

Findings

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Good Practice
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Ethiopia: The Energy II project

The project's objectives were to (i) increase the efficiency and sustainability of Ethiopia's power sector and to increase electricity use for economic growth and improved quality of life; and (ii) improve the utilization efficiency of rural renewable energy. An IDA credit of US\$ 200 million over the years 1998-2005 supported these objectives. The project had 3 components: (i) the Gilgel Gibe Hydroelectric plant; (ii) Rural energy; and (iii) Institutional Development. An Emergency Recovery Project was included in June 2004 for emergency equipment and materials for war-affected areas and in particular to replace stranded goods and equipment at Assab Port.

Impact on the ground

- The construction of Gilgel Gibe I (3x61.3 Mega Watts) commissioned in April 2004, injected about 184 MW of dependable capacity and about 722 GWh (Giga Watts per hour) in 2005 to the interconnected system, improving reliability and quality of supply. Ethiopia's estimated hydropower potential is about 30,000 MW – over the last 7 years, installed capacity reached 790 MW. In addition, since 1997, the number of customers rose to 950,000, an increase of 45% over the 1997 level. Also, since 1997, 2024km (31% of total) was added to the transmission network and 12,650 km (55% of total) was added to the LV transmission network.
- The Gilgel Gibe handover was seamless as transitional arrangements were put in place during the implementation and takeover of the plant. Staff from the Ethiopian Electric Power Corporation (EEPCo) were identified early and trained either locally or at the manufacturer's works for the various tasks required to operate and maintain the plant.
- The project involved the involuntary resettling of 706 households (about 5,000 persons)| the loss of 300 ha of riparian forest for wildlife and the resulting biodiversity loss in the Oromia Region; altered downstream flow of 16 km of the Gilgel Gibe river; and an increased habitat for water-borne disease vectors. The resettlement was funded by

the government and was completed 2 years ahead of impounding, and 4 years ahead of the completion of civil works.

- Each one of the Project-Affected People (PAP) was provided with financial compensation and were re-settled in areas which had the same characteristics – language, religion, etc. – as their own.
- Cultural artifacts were found at over 20 sites and the most significant ones were not inundated. An archaeological report was commissioned – referred to as the Gilgel Gibe Archaeological project – which, among other things, pointed out that the delay in including a cultural heritage management component created multiple logistical, financial, administrative and political problems.
- The Rural Energy component had 2 sub-projects – the Woody Biomass Inventory and Strategic Planning project (WBISSP), completed in June 2005 and the Rural Energy Development Project (REDP), completed in January 2005. The WBISSP produced 10 separate strategic plans for the sustainable use and management of each region’s woody biomass resources; and developed a comprehensive non-spatial (reports, tables and models) and spatial (GIS and remote sensing) database. The REDP produced reports with policy recommendations and strategies aimed at enhancing rural biomass energy supply and the efficient use of biomass fuels.
- After being reorganized as part of this project, EEPCo has made extensive use of modern organizational change techniques including business process re-engineering, benchmarking against international best practice, gap analysis, and performance management systems.
- Decentralization of EEPCo’s operation and management structure has been very significant – the corporation was divided into 8 regions with 10-15 districts in each region. Each district is responsible for supply and maintenance and in dealing with commercial matters in its jurisdiction including new connections and revenue collection. As a result, the receivables as day’s sales have been reduced from 105 in 1997 to 40 in 2005. Further, the waiting time for new connections has been reduced from more than 90 days to about 14 days.
- The corporation’s Management Development Program (MDP) upgraded the skills and knowledge base of about 300 managers in technical know-how and on management systems and processes.
- The MDP also provided institutional benefits which contributed significantly to the corporation’s restructuring process. This included: (i) a fundamental review of its corporate mission, vision and culture; (ii) review of core activities;(iii) consideration of its operation in a deregulated environment;(iv) the possibility of privatizing some of its core and non-core activities/functions; (v) possibly outsourcing a number of non-core activities;(vi) implementing a performance management system;(vi) moving tom flatter, less hierarchical management structures;(vii) decentralizing and giving each region substantial autonomy; and (viii) moving from being a monopoly to an efficient public enterprise.
- The consultancy service to define regulatory instruments has resulted in the specification of methodologies for utility regulation as well as draft directives for both economic and technical regulation. EEPCo has begun using some instruments such as electricity tariff regulation procedures and regulatory financial models, inspection guidelines, model guarantee agreements for bulk power procurement and demand side management guidelines.

- With support from the Nordic Fund, the corporation has replaced the existing centralized accounting and billing systems with decentralized and computerized systems. Extensive training has been provided to some 1,145 staff in billing and accounting systems as well as in Oracle and database administration and information and communication technology.

Lessons learned

- The scale of such projects represents a substantial financial commitment and entails several types of risks, e.g. geological, market, etc. for the incumbent utility, which may end up weakening the overall sustainability of the power sector. Consequently, the current business model of having solely the local utility as the implementing agency may not provide the necessary hydro capacity to meet the defined needs. Other types of institutional arrangements would need to be examined, including the private sector and multi-country regional efforts.
- Establishing an environmental management unit is a critical issue, as it affects not merely the project, but the work of the organization over the long term. Environmental issues thus stand a better chance of being institutionalized.
- With proper planning and implementation, it is possible to develop strong resettlement efforts, even in countries with a modest track record.
- It is vital to be pro-active during project preparation in terms of cultural heritage when working on hydropower projects located in areas that are potential sites for artifacts.
- The potential for introducing agricultural residue-based charcoal to supplement or displace the wood charcoal presently supplied and consumed in urban areas is significant, but such an investment would be financially viable only in large-scale operations.

This Infobrief was excerpted from Implementation Completion Report no. 35573. For more information, e-mail Philippe Benoit: pbenoit@worldbank.org

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