



# Multipurpose Dam Hydroelectric Power Plant Project

Contributing to easing the tight supply-demand balance of electricity and alleviating dependency on oil by efficiently utilizing water resources for hydroelectric power generation

**[External Evaluator]**

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**Rating**

Effectiveness, Impact	a	Overall Rating <b>A</b>
Relevance	a	
Efficiency	b	
Sustainability	a	

**Project Objectives**

To meet rapidly growing electricity demand in each service area, by constructing hydroelectric power plants of 6.2MW, 28MW and 17.2MW at PLN Java Bali System, Wilayah IV service area (Lampung Province), and Wilayah VIII service area (South Sulawesi Province) respectively, thereby contributing to the target areas' economic development and improvement of the peoples' standard of living.

**Outline of the Loan Agreement**

- Loan amount / Disbursed amount: 6,291 million yen / 4,044 million yen
- Loan agreement: December 1996
- Terms and conditions: 2.7% interest rate (2.3% for consulting services); 30-year repayment period (including a 10-year grace period); general untied
- Final disbursement date: March 2007
- Executing agency: Electricity Company owned by the Indonesian State (PT. PLN (Persero))
- Website URL: <http://www.pln.co.id/>

**Effects of Project Implementation (Effectiveness, Impact)**

This project constructed hydroelectric power plants attached to the three multipurpose dams, namely Wonorejo (in East Java Province), Batutegei (in Lampung Province), and Bili-Bili (in South Sulawesi Province). Though electricity generation is subordinate, and priority is placed on other uses including irrigation and water supply, the plants are generating electricity almost as planned and are contributing to ease the lack of electricity in each service area. Results of the beneficiary survey conducted on the Wonorejo hydroelectric power plant supplying electricity to East Java Province show that only 15% of households and 7% of business entities had evaluated the quality of power supply "Excellent" before the project; however, both ratios increased to 89% and 85% respectively after the project. In addition, the ratio answering that power failure "scarcely happened" were 28% and 57% respectively before the project, but those rates also increased after the project to 83% and 100% respectively. Therefore, the project has largely achieved its objectives, and its effectiveness is high.

**Relevance**

This project has been highly relevant with Indonesia's national policies and development needs at the times of both appraisal and ex-post evaluation. Development plans at the times of appraisal and ex-post evaluation placed emphasis on the improvement of power supply reliability and hydroelectric power development aiming for alleviating the oil dependency, and development of alternative energy including hydropower is progressing throughout Indonesia.

**Efficiency**

Though project cost was lower than planned, project period was much longer than planned (153% against the plan), therefore, the evaluation for efficiency is moderate. The main reasons for delay in project implementation included the economic turmoil due to the Asian Currency Crisis in 1997, subsequent delay in procedures due to reforms in the administrative structure, laws and regulations, and additional procurement of spare parts to cope with water pollution.

**Sustainability**

No major problem has been observed in the technical capacity of 3 hydroelectric power plants nor their operation and maintenance system, taking account of allocation of engineers who are mostly well educated or experienced in other existing hydroelectric power plants and systematic trainings for staff at PLN's training center specialized in hydroelectric power generation in Padang, West Sumatra Province. There is no problem observed in terms of financial capacity, either. Therefore, sustainability of this project is high.

**Conclusion, Lessons Learned and Recommendations**

In light of the above, this project is evaluated to be highly satisfactory. Recommendations would be to improve inter-agency management arrangement between the Ministry of Public Works (the executing agency of the respective multi-purpose dam projects), and PLN (the executing agency of the hydroelectric power plants), and also internal management practices among the different institutions within PLN.



Bili-Bili Power Plant

\*All ex-post evaluation reports including this can be referred to in JICA's website, "Evaluations"→"Ex-post Evaluation (ODA Loan)" ([URL:http://www.jica.go.jp/english/operations/evaluation/oda\\_loan/post/](http://www.jica.go.jp/english/operations/evaluation/oda_loan/post/))