

**PROJECT INFORMATION DOCUMENT (PID)  
APPRAISAL STAGE**

Report No.: AB2857

<b>Project Name</b>	UG - Private Power Generation Project (Bujagali)
<b>Region</b>	AFRICA
<b>Sector</b>	Power (100%)
<b>Project ID</b>	P089659
<b>Borrower(s)</b>	GOVERNMENT OF UGANDA/PRIVATE SECTOR
<b>Implementing Agencies</b>	
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<b>Environment Category</b>	<input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> FI <input type="checkbox"/> TBD (to be determined)
<b>Date PID Prepared</b>	March 26, 2007
<b>Date of Appraisal Authorization</b>	March 14, 2007
<b>Date of Board Approval</b>	April 26, 2007

## 1. Country and Sector Background

### Country Context

With per capita income of about US\$280 in 2005, Uganda is one of the poorest countries in the world. Despite the progress in reducing the national level of poverty, from 56 percent in 1992 to 31 percent in 2006, the population in the rural areas as well as the Northern and Eastern regions remains vulnerable – rural poverty accounts for 90 percent of the national level, and about 61 and 36 percent of the population in the North and East live below the poverty line. Uganda’s demographic characteristics pose a challenge to future growth – the country has one of the highest population growth rates in world of 3.2 percent between 1991 and 2002 (3.5 percent in 2005), very high fertility (about 7 children per woman) and dependence ratios (111 dependants per 100 working people). Life expectancy is low - 49 years at birth. Without commensurate growth in infrastructure, employment opportunities and productivity, demographics will reduce the benefits of economic growth, which is essential for reducing poverty and inequality.

Uganda has experienced impressively robust macro-economic performance in recent years, averaging 6.4% growth between 1990 and 2005. Strong macro-economic policies, a credible program to eradicate poverty and good financial discipline have led to falling poverty levels. Domestic inflation has been slightly above the 5 percent target for the third consecutive year due to inflationary pressures from weather, power shortages and energy price shocks. The Uganda Shilling depreciated by 4 percent against the US Dollar due to higher demand for foreign exchange to finance the import bill. Overall due to good macroeconomic management, savings, exports, and foreign direct investment are increasing. Within the region, Uganda has been a leader in the fight against HIV/AIDS, with prevalence dropping significantly during the past decade. The challenge for Uganda is now to deepen the reforms already underway and prevent their reversal.

To accelerate growth, the underpinnings of a market economy need to be further strengthened, exports need to be diversified, new economic opportunities have to be sought, and more needs to be done to attract private sector investment. Although Uganda has made substantial progress towards achieving the Millennium Development Goals (MDGs), more needs to be done to sustain progress and to improve the prospects for meeting all the goals. Special efforts will be needed to improve the quality of education services to ensure that children complete primary education and to eliminate gender disparity at the post-primary levels of education. Greater access to quality health services is also essential to significantly reduce child and maternal mortality rates. Finally, Uganda's very high rate of population growth poses a long-term challenge for growth and poverty reduction.

**Power Crisis Impacts on Economic Growth.** Even though economic growth and Uganda's external position were largely consistent with the Government's program for 2005/06, the ongoing electricity crisis has placed a significant strain on growth over the medium term. The current crisis in the power sector consists of important power shortages that are attributable to delays in adding new generation capacity, an important regional drought over the past few years which has reduced the output of existing hydropower plants, and annual demand growth for electricity of about 8%. As a consequence, businesses and consumers have been forced to endure prolonged service cuts, with some shifting production to times when power is available, and many larger businesses are relying on high-cost back up generators. Manufacturing, high-value agriculture (e.g., flowers), and processing industries (e.g., fish) are most affected by power cuts, and profits in these industries are being squeezed.<sup>1</sup> Other macroeconomic consequences from the current power crisis were inflation that was slightly above projections through September 2006 due to higher energy costs, and the trade deficit widened because of higher oil prices and increases in diesel fuel import volumes for electricity purchased from thermal power plants. The present situation, with extensive load-shedding blackouts, is not sustainable and further delays in augmenting Uganda's electricity generation capacity could undermine the economy.

Ugandan industrial growth has been constrained by spiraling energy<sup>2</sup> and transportation costs, exacerbated by the current power shortages and both inadequate and poorly maintained infrastructure. By diversifying away from traditional exports and industries, such as the coffee sector, the Government (GOU) is attempting to create a more stable and dynamic economic base. However, the infrastructure gap, particularly in energy and transportation, has placed extreme pressure on the cost of doing business in Uganda, especially for the manufacturing and horticultural sectors.

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<sup>1</sup> Measured Gross Domestic Product (GDP) growth in 2005 of 5.5% was largely unaffected due to these short-term coping strategies and because of the methodology used in estimating GDP which does not fully capture the decline in value added stemming from increased costs.

<sup>2</sup> The lack of reliable and available power supply has forced many industries and businesses to run expensive back up generation. The cost of unserved energy which includes this alternative back-up generation has been estimated at US¢ 39.4 per kWh.

As an immediate priority, the Government is taking steps to resolve the ongoing electricity crisis. It is important to note that IDA currently supports GOU's short term mitigation measures described further below with a Power Sector Development Credit that is submitted this same day to Board and this Project herein supports directly GOU's long term measures to resolve the crisis through the addition of important new generation capacity.

**Uganda's Poverty Eradication Action Plan (PEAP).** Uganda's development objectives are articulated in the 2004 PEAP, the third version of its poverty eradication action plan. The 2004 PEAP restates the country's ambitions of eradicating mass poverty and of becoming a middle income country in the next twenty years. It articulates a shift of policy focus from recovery to sustainable growth and structural transformation. The PEAP presents specific policies and measures to achieve its objectives, grouped under five pillars: (a) economic management; (b) enhancing competitiveness, production and incomes; (c) security, conflict resolution, and disaster management; (d) governance; and (e) human resources development.

### **Power Sector Context**

**Background.** Over the past three years, Uganda has suffered chronic power shortages arising from a combination of: (a) delays in developing additional generation capacity, particularly the Bank Group supported Bujagali private hydroelectric plant, which was to have been in service by now, but is now expected to be in service in 2011; (b) prolonged drought in the region; (c) the unreliability of the dilapidated distribution system; and (d) annual demand growth of about 8%.

**Overall Government Strategy.** The GOU power sector strategy has been to: (a) promote legal, regulatory and structural sector reforms, including leveraging the role of the private sector in investment operations and future development; (b) provide adequate, reliable and least-cost power generation with the goal to meet urban and industrial demand and increase access; and (c) scale up rural access to underpin broad based development. The Bank has played a key role in supporting the Government's power sector strategy and reformed policy framework including catalyzing private sector management and capital.

Over the past seven years, the Government has, with Bank Group support:

- a) promulgated a new Electricity Act;
- b) established an independent Electricity Regulatory Authority to regulate the sector.
- c) unbundled the State-owned Uganda Electricity Board into separate entities responsible for generation, transmission and distribution;
- d) built on the policy and structural reforms implemented since 1999, to promote the efficient operation of the power sector and to increase the role of the private sector in its operation and future development by concessioning main-grid generation and distribution facilities to the private sector with only transmission controlled by a State-owned company; (see Annex 1 for details on the Government's comprehensive power sector reform program);
- e) increased the percentage of urban and rural households with direct access to electricity and promoted grid and off-grid private sector-led rural electrification by establishing a Rural Electrification Agency to provide once-time output-based subsidies; and
- f) started to provide adequate, reliable and least-cost power generation capacity to meet demand and pursue regional power interconnections with the countries of the East Africa Community. This regional approach would benefit all countries involved by diversifying supply sources and reducing investment costs.

## **Main Sector Issues and Government Responses**

**Issue 1: Power Shortages.** Uganda's main source of power is from the Nalubaale and Kiira 380MW dam complex, located at the mouth of Lake Victoria. Firm hydropower output from this complex was reduced from an average of about 270MW as of the end of 2005, to around 120MW in August 2006 because of low Lake Victoria water levels. In contrast, current system demand is about 380MW at peak times and about 290MW at base load, resulting in persistent and acute power shortages which are impacting on growth. The reasons for these power shortages are fourfold. First, there has been a significant delay in power infrastructure development and, in particular, in completing the financing of the Bujagali project, which is the next least-cost generation increment. As part of the previous effort to develop the project, construction was scheduled to commence in early 2002 and the power station was to be commissioned by the end of 2005. Second, the low Lake Victoria water levels, caused both by the recent regional drought as well as water over-abstraction for hydropower generation, have resulted in significantly reduced power generation output at the Nalubaale/Kiira dam complex. In this regard, the Government has decreased hydropower production in an effort to return to the principles embodied in the Agreed Curve<sup>3</sup>. A third contributor to current power shortages has been the high level of technical losses of the distribution system, which are now being addressed by UMEME, the private sector concessionaire. Fourth, annual demand growth over the past several years increased by about 8%, placing additional pressure on the power system.

It is noteworthy that if the Bujagali project had been successfully financed in 2002, Uganda would have been able to avoid the current economic penalties. Moreover, the reductions in Lake Victoria water levels from over-abstraction for hydropower production may not have occurred. This is because the Bujagali project is downstream of the current Nalubaale/Kiira dam complex, and will re-use the upstream water releases. When commissioned, the proposed project will produce power at a fraction of the cost Uganda is now paying for the supply from thermal power plants running on imported fuel.

**Government Actions Already Taken.** To mitigate the shortages, the Government has augmented power supply, and has concessioned the distribution license to a private investor with clear the performance improvement targets.

**Augmenting Power Supply.** The Government has contracted several thermal generation plants running on Automotive Gas Oil -- the only available short-term technical option given transportation and fuel logistics. In April 2005, the Government contracted for electricity supply from a 50MW privately owned diesel power plant. In late 2006, an additional 50MW of thermal capacity was contracted and is also being operated by the private sector. In addition, a proposed Power Sector Development Operation (US\$306 million, of which US\$6.4 million is from the Swedish International Development Agency (Sida) and US\$300 million is from IDA), is scheduled for Board Presentation in April 2007. This Power Sector Development Operation will include: (a) the contracting of an additional 50MW of thermal generation capacity to help meet existing electricity demand; (b) demand side management and energy efficiency measures; and (c) financial support to assist the Government in absorbing a portion of the high costs of thermal power generation. These three thermal plants would operate until the proposed Private Power Generation Project (Bujagali) is commissioned in early 2011. Furthermore, the Government is moving forward with a 50MW thermal plant based on less costly Heavy Fuel Oil as an Independent Power Producer (IPP). This plant will provide thermal complementation to the Ugandan power system over the long term. The Government is also actively pursuing co-generation opportunities, accelerating

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<sup>3</sup> The Agreed Curve describes a water discharge rating curve which emulates the natural relationship between Lake Victoria levels and the flow of the Nile River through the Nalubaale and Kiira hydropower dams. It depicts the management of the Nalubaale and Kiira dams in which the volume of water released would remain consistent with what would have occurred under natural conditions, thereby ensuring no change in downstream discharges. Since the Agreed Curve functions as an operating rule for water discharge, such water releases are a function of the lake level at any given period.

its renewable energy program and geothermal potential. The Government has also reported a domestic oil resource discovery in the Lake Albert region of western Uganda, which would need to be proven as economically viable; this is not expected to have any impact on power generation over the medium term. Despite the additional thermal capacity that is expected to be commissioned over the medium term, however, significant peak and base load shedding is expected to continue until the proposed project is commissioned in early 2011.

***Improving Power Transmission & Distribution Performance.*** A key element of the Government's power sector reform program has been to concession the power distribution facilities to the private sector as a means to underpin the commercial viability and sustainability of the power sector. In March 2005, UMEME, the private concessionaire, took over the operations of the distribution system under a concession agreement that includes financial incentives to increase the number of connections, reduce technical and non-technical losses and increase the collection rate (see Annex 1). At the time of UMEME's takeover, system technical and non technical losses were around 38%. The billing collection ratio was 80%, implying that prior to the UMEME concession only about 44% of the energy sent out to the national grid was ultimately paid for. Since March 2005, UMEME has improved the collection rate from 80% to 92% (although the rate dropped again to 82% in December 2006 since the June and November tariff increase), decreased system technical and non-technical losses to about 34%, and connected about 36,000 new customers. During the first 18 months of the concession, UMEME invested US\$13.6 million for system improvements, and has committed to invest a total of US\$65 million during the first five years of the concession. Due to years of neglect of maintenance, inadequate investment, poor management practices and antiquated billing and accounting systems, it will take time and capital to lower technical and non technical losses. This will require implementing a customer verification program, installing new customer management and accounting systems, as well as replacing and installing meters, transformers and poles.

The lack of power available for sale, and the 114% increase in average electricity tariffs that took place in 2006, have affected UMEME's viability. A major challenge, therefore, has been to ensure that UMEME's performance under conditions of stress is not further impeded by the impact of reduced electricity supply and high tariffs. To this end, the Government and UMEME recently renegotiated portions of the concession agreements to protect UMEME during the current power crisis from the impact of power shortages and the reduced revenue stream, which are factors beyond UMEME's control but have a bearing on UMEME's ability to meet its concession obligations. The Government and UMEME are cognizant that due to the expensive thermal costs in the current generation mix, there is an urgent need to achieve accelerated efficiency improvements in the short to medium term. The restructured concession agreement includes commercial incentives for the concessionaire to reduce losses and non-collection rates.

**Issue 2: Power Sector Finances.** The impact of the high cost of thermal power on the Uganda power system is considerable, given the small size of Uganda's installed generation capacity, the low percentage of such installed capacity currently being used, and the high cost of thermal capacity. Electricity tariffs would have to increase to almost US\$0.265 in 2007 if the consumer were to bear the full costs of electricity. This is mainly due to the change in generation mix in the medium term (until the commissioning of the proposed project), from a predominantly hydro-based system in mid-2005, to a hydro/thermal mix of 55/45 today, which is expected to reach to about 50/50 by the end of 2007. Prior to the power crisis and consistent with the Government's reform program, the full costs of electricity supply were being borne by customers. The Government recognizes, however, that during this crisis period, there are affordability thresholds which if crossed, could have serious long-term impacts on the economy.

**Government Actions Already Taken.** In response to the current power crisis, Government has developed a financing plan (2006-10) to meet the high cost of thermal power generation which includes: (a) implementing tariff increases in 2006 in the order of 114%, which have raised the average retail electricity tariff to US\$318.53/kWh (or about \$0.17 per kWh); (b) annual Government budgetary support of about [US\$50 million], to be phased out upon the commissioning of Bujagali in early 2011; (c) the deferment of debt service owed by the generation, transmission and distribution companies to the Government (on-lent donor loans); and (d) a proposed IDA and Sida support of about US\$306 million for a Power Sector Development Operation (FY07). The combination of these measures should permit the power sector to generate sufficient revenues without further tariff increases until 2012. Electricity tariffs are expected to decline once the proposed Private Power Generation (Bujagali) project is commissioned in early 2011 and the benefits of the loss reduction and efficiency improvements are realized.

**Issue 3: Long term sector expansion and Increased Urban/Rural Access to Electricity.** Uganda has made commendable progress towards establishing a sector framework that will promote sustainability and growth. However, the Government recognizes that more is needed to fulfill this goal for the longer-term. In particular, the long term expansion of the sector requires: (a) the addition of least cost sustainable power generation, (b) improving the currently low access to electricity, and (c) regional integration of the transmission and generation system.

**Addition of Least Cost Sustainable Power Generation.** The current power crisis is partly due to delays in realizing hydropower generation investments in a timely manner. As a result, the Government has had to resort to expensive temporary thermal power generation. In the long run, the Government recognizes the importance of planning and developing future power sector investments in a timely manner and on a least cost basis. Furthermore since the latest drought period which had an important impact on the power generation capacity at the Lake Victoria power stations, GOU also has also recognized the importance of a certain mix of its generation sources by keeping hydropower as the least cost power generation source but by complementing those capacities with a certain level of alternative power generation facilities based on thermal or other generation sources.

**Government Actions Already Taken.** The realization of this Private Hydropower Generation Project which is situated downstream of Lake Victoria on the Nile, will reuse the water that has been evacuated from Nalubaale and Kiira, thereby allowing Uganda to produce more than twice as much power as it would generate with the existing station alone. This Project represents an important long-term least cost and sustainable generation expansion. When commissioned in 2011, the proposed project would immediately displace at least 738 GWh of diesel generation, thus demonstrating the economic penalty that the long delay of realizing the proposed project.

In addition to this Project GOU has also begun to tender out the construction and independent operation (IPP) of a 50 MW heavy fuel oil fired thermal plant with an initial generation period of 15 years. This plant will complement Uganda's power generation mix on a long term basis and in periods of low hydrology.

**Low Electricity Access Levels.** Uganda has one of the lowest rates of per capita energy consumption in the world, with only 5% of the population having access to electricity. Service expansion in urban and rural areas has been hampered in the past by political, commercial and technical issues. The lack of adequate power generation capacity, which has been partially addressed through the commissioning of high-cost thermal power generation, has also hindered progress on expanding urban access to electricity.

The Government has recently started to address this issue of low electricity access by several important measures supported by the Bank Group. Those measures comprise the following: (a) the government has

embarked on a Bank-supported Energy for Rural Transformation Program (Credit 3588-UG), which is a three phase ten year Adaptable Program Loan. This Program is also supporting up to 43MW from different mini-hydropower projects and 15MW from two bagasse plants, and which are expected to be commissioned in 2008/09; (b) an accelerated plan to reduce system losses and connect new customers; (c) support to UMEME through US\$11 million for rehabilitation investments under the Power IV Project (Credit 3545-UG); and (d) IDA and MIGA risk mitigation for UMEME, the private distribution concessionaire<sup>4</sup>.

Substantial improvements in the access urban and rural access rates can be expected in the mid and long term. The privatized distribution concession UMEME is obliged to invest US\$65 million in the next seven years and the ERT Program will begin with its second and third phase in the near future and will support the Rural Electrification Agency REA over the next 6 years.

## **2. Objectives**

The project's main objective is to provide adequate, reliable and cost-effective power generation in an economically and environmentally sustainable manner, so as to contribute to the economic growth and well-being of the Ugandan population. The proposed project would add a significant increment of 250MW of least cost installed power generation capacity to the national grid.

## **3. Rationale for Bank Involvement**

Electricity is a critical element of the Government's PEAP. Even though the Government has implemented a comprehensive power sector reform program, established a good track record in electricity regulation and privatized distribution and generation facilities, electricity service quality, availability and reliability have been major impediments to sustained investments in the economy and growth. The combined financial resources of the World Bank Group and donors are crucial to mobilize a considerable level private equity and commercial bank lending for this hydropower project (total project costs of US\$750 million) that is the next least cost generation option for the country. Moreover, private ownership, management and technical expertise will enhance overall power sector efficiency and performance. The achievement of this project will also help to underpin the power sector reform program implemented to date and will facilitate building private sector confidence in Uganda.

## **4. Description**

The Project consists of development, construction and maintenance of a run-of-the-river power plant with a capacity of 250 MW on a Build-Own-Operate-Transfer ("BOOT") basis (the "Project"). The Bujagali power plant will consist of a power station housing up to 5x50 MW Kaplan turbines with an associated 28 meters high earth-filled dam and spillway works. The project will comprise a small reservoir (with an estimated surface area of 388 hectares), an intake powerhouse complex, a 132kV switchyard (to be extended in the future to include a 220kV section) and other associated works.

The proposed project is to be developed by Bujagali Energy Limited ("BEL"), a special purpose company incorporated under the laws of Uganda. The Project Sponsors are: (a) Industrial Promotion Services (Kenya) Ltd. (IPS(K)), the Kenya subsidiary of IPS, the industrial

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<sup>4</sup> A Partial Risk IDA guarantee mechanism was approved under Privatization and Utility Sector Reform Project (Credit 3411-UG) in December 2004.

development arm of the Aga Khan Fund for Economic Development (AKFED); and (b) Sithe Global Power LLC (US) (Sithe Global), an international development company. The EPC contractor is expected to be a consortium formed by Salini SpA (Italy) and Alstom Power Hydraulique (France) who were selected following a competitive tender under the European Investment Bank's (EIB) procurement guidelines. The operations and maintenance ("O&M") operator of the plant will be an affiliate company of Sithe Global.

BEL will also manage the construction of approximately 100 kilometers of 132 kV transmission line, substations, and related works (the "Interconnection Project") on behalf of UETCL, Uganda's national transmission company, to evacuate electricity from the facility. The Project will be an Independent Power Producer ("IPP") and will sell electricity to UETCL under a 30-year Power Purchase Agreement ("PPA"), which was signed on December 13, 2005. UETCL's payment obligations under the PPA will be guaranteed by GOU through a government guarantee.

**Project Location and Salient Physical Characteristics Relevant to the Safeguard Analysis.**

The Project will be on the River Nile, at Dumbbell Island, 8 kilometers north of the existing Nalubaale and Kiira power plants, in Uganda. The dam will impound a reservoir extending back to the tailrace area of the Nalubaale and Kiira facilities, inundating Bujagali Falls. The reservoir will be 388 ha (3.88 km<sup>2</sup>) in surface area, comprising the existing 308 ha of the Victoria Nile, and 80 ha of newly inundated land. The reservoir waters will be contained within the steeply incised banks of the Victoria Nile between Dumbbell Island and Nalubaale, thereby minimizing the amount of newly inundated land. The Project will require 125 ha of permanent land take and 113 ha of temporary land take for the Project's ancillary facilities.

The associated IP, being developed by UETCL, involves the proposed construction and operation of the high voltage electrical transmission infrastructure needed in part to interconnect the proposed Bujagali Hydropower project to the national electrical grid and to strengthen the evacuation of electricity from the Project. The proposed IP includes: (i) a 70 km transmission line to convey power generated to a new substation to be located in Kawanda, on the outskirts of Kampala; (ii) a 17 km transmission line to connect the Kawanda substation to the existing Mutundwe substation, located in the southwest section of Kampala, where some minor upgrades will be needed to accept the new line; and (iii) two 5 km transmission lines to establish interconnections between Bujagali and the Tororo substation in eastern Uganda and the Nalubaale substation in Jinja.

**5. Financing**

<b>SOURCE:</b>	<b>(US\$ million)</b>
Shareholders	up to 151
IDA Guarantee	up to 115
Other Lenders	up to 532
<b>TOTAL</b>	<b>798</b>

## **6. Implementation**

### *A. Partnership Arrangements*

45. The proposed project is a public-private partnership between the private project sponsors (IPS (Kenya) and Sithe Global), the Government of Uganda (including UETCL), the donor community consisting of AfDB, EIB and IDA, bilateral development agencies (Proparco, FMO and DEG and 2 commercial banks, Barclays Bank of South Africa and Standard Chartered). The 250MW Bujagali power plant will be developed, financed, built, owned, and operated by BEL, a private company. A Power Purchase Agreement has been entered into between BEL and UETCL for the purchase of power over a 20 year period. The Implementation Agreement spells out the obligations of the Government and those of the private owner/operator. Consistent with international practice in project finance transactions, the project's contractual structure has allocated the commercial, technical and political risks to the parties best able to mitigate them. Financing for the power plant is being arranged by the Sponsors and will include equity from IPS (Kenya) and Sithe Global. Direct lending to BEL will be provided by: IFC, EIB, AfDB and Proparco, DEG and FMO together with lending from commercial banks backed by a PRG from IDA. MIGA is also providing political risk insurance to Sithe Global.

46. The 100km transmission line will be financed by the public sector lending arm of AfDB, with construction management oversight carried out by BEL. The transmission line will be owned and operated by UETCL.

### *B. Institutional and Implementation Arrangements*

1. The proposed Project will be implemented by BEL, a special purpose company incorporated as a private limited liability company under the laws of Uganda, to develop, finance, build and operate the Bujagali Hydropower Project on a Build-Own-Operate-Transfer basis. BEL will sell electricity to UETCL under a 30-year PPA. The construction of the project will be carried out by an engineering, procurement and construction (EPC) contractor (Salini & Alstom) under a fixed price, single responsibility turnkey contract. UETCL, the Ugandan transmission line company will own and operate the transmission lines associated with the Bujagali project which are being financed by AfDB. Under the PPA BEL is responsible for management of the transmission line construction.

## **7. Sustainability**

To a large extent, the sustainability of the project depends on the financial health of the power sector, which needs to generate, inter alia, sufficient revenues to meet the project's capacity payment obligations. The institutional, technical and financial assessments of the power sector and the positive track record over the past five years, demonstrate that the Government has instituted a sound legal and regulatory framework that has been able to withstand major trauma due to massive load shedding. The ERA has also implemented substantial tariff increases to cope with the current power shortages and consequent reduction in sector revenues, which has helped to maintain the financial viability of the sector. Moreover, the Government has contributed budgetary support to the sector to cover a portion of the costs of thermal generation critically needed to reduce load shedding – a demonstration of the Government's ownership of the power sector reform program and the importance of power to underpin economic growth. In

addition, the concessioning of power distribution facilities to a private operator is expected to improve operational efficiency and performance. Finally, the economic analysis indicates that this project is both overdue and the least-cost generation option for the country, that it is environmentally benign, and that it is affordable to the vastly under-served Ugandan market.

## **8. Lessons Learned from Past Operations in the Country/Sector**

38. The main lessons from the World Bank Group's privately financed operations in the energy sector include the following:

- Major large private investments should complement comprehensive power sector reform program, in order to establish a sound legal and regulatory framework and thus underpin the financial viability and sustainability of the power sector and new investments.
- Financial viability is enhanced by commercializing power sector operations and promoting private participation in the management, investment and ownership of distribution facilities.
- World Bank Group support helps to mobilize long term private sector financing for large capital intensive projects (and on better terms), by mitigating political risks for investments in developing countries in which the power sector has not yet developed a consistently long and positive track record.
- Investment decisions should be made based on their technical, financial and economic merits, consistent with macro-economic and sector development objectives; and
- The need to ensure an equitable distribution of risks between the various parties (the Government, the private sector, commercial lenders and stakeholders/consumers) in private sector projects.

44. In addition to the above, there are a number of specific lessons learned from the collapse of the Bujagali Hydropower Project supported by the World Bank Group in 2001. They include the importance of:

(a) A strong project sponsor group and a robust financing plan (the export credit agencies unexpectedly pulled out of the 2001 project one month after the IFC/IDA joint Board presentation). The current project has been designed as a Public/Private Partnership (PPP). An important share of the project is expected to be financed by the multilaterals (European Investment Bank (EIB), African Development Bank(AfDB) and World Bank Group). The Power Purchase and Implementation Agreements have been signed by the parties. The sponsors have posted a bid bond to confirm their financing commitment. IFC is a shareholder in IPS. The World Bank Group is satisfied that the joint venture (IPS/Sithe) has the ability to successfully manage the technical and financing aspects, as well as project implementation.

(b) The adoption of transparent and competitive process for both the selection of the project sponsor as well as for the procurement of civil works and electro-mechanical equipment contractors. In this case, the sponsors were selected by GoU following an international competitive bidding process as well as the EPC Contractor; the latter was conducted according to EIB's procurement rules. In addition, the Project Company has implemented a "Code of Conduct" for its operations and the activities of the EPC contractor. The project sponsors have also established a comprehensive monitoring and compliance plan to ensure that the Project Company (established by the sponsors) and the EPC contractors adhere to the highest standards of governance.

(c) Ensuring the efficient operations of the power sector's distribution business including improved quality of supply and access. UMEME, the private distribution concessionaire, has been managing and operating the power distribution facilities since March 2005. In spite of the lack of power available for sale and significant tariff increases, performance improvements have been made in collections and in system loss reduction. UMEME has committed to invest US\$65 million in system improvements over the next 3 years (of which US\$10 million has already been made). A financially viable distribution business will over time help to mitigate the perceived risks of future private investors since this is the primary source of the power sector's cash flow and is a crucial aspect upon which investors will assess the power sector's capability to repay new investments.

(d) Inspection Panel Findings and Recommendations of 2002. The World Bank Group's due diligence has taken note of the issues raised by the Inspection Panel in its report of May 23, 2002 and Management's Response and Action Plan dated June 17, 2002,. This includes undertaking comprehensive Strategic Sectoral Environmental Assessment and Cumulative Impacts studies, following the Bank's disclosure policies, adequate stakeholder consultations, adhering to the Bank's operational procedures and policies with regard to the economic and risk analyses, as well as the examination of investment alternatives such as geothermal activities.

## 9. Safeguard Policies (including public consultation)

<b>Safeguard Policies Triggered by the Project</b>	Yes	No
<a href="#">Environmental Assessment (OP/BP 4.01)</a>	[X]	[ ]
Natural Habitats ( <a href="#">OP/BP 4.04</a> )	[X]	[ ]
Pest Management ( <a href="#">OP 4.09</a> )	[ ]	[X]
Physical Cultural Resources ( <a href="#">OP/BP 4.11</a> )	[X]	[ ]
Involuntary Resettlement ( <a href="#">OP/BP 4.12</a> )	[X]	[ ]
Indigenous Peoples ( <a href="#">OP/BP 4.10</a> )	[ ]	[X]
Forests ( <a href="#">OP/BP 4.36</a> )	[X]	[ ]
Safety of Dams ( <a href="#">OP/BP 4.37</a> )	[X]	[ ]
Projects in Disputed Areas ( <a href="#">OP/BP 7.60</a> )*	[ ]	[X]
Projects on International Waterways ( <a href="#">OP/BP 7.50</a> )	[X]	[ ]

## 10. List of Factual Technical Documents

### Environment:

1. Agreed Curve -- Letter dated May 12, 1991 from the Government of Egypt.
2. Letter from the government of Egypt on May 15, 2006 to GOU giving it's no objection to the new Bujagali project proposal.
3. Copy of the Riparian Notifications regarding the intended development of Bujagali II that were sent by the GOU to all other Nile Riparian states in September 2006.
4. Strategic/Sectoral, Social and Environmental Assessment of Power Development Options in The Nile Equatorial Lakes Region, Final and dislosed report prepared by SNC-Lavalin for the NBI.
5. Social Environmental Assessment report for the Bujagali Hydropower Project (HPP) prepared by: R.J. Burnside International Limited; (disclosed final report December 2006); (Report includes also all relevant Resettlement Action Plans).

\* *By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties' claims on the disputed areas*

6. Social Environmental Assessment report for the Bujagali Interconnection Project (IPP/ Transmission Line) prepared by: R.J. Burnside International Limited; (disclosed final report December 2006) (Report includes also all relevant Resettlement Action Plans).
7. Documentation on Kalagala Offset -- April 2001.
8. The Kalagala Offset Agreement-Government of Uganda-July 2001 (update on this expected shortly).

Economic:

9. Bujagali II – Economic and Financial Evaluation Study prepared by Power Planning Associates Ltd. (Final report dated and publicly disclosed by IFC on February 26<sup>th</sup>, 2007).
10. Strategic/Sectoral, Social and Environmental Assessment of Power Development Options in The Nile Equatorial Lakes Region, Final and disclosed report prepared by SNC-Lavalin for the NBI.

Technical:

11. Technical Project Review and Assessment Report, prepared by Colenco Power Engineering Ltd.; Draft Report February 2007.
12. Bujagali Hydroelectric Power Project Transmission Interconnection Study Economic and Risk Analysis, prepared by Siemens Power Transmission & Distribution, Inc.; Final report July 2006.

Financial:

13. Lenders' Financial Model.
14. Uganda Power Sector Financial Model; prepared by an independent Consultant for IDA.

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