



TRIS RATING

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CreditNEWS ข่าวเครดิต

News for Investors

Announcement No. 327

15 June 2005

Ratchaburi Electricity Generating Company Limited

Company Rating:

AA

Rating Outlook:

Stable

Rating History:

Company Rating

Issue Rating

Secured

Unsecured

26 Jun 2003

AA-

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Rating Rationale

TRIS Rating upgrades the company rating of Ratchaburi Electricity Generating Co., Ltd. (RATCHGEN) to "AA" from "AA-". The upgrade reflects the company's proven record of managing its power plant operations. The rating reflects its stable cash flow from well-designed project structures, state-of-the-art power plants, and the operator's long experience in the power sector. The rating also takes into consideration the operation risk of the power plant and uncertainty about the planned deregulation of the power industry.

RATCHGEN is a wholly-owned subsidiary of Ratchaburi Electricity Generating Holding PLC (RATCH), which is 45% owned by the Electricity Generating Authority of Thailand (EGAT). RATCHGEN is the largest private power generating company in Thailand, with total installed capacity of 3,645 MW, which is equivalent to 14% of Thailand's total installed capacity as of December 2004. The company has 25-year power purchase agreements (PPAs) with EGAT and a 25-year gas sale agreement (GSA) with PTT PLC (PTT). The company's operating performance in 2004 was satisfactory. Its equivalent availability factor (EAF) of the thermal and combined cycle units could be maintained in line with the PPAs at 96% and 92% respectively. Its electricity sales recorded a 11.8% increase, from Bt35,528 million in 2003 to Bt39,714 million in 2004. Its debt service coverage ratio (DSCR) without reserve accounts and after net changes in working capital was 1.7 times in 2004.

Rating Outlook

The "stable" outlook reflects TRIS Rating's expectation that RATCHGEN will continue to receive stable cash flows from the Ratchaburi power plants. The plants are expected to maintain their operational performance in line with the PPA targets.

Key Rating Considerations

Strengths/Opportunities

- Well-structured project fundamentals
- Stable cash flow from 25-year PPAs with EGAT
- State-of-the-art power plant technology with credible suppliers
- Operation and maintenance agreement with EGAT
- Increasing demand for electricity

Weaknesses/Threats

- Uncertainty of the power industry reform and EGAT's status after privatization
- Dependency on a single customer

Corporate Overview

Ratchaburi Electricity Generating Co., Ltd. (RATCHGEN) is a wholly-owned subsidiary of Ratchaburi Electricity Generating Holding PLC (RATCH), which is 45% owned by the Electricity Generating Authority of Thailand (EGAT). RATCH and RATCHGEN were established in 2000 to purchase the Ratchaburi power plants from EGAT. RATCHGEN, the largest private power generating company in Thailand, has the total installed capacity of 3,645 MW, which is equivalent to 14% of Thailand's total installed capacity as of December 2004. EGAT operates RATCHGEN's power plants under an operation and maintenance agreement (OMA) and is RATCHGEN's sole customer under power purchase agreements (PPAs). In addition, EGAT has a minimum gas off-take obligation under a master gas sales agreement (MGSA) with PTT PLC (PTT).

INDUSTRY ANALYSIS

For several decades, Thailand's electricity sector has been dominated by three state-owned enterprises involved in the generation, transmission and distribution of power. EGAT has dominated electricity generation and transmission, while the Metropolitan Electricity Authority (MEA) and Provincial Electricity Authority (PEA) have been responsible for distribution. The MEA and PEA are obligated to purchase the energy they need from EGAT.

- *Privatization scheme encourages private investment in the power sector*

Privatization of the power sector began in the electricity generating sector by encouraging private companies to produce and sell electricity to EGAT. The small power producer (SPP) scheme was introduced in 1992, followed by the independent power producer (IPP) scheme in

1994. Both IPPs and SPPs have 20- to 25-year power purchase agreements (PPA) with EGAT. The PPAs are well designed to mitigate the market risk of the operators, leaving mainly operating risk to be managed. Private producers under the IPP scheme are obligated to sell all electricity output to EGAT, while the private power producers under the SPP scheme can sell electricity either to EGAT or to industrial users. EGAT sold two of its power plants to Electricity Generating Company PLC (EGCO) in 1995 and 1996, and then sold the Ratchaburi power plant to RATCHGEN in 2000. EGAT is moving from being a power producer to a power purchaser.

As of December 2004, Thailand had combined installed electricity generating capacity of 26,056 MW. EGAT had 59% of the total, followed by EGAT's affiliates and IPPs (31%), SPPs (8%), and power imported from Laos (2%). EGAT's share of power generation capacity has decreased from 100% before 1995 to 82% in 1999 and to 59% by December 2004. Electricity generation from private producers sharply increased by 2,870 MW (17%) in 2000 when the first two IPPs, Tri Energy Co., Ltd. (TECO) and Independent Power (Thailand) Co., Ltd., began their commercial operations in July and August 2000 respectively. The first two units of the Ratchaburi power plant started operation in the same year.

- *Strong electricity demand may result in decreasing reserve margin*

Electricity demand in Thailand has been very strong over the past several decades. Although the economic crisis in the late 1990s caused electricity consumption to decline by 1% per annum in 1998 and 1999, electricity consumption grew approximately 7% per annum during 2000 to 2004. According to the Load Forecast Committee study completed in January 2004, under a moderate economic recovery scenario, electricity consumption will expand at an average rate of 7.53% from 2004 to 2008, 6.79% from 2009 to 2013, and 6.43% from 2014 to 2015.

Despite a recovery in electricity demand since 2000, growth has not absorbed the sharp increase in supply, resulting in an oversupply. As of December 2004, the reserve margin was 26.8%, much higher than the targeted plan of 15% to 20%. The oversupply is expected to be absorbed in 2005-2006 when demand recovers further and the reserve margin drops to an acceptable range. According to the latest Power Development Plan

(PDP-2004) made by EGAT, the reserve margin is expected to drop to 13.7% in 2006.

▪ ***EGAT retains an important role in new power industry model***

The power pool system, which aims to promote competition in electricity supply, was officially cancelled by a cabinet resolution on 9 September 2003, due partly to the unfavorable experience of utilities in many countries including the United States and the United Kingdom. The new power industry model namely the Enhanced Single Buyer or ESB system has been implemented under a cabinet resolution on 9 December 2003. The ESB model is expected to have less impact on existing PPAs than the power pool system because EGAT continues to be the single power purchaser buying from all power producers. However, the implementation of this model, its impact on existing players, and EGAT's role in the electricity generation business remain to be seen.

BUSINESS ANALYSIS

RATCHGEN's business profile is well above average. The power plant project is well-structured to mitigate its commercial risks and fuel risks through the long-term PPAs and GSAs with creditworthy counterparties. The operating risk is partially mitigated by the OMA agreement with EGAT.

▪ ***State-of-the-art power plant technology***

RATCHGEN owns two 735 MW thermal units and three 725 MW combined cycle gas turbine (CCGT) generating blocks. Thermal units 1 and 2 commenced commercial operations on 31 October 2000. The thermal units were designed and constructed by Mitsubishi Corporation (Mitsubishi), with the majority of the equipment supplied by Mitsubishi Heavy Industries Ltd. (MHI). The steam generators manufactured by MHI are super-critical, single reheat, forced circulation and balanced draft boilers. Although this type of boiler is the first in EGAT's system, it has been used in the United States for more than 30 years and in China for more than 10 years.

The CCGT blocks 1 and 2 started commercial operations on 18 April 2002, and block 3 started up on 1 November 2002. Each block combines two gas turbines and one steam turbine. The 9FA gas turbine is one of the Frame 9 series of heavy gas turbines for power generation. The newer technology class of both gas turbines and supercritical boilers requires a higher level of maintenance than existing boilers in the EGAT

system. For RATCHGEN's CCGT units, however, the technical problems that occurred during the early years of operation have mostly been resolved.

▪ ***25-year PPAs with EGAT protect RATCHGEN from market risk***

RATCHGEN has 25-year power purchase agreements (PPAs) with EGAT. Like other IPPs, the PPAs protect the company from fluctuations in power demand and supply. The basic structure of RATCHGEN's PPAs is the same as all IPPs, including EGCO's power plants. The payments consist of two parts, namely the availability payment (AP) and the energy payment (EP). The pay-if-available basis provides RATCHGEN with stable cash flow as long as the company maintains its power plant ready for EGAT's dispatch instructions. The AP is designed to recover all fixed costs associated with project financing and operations, including debt service and fixed operating and maintenance costs, as well as returns to equity holders. The full AP is subject to deductions for reduced availability (DRA), short notice (DSN) and dispatch failure (DDF). The maximum deduction percentage is identical to that of the Khanom power plant and more favorable than other IPPs. The EP is designed to cover the incremental costs for actually producing electricity. This includes fuel costs and variable operation and maintenance (VOM) costs. The plant operators are exposed to operating risks only if they cannot prepare the plant to be ready for power production or if the plants' characteristics are lower than the agreed targets. Compared with other IPPs, RATCHGEN's conditions for plant availability are more favorable. While other IPPs are required to agree to contracted performance levels prior to the commencement of construction, the performance capability level for RATCHGEN's PPAs were determined after performance tests, subsequent to the completion of construction.

▪ ***Fuel risk is partially mitigated by the gas sales agreement (GSA) and master gas sale agreement (MGSA)***

The primary fuel for the RATCHGEN power plant is natural gas from the Yadana and Yetagan gas fields. Over 25 years, RATCHGEN will require approximately 7.7 trillion cubic feet (tcf) of natural gas. Given that TECO will require 0.6 tcf of natural gas from the same source to cover its 20-year PPAs, the long-term availability of gas may be a concern.

RATCHGEN's fuel risk is partly mitigated by the gas sales agreement (GSA) between RATCHGEN and PTT, and the Master IPP Program Gas Sales Agreement between EGAT and PTT. These agreements are similar to the ones held by other IPPs, whereby EGAT has an obligation to take a minimum level of gas under the take-or-pay GSA. The price for natural gas is a full pass-through, while the quantity of natural gas consumption is also a pass-through if the RATCHGEN plant heat rate meets its agreed target. RATCHGEN has the option of rejecting substandard gas while still receiving its availability payments for a period of one year.

▪ ***Operating risk is further mitigated by an operation and maintenance agreement (OMA) with EGAT***

RATCHGEN's operating risk is further mitigated by an operation and maintenance agreement (OMA) with EGAT. Under the contract, EGAT operates and maintains the entire plant on a daily basis. The OMA covers one full major maintenance cycle projected at nine to 10 years for all units. Although RATCHGEN's OMA is less favorable than other private operators, EGAT's excellent track record in operating its power plants should significantly mitigate RATCHGEN's operating risk.

EGAT operates the CCGT blocks as the base load as they provide greater efficiency and operate at lower fuel costs than the thermal units while the thermal units with super-critical boilers are able to adjust loads faster than the CCGT. The company's performance is dependent on how well the company is able to keep its power plant available as it gets paid according to the AP, regardless of the dispatch factor.

▪ ***Operating performance in line with targets***

RATCHGEN's two thermal units started a full year of operation in 2000. The average 2004 EAF of the thermal units was high at 96.2% as a result of no planned outages. The unplanned outages for the thermal units improved significantly, falling from 2,014 hours in 2002 to 123 hours in 2003 but rising to 558 hours in 2004. However, the plant heat rate of 9,811 BTU/kWh (62.9% of dispatch factor) in 2004 underperformed its target of 9,418 BTU/kWh (88% of dispatch factor).

RATCHGEN's three combined cycle blocks were operating for their first full year in 2003. The average EAF of 91.7% for the CCGT in 2004

was significantly better than its target of 83.9%. The plant heat rate of 7,171 BTU/kWh in 2004 was improved from its heat rate of 7,307 BTU/kWh in 2003 after the cracking problems with the main steam stop and control valve (MSCV) disk were solved.

▪ ***RATCHGEN's credit strength is constrained by EGAT's creditworthiness***

EGAT is the sole power purchaser of RATCHGEN, and under the PPAs, it has exclusive authority to schedule and dispatch electricity generated from RATCHGEN through its transmission grid. Thus, RATCHGEN's credit strength is constrained by EGAT's creditworthiness. EGAT is now 100% owned by the government, however, its organization is undergoing restructuring. TRIS Rating will closely monitor the impact of EGAT's privatization on RATCHGEN's credit quality.

FINANCIAL ANALYSIS

The total project cost for the Ratchaburi power plants was Bt60,775 million. RATCHGEN's investment cost of Bt15.6 million/MW is lower than the investment cost of Khanom Electricity Generating Co., Ltd. (KEGCO) (Bt21.2 million/MW) and TECO (Bt24 million/MW). The 60%-70% debt to capitalization ratio is acceptable when compared with other power projects in Thailand, which have an average of 70% to 75% debt financing.

▪ ***Solid financial structure lowers financial risk***

RATCHGEN's project debt was 100% baht denominated loans. Therefore, there is no foreign exchange risk in the debt service charge. Although all of RATCHGEN's debt has floating rates (MLR base), there is no interest rate risk because it properly matches the MLR charges in the debt service component in the AP structure. In addition, the components in the AP and EP will be adjusted annually to reflect changes in the exchange rate and the CPI indices. This mechanism helps mitigate foreign exchange and inflation risks. One concern over the floating interest rate structure of the AP is that during a high interest rate situation, power costs from RATCHGEN may no longer be economical and this may cause the company to face contract renegotiation risk.

▪ ***Interest saving from successful negotiations with creditors***

In 2002 and 2003, RATCHGEN negotiated with its bankers to amend the loan agreement,

lowering interest rates during 1 July 2002 to 30 June 2008. The total interest savings from the first and second amendments are Bt2,735 million and Bt752 million, respectively. The second amendment included the reduction of the debt service reserve account from six months to three months.

▪ **Improved financial profile**

The company's total debt continuously fell from Bt40,894 in 2002 to Bt38,652 million in 2003, and to Bt35,765 million in 2004 as a result of principal repayment. Its debt to capitalization

ratio improved from 64.0% at the end of December 2003 to 61.6% at the end of December 2004. The company's earnings before interest, tax, depreciation and amortization (EBITDA) interest coverage ratio rose significantly to 8.3 times in 2004 from 5.8 times in 2003. However, the company's debt service coverage ratio (DSCR) without reserve accounts and after net changes in working capital was at 1.7 times in 2004, down from 3.4 times the previous year due to increases in net working capital.

Financial Statistics and Key Financial Ratios

Unit: Bt million

	Year ended 31 December			
	2004	2003	2002	2001
Electricity sales	39,714	35,528	27,493	17,423
Total operating costs	32,423	28,433	21,305	13,660
Operating profit	7,291	7,095	6,188	3,763
Interest expense	1,225	1,702	1,967	1,386
Net profit	6,260	5,505	4,675	2,707
Total debt	35,765	38,652	40,894	18,263
Net income from operations	6,260	5,505	4,675	2,707
Funds from operations (FFO)	8,905	8,034	6,694	4,520
Pretax interest coverage (times)	6.1	4.3	3.5	3.1
Total debt/capitalization (%)	61.6	64.0	65.1	49.2
FFO/total debt (%)	24.9	20.8	16.4	24.8
Earnings before interest, tax, depre. and amort. (EBITDA)	8.3	5.8	4.5	4.4
interest coverage (times)				
Cash available for debt service	7,137	13,336	6,638	5,822
Total debt service	4,112	3,944	3,298	1,598
Total debt service coverage ratio (DSCR) (times)	1.7	3.4	2.0	3.6

Plant Performance Statistics

	Unit	Target 2004	Actual 2004	Actual 2003	Actual 2002
Thermal Units					
Net electrical output	GWh	10,626	7,669	6,512	7,527
Dispatch factor	%	88.0	62.9	62.5	68.5
EAF* avg. 12 months	%	95.5	96.2	86.7	87.6
Plant heat rate	BTU/kWh	9,418	9,811	9,952	9,796
Dependable capacity	MW	1,440	1,440	1,440	1,440
Planned outage	Hours	0	0	2,171	0
Forced outage	Hours		273	123	1,503
Maintenance outage	Hours	796	285	0	511
CCGT Units					
Net electrical output	GWh	14,041	13,809	12,041	6,289
Dispatch factor	%	88.0	80.7	75.0	74.0
EAF avg. 12 months	%	83.9	91.7	85.7	75.8
Plant heat rate	BTU/kWh	7,132	7,172	7,307	7,281
Dependable capacity	MW	2,011	2,011	2,130	2,130
Planned outage	Hours	1,428	1,246	1,836	1,454
Forced outage	Hours		243	167	123
Maintenance outage	Hours	1,697	68	191	826

* EAF = Equivalent Availability Factor

Rating Symbols and Definitions

TRIS Rating uses letter rating symbols for announcing credit rating results for long-term debt instruments. Ratings range from AAA, the highest rating, to D, the lowest rating. The definitions are:

- AAA** the highest rating with smallest degree of credit risk, extremely strong capacity to pay interest and repay principal on time, and unlikely to be affected by adverse changes in business, economic or other external conditions.
- AA** the debt instrument with very low degree of credit risk, very strong capacity to pay interest and repay principal on time, but somewhat more susceptible to the adverse changes in business, economic, or other external conditions than the AAA rated issues.
- A** the debt instrument with low credit risk, strong capacity to pay interest and repay principal on time, but more susceptible to the adverse changes in business, economic or other external conditions than debt in higher rated categories.
- BBB** the debt instrument with moderate credit risk, moderate capacity to pay interest and repay principal on time, but more vulnerable to adverse changes in business, economic or other external conditions which is likely to weaken the capacity to pay interest and repay principal than debt in higher rated categories.
- BB** the debt instrument with high credit risk, less than moderate capacity to pay interest and repay principal on time, and can be significantly affected by adverse changes in business, economic or other external conditions with lower creditors' protection than provided by higher ratings.
- B** the debt instrument with very high credit risk, low capacity to pay interest and repay principal on time. Adverse changes in business, economic or other external conditions would lead to lack of ability or willingness to pay interest and repay principal.
- C** the debt instrument with highest risk of default than debt in higher rated categories, significant inability to pay interest and repay principal on time and dependent upon favourable business, economic or other external conditions in order to meet its obligations.
- D** the debt instrument in which payment is in default.

The ratings from AA to C may be modified by the addition of a plus (+) or minus (-) sign to show relative standing within a rating category.

The ratings assigned by TRIS Rating are local currency ratings; they reflect the Thai issuers' ability to service their debt obligations, excluding the risk of convertibility of the Thai baht payments into foreign currencies. Therefore, the ratings are not capped by the (foreign currency) sovereign ceiling of Thailand, which are assigned by international credit rating agencies.

TRIS Rating also assigns "Rating Outlooks" to reflect the potential direction of a company's credit ratings over the medium to long term. In formulating these outlooks, TRIS Rating will consider the prospects for the rated company's industry, as well as business conditions that might have an impact on its fundamental creditworthiness. Rating outlooks will be announced in conjunction with company credit ratings, and new outlooks will be generated as circumstances warrant. In most cases, outlook assigned to a company will apply to all debt obligations issued by the company.

The categories for "Rating Outlooks" are as follows:

- Positive** the rating may be raised
- Stable** the rating is not likely to be changed
- Negative** the rating may be lowered
- Developing** the rating may be raised, lowered or remain unchanged

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