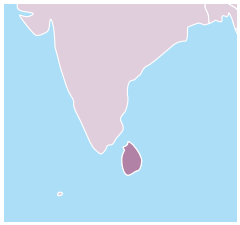
Asia Sri Lanka

Kukule Ganga Hydroelectric Power Project



Contributing to industrial development and a higher electrification rate by building a hydroelectric power plant

【External evaluator】
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Rating

Effectiveness, Impact	a	Overall rating A
Relevance	a	
Efficiency	b	
Sustainability	a	

Project Objectives

To provide stable supply of electricity in Sri Lanka by constructing a run-of-river type hydroelectric power plant (35 MW × 2 units) equipped with a regulation pond in the Kukule Ganga (River) – a tributary of the Kalu Ganga (River) – which is a large rainfall zone, thereby contributing to the alleviation of the tight supply-demand situation for electricity and to the socio-economic development of Sri Lanka.

Outline of the Loan Agreement

- Loan amount / disbursed amount: 21,227 million yen / 19,415 million yen
- Loan agreement: July 1994
- Terms and conditions: 2.6% interest rate; 30-year repayment period (including a 10-year grace period); general untied
- Final disbursement date: June 2005
- Executing agency: Ceylon Electricity Board (CEB)
- Website URL: http://www.ceb.lk/

Effects of Project Implementation (Effectiveness, Impact)

The average power generation of this plant between 2004 and 2007 reached 306 GWh (97% of the planned value). In 2006, the plant accounted for about 4.0% of the peak power supply and about 3.4% of the annual power supply, suggesting that the project made a limited and indirect contribution to industrial development and a higher electrification rate.

It should be noted that the project had a favorable impact on the lives of local residents when the construction of access roads in the vicinity of the plant provided easy access to the otherwise isolated areas. Meanwhile, delays were observed in compensation to some affected people.

Therefore, this project has largely achieved its objectives and its effectiveness is high.

Relevance

This project has been highly relevant with Sri Lanka's national policies and development needs at the times of both appraisal and ex-post evaluation. In addition, there is great demand for the capacity of low-cost hydroelectric generation since a demand for power is increasing continuously and the cost of the thermal power generation is rising.

Efficiency

This project constructed a plant with a planned generation capacity within the planned cost. However, the project period was much longer than planned (44 months behind schedule) due to delays in procurement and revisions. Therefore, the evaluation for efficiency is moderate.

Sustainability

No major problems have been observed in the capacity of the executing agency nor its operation and maintenance (O&M) system; therefore, sustainability of this project is high. With an adequate O&M budget, the plant is largely operated and maintained in an appropriate manner.

Conclusion, Lessons Learned, Recommendations

In light of the above, this project is evaluated to be highly satisfactory. Three major lessons have been learned from the project. First, it is important to exert every effort to make sure the progress of a power generating project designed to deal with the looming gap in the demand and supply of power. Second, access roads may bring socioeconomic benefits to communities in the vicinity of the power plant. Third, both the executing agency and donors need to monitor the process and progress of compensation carefully and the content of compensation needs to be examined to accommodate the socio-economic conditions of the people to be compensated. The CEB should take the initiative in starting a constructive dialogue so that an agreement on the outstanding compensation issue can be reached with all the people concerned. This evaluator recommends providing advanced training for engineers engaged in this project as well as provides training on the design and operation of the SCADA system.

Operational performance of the Kukule Ganga Hydroelectric Power Plant

	2003 Oct.-Dec.	2004	2005	2006	2007
Maximum output (MW)	80	80	80	75	75
Annual power generation (GWh)	79	318	317	319	270
Annual operating hours (2 units total: hours)	2,098	8,865	8,797	9,003	7,665
Unplanned outage hours (2 units total: hours)	125	141	513	435	70

Note: The planned annual power generation was 317 GWh at the time of appraisal.
Source: Questionnaire results from CEB