ICR Review

Operations Evaluation Department

Report Number : ICRR11609

1. Project Data:		Date Posted : 12/01/2003		
PROJ ID : P002756			Appraisal	Actual
Project Name : Tz-power Vi		Project Costs (US$M)	383.70	391.8
Country : Tanzania		Loan/Credit (US$M)	200.00	195.55
Sector(s):	Board: EMT - Power (91%), Oil and gas (7%), Central government administration (2%)	Cofinancing (US$M)	151.50	175.82
L/C Number : C2489				
		Board Approval (FY)		93
Partners involved :	NORAD, SIDA, KfW, EIB, NDF, DfID	Closing Date	06/30/2000	06/30/2001

Prepared by :	Reviewed by :	Group Manager :	Group :	
Alvaro J. Covarrubias	Roy Gilbert	Alain A. Barbu	OEDST	

2. Project Objectives and Components

a. Objectives

The objectives of the project were : (i) meeting the growing demand for electricity at least cost through the construction of the Lower Kihansi hydroelectric scheme; (ii) helping the Government restructure the power sector to promote efficiency and private investment; (iii) continuing the work already started on improving energy efficiency by reducing system losses, improving service quality, and supporting demand-side management initiatives; (iv) providing training and technology to improve skills and management effectiveness of staff in sector institutions; and (v) promoting the development and operation of gas-fueled generation by private investors. However, in 1994 the project objectives were revised to support the emergency needs of the power system in 1995 requiring filling in the gap in hydroelectric generation caused by extremely dry hydrology. The restructuring diverted resources from distribution investment and gas development to urgent generation.

b. Components

The project, after restructuring, had 18 components to be implemented by three institutions: Tanzania Electric Supply Company (TANESCO), Zanzibar State Fuel and Power Corporation (ZSFPC) and the Ministry of Water, Energy and Minerals (MWEM) as indicated below.

By TANESCO:

Construction of the 180 MW first stage of the Lower Kihansi hydroelectric project (US$270.2 million);
Construction of theof a 70 MW gas turbine Emergency Power Plant (US$41.9 million)
Expansion, reinforcement, and loss reduction in the distribution system of major load centers(US$15.0 million) ;
Provision of vehicles, tools, and meters to improve distribution and commercial operations(US$5.0 million) ;
Completion of the rehabilitation of the Kidatu hydroelectric plant (US$16.4 million.);
Institutional reform and studies (US$24.3 million) comprising: management support and training; provision of computerized management information systems; demand side management activities; audits; and upgrading of the dispatch center equipment and communication systems.

By ZSFPC:

A study of the operation of ZSFPC to define feasible options for its future structure, the provision of a commercial manager for ZSFPC to oversee commercial operations until the utility is restructured, and the provision of prepayment meters and associated materials to help improve collections (US$2.5 million).

By MWEM:

A study of the structure of the power sector and its associated regulatory framework in Tanzania to define options for restructuring to improve efficiency, and to explore ways of introducing private sector financing and managing (US$0.5 million);
Provision of consulting services to help promote private sector financing and operation of thermal generation using gas from Songo Songo (US$6.1 million);
Provision of equipment to help develop generation from using the Mnazi bay gas field in a joint arrangement with the private sector (US$9.0 million); and

Training and office technology for energy staff of the ministry (US$0.9 million)

c. Comments on Project Cost, Financing and Dates

Final project cost was only 2 percent higher than appraisal estimate.The Bank credit financed 37 percent of civil works of the Lower Kihansi hydroelectric plant, 100 percent of the 70 MW emergency gas turbine plant, 60 percent of the distribution extension and rehabilitation, 34 percent of the rehabilitation of the Kidatu hydroelectric plant, 100 percent of the Songo Songo gas development studies, 65 percent of consultant services for institutional reform and studies, and 100 percent of vehicles, tools and software. The co-financiers financed 53 percent of the turbines, generators, auxiliary equipment and instrumentation and control for the Lower Kihansi hydroelectric plant and 38 percent of equipment and vehicles The balance (US$20.43 million equivalent) corresponds to Government and TANESCO financing of part of the civil works of the Lower Kihansi hydroelectric plant and transmission and distribution works. At closing, total of US$4.45 million from the Bank credit was canceled after a one year extension.

3. Achievement of Relevant Objectives:

Objective (i): The addition of hydroeletricy to the TANESCO power system from the lower Kihansi hydroelctric plant and the rehabilitatoon of ther Kidatu plant are helping to meet growing demand for electricity. However, in 1995 an emergency thermal power was built to cope with low hydroelectric generation caused by dry hydrology.
Objective (ii): Reorganization of TANESCO and the formulation of sector objectives are the only significant achievement made by the Govemnent.
Objectuve (iii): Eight years after project started, no improvement was achieved in energy efficiency, system losses reduction, quality of service quality, and demand-side management. Cost of electricity is among the highest in the Africa Region, distribution losses have not been reduced and improvement in the electricity metering system is still in early stages of implementation.
Objective (iv): Training on technology and management provided to staff of sector institutions did not bear fruits. In spite of the restructuring and training efforts and the investment made in equipment and computerized office technology, and accounting and billing systems, TANESCO management has been poor during project implementation, continues to be overstaffed, and billing and collection have marginally improved while accounts receivable remain high
Objective (v): Development and operation of gas-fueled generation by private investors did not materialize..
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4. Significant Outcomes/Impacts:

- The construction of the Lower Kihansi hydroelectricity plant and the rehabilitation of the Kidatu hydroelectric station are the main outputs of the project. Their hydrolectric production is helping to meet the growing demand for electricity in Tanzania.
- The pilot prepayment metering system in Tanzania was a successful innovation for utilities in Africa.

5. Significant Shortcomings (including non-compliance with safeguard policies):

- Reform of the power sector to introduce significant private perticipation was not achieved.
- The Government did not succed in attracting private sector to develop the Songo Songo gas field.
- TANESCO's technical and commercial efficiency, finances and management were not improved.
- The Government has not ensured the payment for electricity by government's entities or compensation for socially important but financially unviable rural electrification programs imposed on TANESCO.
- The water rights for the lower Kihansi plant is still an unresolved issue.
- The operation of the emergency gas turbine power plant is unsustainable because TANESCO has not taken measures to ensure resources to buy the fuel for its prolonged operation.
- Electricity sales lower than appraisal estimate has yielded a project ex-post IERR of 10.7 percent which is lower than the ex-ante estimate in the range 12.9 - 15.0 percent.

6. Ratings:	ICR	OED Review	Reason for Disagreement /Comments
Outcome:	Unsatisfactory	Unsatisfactory	
Institutional Dev .:	Modest	Modest	
Sustainability :	Unlikely	Unlikely	
Bank Performance :	Unsatisfactory	Unsatisfactory	
Borrower Perf .:	Unsatisfactory	Unsatisfactory	
Quality of ICR :		Unsatisfactory	

NOTE: ICR rating values flagged with ' * ' don't comply with OP/BP 13.55, but are listed for completeness.

7. Lessons of Broad Applicability:

Among the lessons presented in the ICR, the following are highlighted:
(1) Prepayment metering can be an effective technical solution to electricity billing and collection when configured in line with tariff structure and appropriately designed to avoid fraud. The prepayment metering system tested in Tanzania was a successful innovation for utilities in Africa.
(2) Institutional develppment of a power utility during its transition to privatization needs to be accompanied by new mangement

recruited from outside.
(3) A Bank environmental specialist should be an integral member of the supervision team for all Category A projects, and the supervision missions should include the incentives and resources to encourage such teams. In this project, the lack of an environmental specialist in supervision missions delayed until 2000 the Bank response to introduce and finance an environmental mitigation plan.
(4) Failure to define water rights at an early stage of develpment of a hyroelectric project creates water use and conservation, and environmental problems difficult to solve during project construction, and introducing implementation delays.
(5) Privatization objectives should be normally pursued through adjustment lending supported by a technical assistance operation. To introduce privatization in a lending operation which includes a large lumped investment did not work in this project. Privatization requires to be digested in a politically and socially manner within a flexible timeframe which is not necessarily congruent with the long timeframe required to materialize the lump investment required by a hydrolectric plant.

8. Assessment Recommended? ● Yes ○ No

Why? **Yes,** in a cluster with other power sector projects in Tanzania to: (i) update theassessment of unresolved issues such as environmental and water rights issues; (iii) draw lessons from the development of the power sector privatization in a Sub-Saharan country.

9. Comments on Quality of ICR:

The ICR is rated unsatisfactory overall because of a number of deficiencies: (i) it does not address explicitly the achievement of the project's five objectives; (ii) includes a discussion of " tariff policy objectives", "physical objectives" and " financial objectives" (pages 14 and 15) that are not part of project's objective statement; (iii) fails to report succintly the values of performance indicators related to objectives (Annex 1); (iv) is unnecesssarily wordy, at 41 pages and was issued one year after credit closing date – past the required 6 months. Moreover the ICR has serious inconsistencies: (i) last paragraph of section 6.2 gives arguments for a Likely sustainable project, while point 6.1 gives arguments for Unlikely sustainanility; and (ii) the section on Institutional Development Objectives indicates that TANESCO is overstaffed, while the previous paragraph indicates that the ratio 59 customers per employee exceeds the target of 41 customers per employee (as well as the 26 customers per employee at time of project appraisal).