



1. Project Data:		Date Posted : 05/21/2001	
PROJ ID: P003309		Appraisal	Actual
Project Name: Power III	Project Costs (US\$M)	174.2	134.2
Country: Zimbabwe	Loan/Credit (US\$M)	90.0	88.8
Sector(s): Board: EMT - Power (92%), Central government administration (8%)	Cofinancing (US\$M)	0	0
L/C Number: L3696			
	Board Approval (FY)		94
Partners involved :	Closing Date	12/31/1997	12/31/1999

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2. Project Objectives and Components

a. Objectives

The project had five objectives :

1. Minimize the shortage of power supply by improving the reliability and the performance of the Hwange Power Plant (HPP);
2. Increase the efficiency of the distribution system through loss reduction and demand management measures, thereby satisfying unmet demand;
3. Better manage power shortages through discriminative load shedding measures;
4. Facilitate the commercialization of the Zimbabwe Electricity Supply Authority (ZESA); and
5. Help ZESA build sustainable technical capability to promote more efficient operation and planning of the power system.

b. Components

The project had the following six components :

1. Reinforce the distribution network by: (a) the installation of about 50MVA transformer capacity of 33/11kV distribution and 30MVA of 132/33kV substation capacity as well as 50km of 132kV transmission line; (b) the reinforcement of about 100km of 33kV and 75km of 11kV distribution lines, and the installation of 7.5MVA capacitors; and (c) installation of demand management devices comprising ripple control equipment to switch off selectively major loads pending restoration of plant outages, and under -frequency actuated load shedding devices for peak demand management.
2. Upgrade the Hwange Power Plant Operations by: (a) the provision of technical assistance to help in power plant management and operations; (b) the acquisition of materials and spares and proprietary maintenance service contracts; (c) the provision of services and equipment for major overhauls of 5 of the 6 generating units; and (d) upgrading the capacity of the HPP's cooling systems including construction of an additional cooling tower, replacing the outdated pneumatic process control system of the Stage I units, and improving instrumentation and monitoring;
3. Design of the Hwange Power Plant Extension;
4. Mechanical and Electrical Workshops;
5. Vehicles;
6. Management Information System

c. Comments on Project Cost, Financing and Dates

The total project cost was US\$ 134.2 million, compared to an appraisal figure of US\$ 174.2 million. The Bank provided loans in the amount of US\$ 90.0 million, of which US\$ 88.8 million was disbursed. US\$ 1.1 million was canceled. IBRD's share of financing for the Distribution Component was reduced because AfDB funding was made available for the reconditioning and the increase in distribution transformer capacity envisaged in the original scope of the Project. The Zimbabwe Electricity Supply Authority (ZESA) financed US\$ 33.8 million as well as the local currency requirement. ZESA's foreign currency share was facilitated by the Government's on-lending arrangement of US\$ 20.2 million from the US\$ 150 million credit provided by IDA to help the Government implement the Emergency Drought Recovery and Mitigation Project (EDRMP). The funds channeled from the EDRMP credit were used to

purchase spares for maintenance and overhauling of HPP Stage I units .

3. Achievement of Relevant Objectives:

1. **Minimize the shortage of power supply by improving the reliability and the performance of the Hwange Power Plant:** This objective was partially achieved. The unforeseen breakdown of one of the transformers adversely affected the achievement of this objective . The transformer was out of service for 7 months. Repair of the transformer was delayed by a shortage of foreign exchange . Hwange Power Plant's availability was reduced to 78 percent in FY99, which was below the 83 percent target. It should be noted, however, that when discounting the breakdown of the unit transformer and applying past trends for outages, HPP's availability factor would have been 84.1 percent. In fact, ZESA's comments confirm that before the transformer breakdown and after the completion of the upgrade program, the availability factor of unit 4 was 88.2 percent in 1998, and 93.1 percent until the breakdown when it plummeted to 78 percent. Following the repair of the unit transformer which was put back to service in July 2000, seven months after project closure, the average availability factor is high at 87.4 percent. The availability factor of the plant is expected to be above the target figure of 83 percent in the medium to long term. Continuous achievement of the 83 percent target figure could be hampered by the delays in overhauling units 5 and 6, mainly due to the lack of foreign exchange .
2. **Increase the efficiency of the distribution system through loss reduction and demand management measures:** This objective was not achieved. The installation of statistical meters to better determine the level of losses at bulk supply points and distribution feeders had only begun at project close . Distribution losses remained at 11 percent, which was 1.7 percent above the targeted level of 9.3 percent. It should be noted, however, that the 9.3 percent target may not have been met due in part to a possibly inaccurate reference point for losses.
3. **Better manage power shortages through discriminative load shedding measures :** This objective was achieved. Power shortages are better managed through the refurbishment of ripple control systems for selective and discriminative load shedding . Moreover, the installation of under-frequency relays for load shedding during system disturbances has increased HPP's ability to manage power shortages .
4. **Facilitate the commercialization of ZESA :** This objective was partially achieved. ZESA's average retail tariff did not keep pace with exchange rate shocks until mid -1999, when ZESA was able to implement an automatic monthly tariff adjustment mechanism for its commercial customers . After the project closed, ZESA was able to apply the mechanism to all consumer categories . The scarcity of foreign exchange further exacerbated ZESA's ability to pay its foreign debt and maintain/repair HPP. Despite these difficulties, ZESA's accounts receivables averaged 39 days from FY95 through project closure. This is significantly better than the covenanted figures of 75 days for FY94-95, and 60 days for subsequent fiscal years . Moreover, ZESA was successful in the development of a cohesive power sector reform program spelled out in the White Paper that describes the proposed unbundling and divestiture program envisaged for ZESA, and the regulatory framework, including promoting private sector participation . The White Paper was submitted to the Cabinet in February 2001 and entailed a good deal of consensus building with stakeholders .
5. **Help ZESA build sustainable technical capability to promote more efficient operation and planning of the power system:** This objective was achieved. Training under Power III focused on management, finance, power plant operations, distribution networks, and demand side management . Participation by ZESA staff in power sector reform seminars helped to foster an understanding of power sector reform and the role of private sector participation. Workshops and the MIS component accounted for almost nine percent of the project's total cost (US\$11.5 million of the US\$134.2 million total). The cabinet has approved ZESA's proposal to promote private sector investment in generation, but to date, bidding has been less than transparent . An Electricity White Paper to define the Government's policy objectives for the power sector was drafted by a joint MTE/ZESA team. The strategy includes the unbundling of generation, transmission and distribution into business units, a revision to the Electricity Act, and the establishment of an autonomous regulatory body . The draft paper emphasized private sector participation in distribution and in generation . Also, the draft paper makes recommendations on the establishment of a Rural Electrification Agency to accelerate rural electrification schemes in isolated areas of the country, as well as those where grid connection would be economic.

4. Significant Outcomes/Impacts:

Even though the objective of increasing the efficiency of the distribution system was not achieved, the number of new customers increased by over 130,000. This amounted to a 41 percent increase in the number of new customers provided with electricity supply.

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

None.

6. Ratings:	ICR	OED Review	Reason for Disagreement /Comments
Outcome:	Satisfactory	Moderately Satisfactory	OED rates the outcome of the project as

			Moderately Satisfactory. Some of the project's objectives were only partially achieved and, because of the steep devaluation of the Zimbabwe Dollar, the financial rate of return in the latter years of the project was significantly below the appraisal estimate. Nevertheless, the economic rate of return was acceptable at 13.9 percent.
Institutional Dev .:	Substantial	Substantial	
Sustainability :	Likely	Likely	The benefits accruing from the project are likely to be sustainable over time, <u>but only with the privatization of ZESA.</u> To date, ZESA's privatization has not started, but the utility has been fast-tracked for privatization. The Ministry of Mines and Energy has approved the white paper detailing ZESA's privatization and Parliamentary approval is pending. The white paper has earmarked HPP for privatization and experience gained from the process is expected to be put into use in the further unbundling of ZESA. In the mean time, HPP has been transferred to an investment arm in preparation for the privatization of ZESA.
Bank Performance :	Satisfactory	Satisfactory	
Borrower Perf .:	Highly Satisfactory	Satisfactory	As the ICR notes, "ZESA's performance under trying circumstances remains commendable." OED concurs with this assessment. However, ZESA's overall performance cannot be rated as Highly Satisfactory given ZESA's inability to comply with the self-financing ratio and debt service coverage, even though its non-compliance was a result of Zimbabwe's poor macroeconomic situation, coupled with the Government's late action on approving tariff increases.
Quality of ICR :		Satisfactory	

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

7. Lessons of Broad Applicability:

- Up-front commitments and support for sector reform, with articulated ownership by all parties concerned, can greatly facilitate the process of commercialization and power sector restructuring. The Government's stated commitment to a power sector policy embracing commercialization and restructuring, which was given during the preparation of the project, helped to reverse ZESA's poor performance. As a result, ZESA's commercialization effort surpassed expectations in the areas of accounts receivable and access to electricity significantly increased.
- Maintaining a dialogue on sector reform even in the context of a downturn in macroeconomic performance is an important role for the Bank and one where its comparative advantage in analytical and advisory services could be put to good use. In spite of the deterioration in Zimbabwe's macroeconomic program, by project closure significant steps had been taken to define a cohesive power sector reform program that is now being implemented, albeit slowly.

8. Assessment Recommended? Yes No

9. Comments on Quality of ICR:

The quality of the ICR is very good. Its coverage is comprehensive and it is clearly written. Its value could have been augmented by an assessment of the extent to which ZESA's increased electricity coverage benefited the poor.