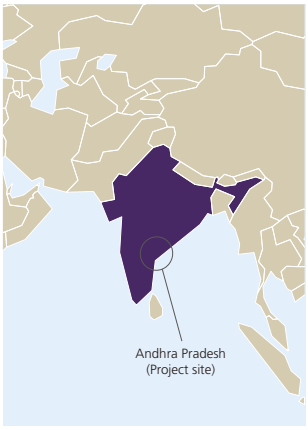
External Evaluator: Hajime Sonoda

Overall Rating **B**

A Foundation for Sustained Growth



35 India

Srisailam Left Bank Power Station Project (1)–(3)

Contributing to improve the living standards of local people by providing a stable power supply

Loan Amount/Disbursed Amount	63.167 billion yen/62.745 billion yen
Loan Agreement	February 1988-December 1997
Terms & Conditions	Interest rate 2.3–2.75%, Repayment period 30 year (grace period 10 years), General untied Partial untied (part of (2))
Final Disbursement Date	January 1999–February 2003
Executing Agency	Andhra Pradesh Power Generation Corporation, Ltd. (http://www.apgenco.com/)

* Ex-post evaluation of this project was conducted jointly with executing agency. In order to strengthen the evaluation capacity of electric power sector in India, Mr. K Rmanathan and Mr. Shahid Hasan (The Energy Resource Institute) participated in as technical assistance experts.

Project Objectives

This project's objective was to meet the increasing demand for electric power (particularly during peak hours) in AP by constructing a pumped-up power plant in AP that would utilize the Srisailam Reservoir as its upper reservoir and the Nagarjugasagar Reservoir as its lower reservoir, effectively utilizing the river flow rate, and thereby contribute to the industrial promotion and improvement of living standards of local people by electrification in AP.

Effectiveness & Impact

Rating **a**

Power generated by the power plant constructed through this project was 1,412GWh in FY2004. It is equivalent to about 3% of the power supplied in Andhra Pradesh that fiscal year, and greatly exceeding the planned output of 751GWh. In FY2003, the plant provided a maximum power supply of 721MW at peak hours which was almost equal to 11% of AP's power supply output during peak demand hours. Therefore, the number of beneficiaries of the project during that year can be said to be equivalent to about 10% of the population, which is 8 million people (equal to about the population of Kanagawa Prefecture, Japan). Stabilization of power supply through this project made business activities efficient. It thus contributed to the improvement of the investment climate and the promotion of industry. Therefore, this project has largely achieved its objectives, and effectiveness is highly satisfactory.

Relevance

Rating **a**

The project has been highly relevant with India's national policies both at the time of the appraisal and at the time of the ex-post evaluation. Both India's Seventh Five-Year Plan (at the time of the appraisal) and its Tenth Five-year Plan (at the time of ex-post evaluation) emphasized the importance of development of the power sector for sound domestic economy growth.

Efficiency

Rating **c**

Both project period and project cost exceeded the plan (182% and 130% compared to the plan); therefore the evaluation for efficiency is low. One of the main reasons for the delay was the fact that far greater than expected seepage and weak foundations required greater underground construction. The high project costs are attributed to a rise in power generation equipment prices.

Sustainability

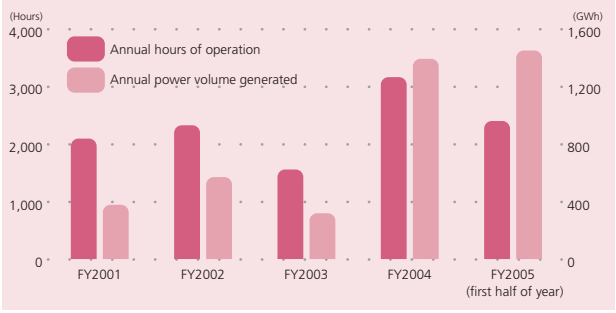
Rating **a**

No major problem has been observed for capacity of the executing agency nor the operation nor its maintenance system, therefore, sustainability of this project is high. Andhra Pradesh Power Generation Corporation, Ltd., the executing agency, operates the power plant with the highest hydroelectric power capacity in India, and its technical capacity has no problem.

Conclusion, Lessons Learned, Recommendation

In light of the above, this project is evaluated to be satisfactory. One of the lessons learned is that it would have been needed to grasp the risk factors that could affect project effectiveness and establish countermeasures at the project planning stage. It is hoped that the weir that was under construction at the time of the ex-post evaluation will be completed soon to enable stable pumped hydroelectric power.

Operation and Power Generation of the Srisailam Left Bank Reservoir Water Power Plant



Third-Party Opinion

In Andhra Pradesh, just as in other states, strengthening power generation at peak hours and improving power shortages are major concerns. Accordingly, this project was of high relevance. Considering that project efficiency was low, as a recommendation for the future, detailed studies should be conducted at the project planning stage.

Name of specialist: Mr. Rajendra Singh (consultant)
Masters in mechanical engineering from Varanasi Hindu University. After stints as the representative of a thermal power generation corporation and a CEA in charge of hydroelectric power generation, now works as a consultant. Specializes in electric power and energy.