



1. Project Data:		Date Posted : 09/11/2009	
PROJ ID : P002984		Appraisal	Actual
Project Name : Ug-power Sil 4 (fy02)	Project Costs (US\$M):	89.3	87.8
Country: Uganda	Loan/Credit (US\$M):	62.0	61.2
Sector Board : EMT	Cofinancing (US\$M):	18.0	21.4
Sector(s): Power (95%) Central government administration (5%)			
Theme(s): Infrastructure services for private sector development (34% - P) State enterprise/bank restructuring and privatization (33% - P) Regulation and competition policy (33% - P)			
L/C Number: C3545			
	Board Approval Date :		07/03/2001
Partners involved : Nordic Development Fund (NDF) Norwegian Agency for Development Cooperation (NORAD)	Closing Date :	12/31/2004	03/31/2008
Evaluator :	Panel Reviewer :	Group Manager :	Group:
Robert Mark Lacey	Roy Gilbert	Monika Huppi	IEGSG

2. Project Objectives and Components:

a. Objectives:

The objectives of the project, according to the PAD, were: (a) to improve power supply to meet demand by supporting critically needed investments in the electric power sub-sector; and (b) to strengthen Borrower capacity to manage reform, privatization and development in the power and petroleum sub-sectors. These objectives are the same as those stated in the Credit Agreement except that in the latter, the word "privatization" does not feature in objective (b).

b. Were the project objectives/key associated outcome targets revised during implementation?

No

c. Components (or Key Conditions in the case of DPLs, as appropriate):

There were four components.

Component A Power System Expansion and Rehabilitation (US\$83.9 million at appraisal, US\$80.5

million at closure) financed (i) two 40 MW hydropower turbines (units 14 and 15) at the Kiira hydropower facility; (ii) upgrading and extension of the System Control and Data Acquisition (SCADA) and telecommunication systems; (iii) rehabilitation of transmission system components; (iv) civil works and hydro-mechanical equipment for completing the installation of an earlier turbine unit at Kiira; and (v) project design and supervision.

Component B Environmental Monitoring (US\$0.2 million at appraisal, US\$40,000 at closure) financed an environmental officer and monitoring equipment to ensure compliance with the Bank's and with Uganda's environmental requirements.

Component C Power Sector Development and Reform (US\$2.4 million at appraisal, US\$5.6 million at closure) supported power sector development and reform through capacity strengthening and studies.

Component D Petroleum Sector Development and Reform (US\$1.0 million at appraisal, US\$1.1 million at closure) aimed to enhance the capacity of the Ministry of Energy and Minerals Development (MEMD) to manage the petroleum sector through the provision of monitoring equipment and consultancy services.

d. Comments on Project Cost, Financing, Borrower Contribution, and Dates:

Project Cost. Due to cost savings on procurement of the turbines in Component A, US\$21 million was reallocated at the December 2003 Mid Term Review (MTR) as follows: further strengthening and expansion of the transmission system (US\$6.8 million); support for the concessioning of distribution system assets to a private operator (US\$11 million); retroactive financing of claims related to the previous Third Power Project (US\$2.3 million); environmental monitoring (US\$0.2 million); and dam safety, geothermal development and tariff mechanisms (US\$0.7 million).

Financing. The project was co-financed by NDF and NORAD, who contributed US\$11.3 million and US\$6.7 million respectively. The Borrower's contribution, estimated at US\$9.3 million at appraisal, was US\$4.7 million at closure. This gap was largely filled by a US\$3.4 million increase in the dollar value of the euro denominated NDF contribution due to exchange rate movements.

Dates. For approximately three years following effectiveness in April 2002, implementation proceeded satisfactorily. From 2005 onwards, however, progress was slower than anticipated. Technical problems with the commissioning of the two new turbines caused delays of about 2.5 years, and procurement issues related to the new project components resulted in a further six months holdup. Following the recommendation at the MTR, the closing date was extended by two years to December 31, 2006; two further extensions were, nonetheless, required, first to December 31, 2007 and then to March 31, 2008.

3. Relevance of Objectives & Design:

Relevance of objectives and design was *modest*.

The project's *objectives* were, and remain, *substantially relevant*. They are consistent with the goals of the Poverty Eradication Action Plan, an overarching Government of Uganda policy for economic growth and poverty reduction, which identified improving access to, and quality of, power transport and telecommunications as priorities for the country's development. They are also fully consistent with the Bank's strategic priorities for Uganda with their emphasis on improved and least cost infrastructure delivery, sector reform and privatization. However, as noted below, development objectives were too broad and ambitious given the resources available for the project.

Overall, *design relevance* is rated as *modest*. While design was of a high technical standard, and focused on the sector's principal technical, institutional and financial constraints, it was also over ambitious. The financial and technical resources made available under the project were insufficient to achieve its goals. The time necessary to implement the project was underestimated and not enough allowance was made for client capacity limitations. A number of risk factors were not taken fully into account, including hydrology risks beyond those that were analyzed; commissioning delays for the turbines, a risk rated only as modest; the failure of the first private sector Bujagali hydro project to reach closure as planned in 2003; and delays in the private concessioning of the distribution network which impacted negatively on the project's system loss reduction goals.

4. Achievement of Objectives (Efficacy):

Overall, the efficacy of the project is rated as *modest*.

Objective (a) -- to improve power supply to meet demand by supporting critically needed investments in the electric power sub-sector -- was achieved only to a *modest* extent. At closure, only some 19 GWh of additional generated energy was produced by turbine units 14 and 15 at Kiira compared to an appraisal estimate of 95 GWh. This was due mainly to low hydrology conditions resulting from prolonged drought. While output is now rising significantly as climatic conditions improve, and it is probable that supply will reach appraisal targets within a few years, the anticipated greater flexibility in generation capacity and reduced risks from dam failure are not yet manifest. This failure was partially offset by over-achievement of two sub-objectives. Annual outages due to defects in the transmission system have been reduced by 59% against a target of 30%, and the number of new connections per annum had reached about 20,000 by project closure compared to a predicted 10,000.

Objective (b) -- to strengthen Borrower capacity to manage reform, privatization and development in the power and petroleum sub-sectors -- was achieved to a *substantial* extent. Environmental management capacity was increased -- plans were fully implemented in compliance with both country and Bank safeguard policies, and all necessary mitigation measures were carried out. A well-functioning regulator (Electricity Regulating Authority, ERA) was established. The Uganda Electricity Board (UEB) was unbundled into separate entities for generation, transmission and distribution, and the generation and distribution facilities were concessioned to the private sector. Water management of Lake Victoria has been improved, and a Dam Safety Framework established. There has been progress in developing alternative energy sources. The inspection and enforcement capacity of both the MEMD and Uganda National Bureau of Standards has been enhanced through the setting up of petroleum laboratories.

5. Efficiency (not applicable to DPLs):

The economic efficiency of the project is rated as *high*. Despite the tardiness in commissioning the two new turbine units at Kiira, the ERR was substantially higher at closure than at appraisal (the same methodology was applied). This is mainly because the delay in the construction of the private Bujagali hydropower plant increased the economic value of the Kiira facilities. Moreover, according to the Environmental Assessment for the Nile Equatorial Lakes Region, there is a high probability that climate changes will lead to increased run-off, which would enhance further the economic benefits of the two new units. No separate financial rate of return was calculated.

a. If available, enter the Economic Rate of Return (ERR)/Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation :

	Rate Available?	Point Value	Coverage/Scope*
Appraisal	Yes	20%	90%
ICR estimate	Yes	46%	90%

* Refers to percent of total project cost for which ERR/FRR was calculated.

6. Outcome:

Relevance is efficacy are both modest although efficiency is high. While the operation played a significant role in furthering and consolidating reform and putting the power sector on a firmer financial footing, project resources were insufficient to reach the development objectives before closure.

a. Outcome Rating : Moderately Unsatisfactory

7. Rationale for Risk to Development Outcome Rating:

The risks to development outcome are moderate.

When project preparation began, the financial weakness of Uganda's power sector was defined as a major risk. The financial performance of the three unbundled companies and the distribution concessionaire is now satisfactory, although loss reduction remains a challenge. There is a well functioning regulator with a strong record of approving cost reflective tariff adjustments. This, together with technical and institutional enhancements, should help to ensure sustainable operation and maintenance.

Improvements to hydro generation and transmission facilities will lead to greater flexibility and more reliable power supply over the long term, as well as mitigating the effects of unforeseen rises in petroleum prices.

The Government of Uganda has demonstrated a commitment to deepening power sector reform and has already implemented the most significant institutional changes.

The main outstanding risk concerns Lake Victoria hydrology. Here, also, there has been considerable improvement in water resource management; however, over-abstraction persists. Although regional coordination has strengthened, there is still a need for a shared vision and plan for the Lake's management which would include a careful assessment of the risks and vulnerability associated with hydrological variability and the development of mitigating measures.

a. Risk to Development Outcome Rating : Moderate

8. Assessment of Bank Performance:

Quality at entry was *Moderately Satisfactory* . Project design was technically sound and the implementation arrangements built upon the lessons learnt during previous power projects in Uganda. Bank-funded activities were clearly demarcated from those of the co-financiers. The PDOs were clear and easy to monitor. Design and bidding documents were available prior to project approval, and this contributed to satisfactory progress during the first years of implementation. However, as noted in Section 3 above, the financial and technical resources, as well as the time available, were insufficient to enable attainment of project goals. Moreover, risk identification and mitigation had significant shortcomings, and in particular three major risks were not given sufficient weight: drought conditions; the increased generation deficit beyond 2005 resulting from the withdrawal of the first private sponsor for the Bujagali hydro project; and the delay in concessioning the distribution network. Supervision was *Satisfactory* . 12 staff members and consultants participated in supervision (excluding administrative support), and there was one task team leader throughout which undoubtedly contributed to efficacy. The supervision team demonstrated flexibility and responded in a timely manner to changing circumstances including the Borrower's request for a restructuring of the DCA at the MTR. Responsiveness was enhanced by the presence of some team members in the Country Office. Several unforeseen demands challenged the supervision budget, including the recruitment of an additional consultant hydrologist to address the fall in Lake Victoria water levels, and additional engineering expertise to confront technical problems with the two new turbine units.

a. Ensuring Quality -at-Entry: Moderately Satisfactory

b. Quality of Supervision : Satisfactory

c. Overall Bank Performance : Moderately Satisfactory

9. Assessment of Borrower Performance:

Central Government performance was *Satisfactory* . Overall, the Government demonstrated ownership and commitment to project goals, and performed particularly well in implementing the institutional reform program (unbundling, regulation, privatization). There were initial difficulties with counterpart funding, and central government electricity bill arrears were only settled towards project closure. More agile planning could have reduced the generation deficit and the negative impact on

Lake Victoria resulting from the withdrawal of the first Bujagali project sponsor. Project implementation was the responsibility of MEMD, itself part of Government. Performance was **Satisfactory**. The Ministry supervised the policy components directly, while the physical investment and consultancy components were managed by the Project Implementation Unit (PIU). There was initially some tardiness in delivering the required monitoring reports, but in general both the Ministry itself and the PIU were diligent in identifying and adequately addressing implementation issues as they arose.

a. Government Performance :Satisfactory

b. Implementing Agency Performance :Satisfactory

c. Overall Borrower Performance :Satisfactory

10. M&E Design, Implementation, & Utilization:

The quality of M&E design in the PAD was **substantial**. The PDOs were clearly defined and a considerable number of quantitative targets were developed with which to measure progress towards their attainment. These covered institutional measures relating to sector reform and management as well as projected outputs and outcomes such as load shedding, loss reductions, number of new connections etc. There was, however, an excessive number of indicators and some of them – for example, load shedding and loss reductions – were beyond the project's scope. Initially this limited the utilization of some indicators. In 2006, they were redesigned in a new results framework which made it much easier to link systematically inputs to outputs and outputs to outcomes in the form of progress towards meeting the unchanged PDOs. This new system of indicators was used during the last two years of implementation and continues to be employed to track progress. Implementation and utilization are therefore also rated as **substantial**.

a. M&E Quality Rating : Substantial

11. Other Issues (Safeguards, Fiduciary, Unintended Positive and Negative Impacts):

Environment: The project was classified as category B for environmental impact purposes. Although direct environmental issues were minor (the capital works were limited to placing two generating units in existing bays and construction of transmission sub-stations), wider dimensions were addressed. An Environmental Management Plan was prepared for the restructured project. A final environmental supervision mission in October 2007 was satisfied that the Plan's provisions had been, or soon would be, implemented. According to the ICR, all activities had been completed by closure. The end use energy efficiency programs initiated under the project, including energy audits of public and private institutions, continue to be implemented under other Bank-supported activities.

The risks associated with falling water levels in Lake Victoria are an ongoing concern. Abstraction, though reduced, continues at a rate above the amount for power generation that was agreed between Uganda and another riparian country. Cross sectoral coordination and collaboration, at both regional and national levels, has intensified, as has the Bank's involvement through its participation in the Lake Victoria Discussion Group. Hydrological concerns have given impetus to the preparation of the of Phase II of the Lake Victoria Environmental Management Project.

Resettlement: Initially, there were no resettlement or social issues associated with the project. However, the added transmission and distribution components did require some resettlement and land acquisition. Little detail is provided in the ICR, but it is implied that the impact was minor and adequate remedial and compensatory measures taken in line with Bank safeguards.

Fiduciary: There is no discussion in the ICR of the timeliness and adequacy of project financial audits. However, the financial management performance of the Uganda Electricity Transmission Company Ltd.

(UETCL), which was responsible for Components A and B, was judged satisfactory, while that of MEMD (components C and D) displayed some weaknesses in accounting policies, budget monitoring, and internal controls; it was judged to be moderately satisfactory. In order to ensure the financial viability of the power sector, two financial covenants were set: (i) debt service coverage of 1.0 times net operating revenues in 2001 and 1.3 times from 2003 onwards; and (ii) a current ratio of 1.0 in 2001 and 1.2 from 2002 onwards. Although there was some tardiness in achieving these targets, by 2006 they were being met or exceeded by all the unbundled entities in the sector, and this continued through 2008. There is no doubt that the sector is now in a much sounder financial position.

Unintended Outcomes: Following the recommendations of one of the studies supported by the project, Kenya and Uganda have agreed to the extension of an oil pipeline which is expected to reduce the cost of transporting the latter's petroleum supplies by about 50% and increase supply reliability.

12. Ratings:	ICR	IEG Review	Reason for Disagreement /Comments
Outcome:	Moderately Satisfactory	Moderately Unsatisfactory	Development objectives were over-ambitious given the resources and time available for implementation. Much still remained to be achieved at closure.
Risk to Development Outcome:	Negligible to Low	Moderate	Climatic risks, associated particularly with Lake Victoria's hydrology, remain a concern.
Bank Performance:	Satisfactory	Moderately Satisfactory	Design was over-ambitious. Insufficient weight was given to three major risks.
Borrower Performance:	Satisfactory	Satisfactory	
Quality of ICR:		Satisfactory	

NOTES:

- When insufficient information is provided by the Bank for IEG to arrive at a clear rating, IEG will downgrade the relevant ratings as warranted beginning July 1, 2006.
- The "Reason for Disagreement/Comments" column could cross-reference other sections of the ICR Review, as appropriate.

13. Lessons:

1. The scope of project objectives should be narrowed to what can reasonably be achieved with the project's support, and performance indicators restricted to those where it can be expected to have an attributable impact. While the reforms aimed for here were all desirable, a number of them were beyond the project's financial reach. The project was also unable to influence the timing of the distribution concession.
2. Project preparation should be realistic about the client's implementation capacity and the time it would take to achieve reforms and implement project-supported investments.
3. Critical climatic and environmental risks to project outcomes, such as -- in this case -- Lake Victoria water levels, should be fully analyzed and appropriate mitigation built into project goals.
4. Least cost options for increasing power supply are not necessarily the same as those for reducing power shortages. In addition to new generating capacity, the latter are likely to include demand side management and an action plan for reducing system losses.

14. Assessment Recommended? ☐ Yes ☒ No

15. Comments on Quality of ICR:

The ICR is clearly written and focuses on the issues which arose during implementation. It contains most of the material required to reach an informed judgment concerning the outcome of the project. There are, nonetheless, two significant shortcomings. Too much attention is paid to delivery of component outputs and too little to development outcomes. The assessment of risk to development outcome is thin and backed by little evidence. Three more minor points: the document is nearly twice the recommended length; more detail could have been provided on the resettlement and compensation resulting from the additional transmission works, and there should have been a discussion in the fiduciary section of project financial auditing and any major procurement issues which may have arisen.

a. Quality of ICR Rating : Satisfactory