

33 India Umiam Hydro Power Station Renovation Project

Contributing to enhanced electricity supply in line with Meghalaya's plans for industrialization by renovating hydropower stations in northeastern India, an area rich in hydropower resource potential.

Loan Amount / Disbursed Amount 1.7 billion yen / 1.692 billion yen
Loan Agreement February 1997
Terms & Conditions 2.3% interest, 30 year repayment period (10 year grace period), General untied
Final Disbursement Date June 2004
Executing Agency Meghalaya State Electricity Board (<http://meseb.gov.in/>)

Project Objectives

The objectives of this project were to increase power and energy production as well as to improve power generation efficiency in the state of Meghalaya, through the renovation and modernization of Umiam Power Station Stage 1, in order to contribute to its further economic growth and to improvement of living conditions.

Effectiveness and Impact

Rating **a**

The project plan to renovate Umiam Hydro Electric Power Station Stage 1 (maximum output 94 MW 4-units), which began operation in 1965, and was expected to result in annual net electric energy production of 143 GWh, a plant load factor of 45.3%, and maximum output of 36 MW. From 2003 to 2005, maximum output proceeded as planned but both the annual net electric energy production (99 –140 GWh) and plant load factor (31.4% - 44.2%) fell slightly below target. The main reason for this was a reduction in the water level of the reservoir due to significantly reduced rainfalls. Despite this situation, however, the state's industrialization policy introduced in 1997 led to a 6.4-fold increase in the purchase of electricity by the industrial sector since 1998, and consumption per capita also rose 1.5-fold. Umiam Power Station Stage 1 accounts for 20% of the total electricity generation capacity of the Meghalaya State Electricity Board, and therefore the project can be recognized as making a notable contribution to the supply of electricity in Meghalaya. Therefore, the project has largely achieved its objectives and effectiveness is highly satisfactory.

Relevance

Rating **a**

This project was highly relevant with India's national policies both at the time of appraisal and at the time of ex-post evaluation. The

Central Electricity Board, under the National 11th Five-Year Plan (2007 – 2012), plans to cope with the future shortfall by rehabilitating and modernizing existing hydroelectric power stations, and therefore it is of considerable importance to the electric power sector.

Efficiency

Rating **b**

Both the project period and project costs slightly exceeded their targets (124% and 102% of planned respectively); therefore, the evaluation for efficiency is moderate. The main reason for the delay was the approval process required for modifications in output and the changes in procurement methods. The increase in project costs was due to inflation.

Sustainability

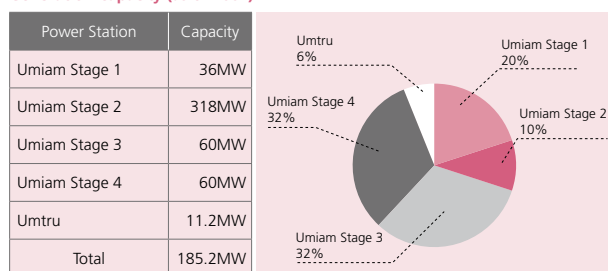
Rating **b**

While some areas for improvement such as the executive agency's technical capacity were observed, the agency had already taken measures for strengthening its human resource development system, and financial sustainability is secured to some extent. Therefore sustainability of this project is moderate.

Conclusion, Lessons Learned, Recommendation

In light of the above, this project is evaluated to be satisfactory. A lesson learned from the project is that timely advice should be given to the executing agency to undertake preventive maintenance including the replacement of major machinery and parts. For further project effects, overhauling, thorough technical assessment, recording of maintenance data, and a review of the personnel allocation are desirable.

The Project's Share in the Meghalaya State Electricity Board Total Power Generation Capacity (as of 2007)



Third-Party Opinion

This project made a significant contribution by accommodating the increase in demand for electricity accompanying the state's industrialization policy. It can also be regarded as having a positive impact on the living standards of the local people.

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