



3 Thailand

Lam Ta Khong Pumped Storage Project

Helping to strengthen and stabilize the electric power supply in the Bangkok metropolitan area

Loan Amount / Disbursed Amount 18.242 billion yen / 9.739 billion yen
Loan Agreement September 1994
Terms & Conditions 3.0% interest rate, 25 year repayment period (7 year grace period), General untied
Final Disbursement Date January 2002
Executing Agency Electricity Generating Authority of Thailand (<http://www.egat.co.th/english>)



Project Objectives

The objective of this project was to construct a pure pumped storage power plant and to strengthen Thailand's ability to cope with peak power demand by using the existing Lam Ta Khong Reservoir as the lower pond and constructing an upper pond with an effective water storage volume of 9.9 million m³, in addition to an underground power plant (250 MW x 2), steel conduits, tailrace channel, etc., in Nakhon Ratchasima Province in northeastern Thailand, and thereby contribute to the stability of the electric power supply.

Effectiveness and Impact

Rating **a**

An underground power plant that uses an upper and lower pond and related facilities were built through the implementation of this project. The total annual power generated by Units 1 and 2 in 2005 reached 484 GW, which is 93% of the target level (520 GW), almost as initially planned.

As a result, the project is perceived to have helped respond to peak power demand and led to the stable supply of high-quality electric power. Nationwide maximum output and energy production increased nearly 1.3 times between 2001 and 2005. Consequently, this project is judged to have helped stabilize power supply and effectively meet the increasing energy demand. Therefore, this project has largely achieved its objectives, and effectiveness is

highly satisfactory.

Relevance

Rating **a**

This project has been highly relevant with Thailand's national policies both at the time of the appraisal and at the time of the ex-post evaluation. The project played an important role in improving the reliability of power supply in northeastern Thailand and stabilizing electric power quality.

Efficiency

Rating **b**

The project period greatly exceeded the planned period (206% of planned period) although the project costs were kept relatively within the planned amounts; therefore the evaluation for efficiency is moderate.

Sustainability

Rating **b**

According to the executing agency, pumped storage generation is not possible when the water volume of the lower pond is less than 30 million m³ (however, there is no effect on the function of pumped storage generation). Though some problems have been observed in terms of inflow volume which is declining as development of the upper reaches of the Lam Ta Khong River progresses, sustainability of this project is moderate.

Conclusion, Lessons Learned, Recommendation

In light of the above, this project is evaluated to be satisfactory. It is advisable that the executing agency collaborate with related bodies in taking steps to ensure that the water level in the lower pond does not drop to a level that the pumped storage power generation is hindered.



Interviews with beneficiaries.

This project helped respond to the peak power demand and led to the stable supply of high-quality electric power, and so it is considered to have made a fundamental contribution to stabilizing the nationwide electric power supply and meeting the growing demand for electric power.

Third-Party Opinion

This project contributed significantly to regional economic growth and employment by meeting the demand for power. Also, the management system is in top condition, thanks in part to the sufficient training provided by the executing agency to the facility staff.

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