million. The plant was commenced an initial operation in March 2011 and commenced a commercial operation in January 2013.

NN2PC's contractual framework helps mitigate most of risks associated with the projects. The market risk is mostly mitigated through the PPA with EGAT. NN2PC holds a 25-year PPA with EGAT which started after the commercial operation date (COD). The PPA is based on a take-or-pay basis. EGAT has an obligation to buy up to a total of 2,310 gigawatt hours (GWh), the Annual Supply Target, of electricity from NN2PC every year. For its part, NN2PC has an obligation to maintain the plant availability at a minimum of 10 hours per day, equivalent to

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approximately 1,722 GWh per annum or 77% of the Annual Supply Target. The electricity tariff is precisely specified in the PPA, which has a step-up about 7.8% in 2019. Half of the tariff is paid in Thai baht and the other half is paid in US dollars.

The Annual Supply Target is based on the average of yearly water inflow of 6,270 million cubic meters (mcm), calculated from the historical records kept from 1949-2003. The average water inflow during 2011-2016 was 6,529 mcm per year, 4.1% higher than the historical average.

The PPA also contains a mechanism to protect the company's cash flows from the hydrology risk. The mechanism allows NN2PC to sell more electricity than the Annual Supply Target in the wet years, or years with plentiful rainfall, and then receive compensation for that excess amount in dry years, when electricity production falls below the Annual Supply Target. Whenever NN2PC sells an amount of electricity below the Annual Supply Target, the shortage amount can be added on the Annual Supply Target in the following years.

The operational risk has minimized because EGAT operates the plant. NN2PC holds an operation and maintenance agreement (OMA) with EGAT covering the entire term of the PPA. EGAT has extensive experience and expertise in operating hydroelectric plants in Thailand. With EGAT running NN2PC's power plant, the operational risk should be mitigated to a significant extent. Since the date of initial operation in March 2011, the plant availability factor has been higher than 96% and the success ratio of unit startup has been more than 99% on average. NN2PC also contracted with EGAT for Major Maintenance Services. The scope of services includes the preventive maintenance and corrective maintenance. The term of the contract is seven years, ending 2019. The contract contains an option to extend the contract, and the option will most likely be exercised.

The money transfer and convertibility risk is mitigated through the concession agreement with GOL. The concession agreement provides NN2PC the right to receive and hold its revenue account outside Lao PDR. The revenue received from EGAT is paid to NN2PC's account in Thailand. The concession agreement also provides NN2PC the right to use the water in the Nam Ngum river to generate electricity. NN2PC is also granted an exclusive lease of the site, including the land, the reservoir, and the right of way for access roads and transmission lines. However, NN2PC is obliged to pay a royalty fee and corporate income taxes to the GOL, as specified in the concession agreement. The project is also required to implement environmental management and social development plans for affected stakeholders, in accordance with international standards.

With the mechanism containing in the PPA, NN2PC's revenue and earnings before interest, tax, depreciation, and amortization (EBITDA) were quite stable, even in the years when the water inflow was below the historical average. Revenue during 2011-2014 was in a range of Bt3,800 million to Bt4,200 million per year. EBITDA was in a range of Bt3,000 million to Bt3,300 million per year. The water inflow ranged from 5,800 mcm to 6,700 mcm per year. During 2015-2016, the water inflow was lower than the average of historical data for two consecutive years. The company produced 2,104 GWh in 2015 and 2,109 GWh in 2016. However, the company's revenue still stood at about Bt3,800 million per year, while EBITDA slipped to nearly Bt3,000 million per year, close to previous years. The drop in production in 2015 and 2016 may not cause a long-term deterioration in cash flows because the shortage amount can be added to the Annual Supply Target for the following years.

The company's financial profile is moderate. The tariff and funding structures of the project leave NN2PC exposed to some foreign exchange risk. The company receives half of the electricity tariff payment in Thai baht and half in the US dollars. However, NN2PC's financing structure comprises loans of approximately 70% of which are denominated in Thai baht and 30% denominated in US dollars. NN2PC is also exposed to interest rate risk because the interest rate on the project loan is based on two floating rates: the minimum lending rate (MLR) for the Thai baht loan, and LIBOR (London Interbank Offer Rate) for the US dollar loan.

Looking forward, TRIS Rating forecasts NN2PC's EBITDA will be in a range of Bt3,000-Bt3,600 million per year during 2017-2019. The forecast is based on the expectation that NN2PC can achieve the Annual Supply Target at 2,310 GWh per year, with an annual water inflow of 6,270 mcm per year. The mechanism contained in the PPA will help the company achieve the target even when there are some fluctuations of the water inflow each year. NN2PC has set a budget of Bt3,120 million for 2016-2018 to upgrade the Nabong substation as required by the PPA and GOL. Given EBITDA and capital expenditures at the forecast levels, the company's debt to EBITDA ratio will be in the range of 4-5 times.

Rating Outlook

The "stable" outlook reflects TRIS Rating's expectation that NN2PC will continue to receive stable cash flows from its power plants. The power units and water inflows in the reservoir are expected to be well managed, enabling NN2PC to achieve the Annual Supply Targets in both wet and dry years.

The upside of NN2PC's credit ratings would be likely if NN2PC demonstrates stronger performance on a sustainable basis. The downside case may emerge if cash flow deteriorates or if NN2PC makes any large investments, which deteriorate the company's financial profile.

Nam Ngum 2 Power Co., Ltd. (NN2PC)

| | |
|---|--------|
| Company Rating: | A |
| Issue Rating: | |
| Up to Bt6,000 million senior unsecured debentures due within 10 years | A- |
| Rating Outlook: | Stable |

Performance Statistics of Nam Ngum 2 Hydroelectric Power Plant

| | Jan-Jun 2017 | 2016 | 2015 | 2014 | 2013 | 2012 |
|--|-----------------|-------|-------|-------|-------|-------|
| Plant Performance | | | | | | |
| Electricity generation (GWh) | 794 | 2,109 | 2,104 | 2,215 | 2,568 | 2,180 |
| Total availability (%) | 99.4 | 97.6 | 96.5 | 97.1 | 97.3 | 96.5 |
| Planned outage (GWh) | 11.2 | 106.4 | 60.3 | 81.9 | 86.2 | 122.5 |
| Maintenance outage (GWh) | 2.8 | 19.8 | 57.2 | 52.8 | 54.6 | 42.5 |
| Short notice and forced outage (GWh) | 0.0 | 1.0 | 8.4 | 24.9 | 3.2 | 9.7 |
| Reservoir Management | | | | | | |
| Water level at the end of period (masl) | 345.4 | 371.1 | 372.4 | 373.7 | 372.3 | 370.7 |
| Water Inflow (mcm) | 952 | 5,360 | 5,806 | 6,342 | 7,029 | 5,858 |
| Reservoir stock at the end of period (mcm) | 2,620 | 4,747 | 4,779 | 4,851 | 4,714 | 4,440 |

* Since initial operation date on 26 March 2011

Notes: GWh = gigawatt hours

masl = meter above sea level

mcm = million cubic meters

Financial Statistics and Key Financial Ratios*

Unit: Bt million

| | Jan -Jun 2017 | Year Ended 31 December | | | | |
|--|------------------|------------------------|--------|--------|--------|--------|
| | | 2016 | 2015 | 2014 | 2013 | 2012 |
| Sales | 1,441 | 3,815 | 3,883 | 3,976 | 4,115 | 3,852 |
| Gross interest expense | 494 | 854 | 895 | 987 | 1,225 | 1,282 |
| Net income from operations | 123 | 1,041 | 972 | 1,080 | 1,116 | 721 |
| Funds from operations (FFO) | 652 | 1,777 | 2,095 | 2,185 | 2,150 | 1,823 |
| Earnings before interest, tax, depreciation, and amortization (EBITDA) | 1,118 | 2,997 | 2,962 | 3,165 | 3,337 | 3,072 |
| Capital expenditures | 890 | 1,015 | 24 | 25 | 12 | 48 |
| Total assets | 27,359 | 27,138 | 28,876 | 29,737 | 30,412 | 30,903 |
| Total debt | 16,701 | 16,347 | 16,209 | 17,485 | 18,928 | 20,043 |
| Shareholders' equity | 9,995 | 10,301 | 12,141 | 11,894 | 11,113 | 10,565 |
| Operating income before depreciation and amortization as % of sales | 77.3 | 78.1 | 75.8 | 79.4 | 80.9 | 79.6 |
| Pretax return on permanent capital (%) | 6.0 ** | 6.9 | 6.5 | 7.0 | 7.4 | 6.5 |
| EBITDA interest coverage (times) | 2.3 | 3.5 | 3.3 | 3.2 | 2.7 | 2.4 |
| FFO/total debt (%) | 8.8 ** | 10.9 | 12.9 | 12.5 | 11.4 | 9.1 |
| Total debt/capitalization (%) | 62.6 | 61.3 | 57.2 | 59.5 | 63.0 | 65.5 |
| Total debt/ EBITDA (times) | 6.1** | 5.5 | 5.5 | 5.5 | 5.7 | 6.5 |

* Consolidated financial statements

** Annualized with trailing 12 months

TRIS Rating Co., Ltd.

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