A Case Study of Bujagali Hydropower Public Private Partnership Project Between Uganda Government and Bujagali Energy Ltd in Electricity Generation in Africa

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Abstract

Public and private partnership in Africa is a new growing arrangement between the African governments and the private sector in provision of public service including public infrastructure and related services aimed at obtaining better quality services at competitive, employ public sector enterprise and finance when beneficiaries reduce cost, delivery time, and risks inherent in infrastructure projects development and service delivery. My paper will discuss a case a case study of Bujagali Hydropower Public private partnership project between Uganda Government and Bujagali energy Ltd in Electricity generation in Africa, genesis of PPP in the world and all critics to this case project intended objective in electricity generation, social, economic environmental and political critic of the project, its financial and stakeholder success, conclusion and recommendation for future projects of in the same model for future African electricity generation projects.

Keywords: Hydropower Electricity Generation; Public Private Partnership; Africa

1. Introduction

One of the most significant and interesting global economic developments of the past few years is the emergence of Africa as a competitive region for business. Africa is the fastest reformer in terms of easing business entry. [1] It is now easier for private foreign firms to do business in Africa, due to recently simplified business regulations, strengthened property rights, eased tax burdens, increased access to credit, and other economic reforms. African countries are diverse with respect to their politics and economics. The risks of doing business may vary in their nature and intensity from country to country. These risks may emanate from the region’s poverty, numerous conflicts, corruption, and health problems, or from the lack of adequate infrastructure. Risks also present opportunities for example; infrastructure projects are often open to foreign
participation. Moreover, many risks can be mitigated through bilateral official insurers (for example, OPIC), multilateral insurers (for example, MIGA) and private risk insurers (for example, AIG). Africa has provided the stage for PPP in such sectors as utilities, energy, minerals, health, tourism, and others for development. In Uganda in specific, the government adopted a policy in 2010 involving private sector in provision of public service including public infrastructure and related services aimed at obtaining better quality services at competitive, employ public sector enterprise and finance when beneficiaries reduce cost, delivery time, and risks inherent in infrastructure projects development and service delivery. Due to the introduction of this policy below are some of the overall ongoing PPP projects in Uganda

- Construction of Bujagali power dam
- Kalangala Infrastructure Services Project
- Electricity for Rural Transformation (ERT) project-Management of power lines and distribution
- Nakawa-Naguru housing project
- Provision of Education services (UPE, USE)

My work will focus on Bujagali Hydropower Project as selected case of public-private partnership between Uganda government and Bujagali Energy Ltd (BEL), the government of Uganda, including the Ministry of Energy and Mineral Development (MEMD) and Uganda Electricity Transmission Company Ltd (UETCL) following the Uganda electricity act. [2]

1.2 Theoretical frame work: Stakeholders’ theory

The stakeholders’ theory according to author [3], identifies four major stakeholder groups to include main shareholders, employees, customers, and the general public, The ‘stakeholders’ are those groups without their support, the organization would cease to exist and it may equally mean any group or individual that can affect, or is affected by, the achievement of the organization’s purpose. While building on this theory, authors in [3] identified and put forward three forms of stakeholders’ approaches namely descriptive, normative, and instrumental stakeholder approaches. According to author in [4] the descriptive approach emphasizes understanding the relationship between an organization and its stakeholders while the normative approach emphasizes that organizations should take all stakeholders into consideration, as a moral responsibility. Since the 1990s, this theory has gradually improved and has even provided a theoretical framework to identify and analyze the influence of organizational behavior. It has been extensively applied in business management, investment program analysis, program management and so on. It has even evolved into a popular analysis tool in the field of development. Author in [5] assert that it is helpful to introduce the Stakeholder Theory to the Public Private Partnership project, and to use it as a basis to choose decision-making criteria. Specifically, it helps analyze demands of different stakeholders, ensures that profits are proportional to investments and risks. To some extent, it stimulates stakeholders to actively cooperate with each other, especially in public investment programs aimed at offering government public service, all of which should be directed by the stakeholder theory. One of the critics of stakeholder’s theory is that it does not make a clear distinction between enterprise and corporation but just dramatically overstates the separation of ownership and control, generalizing from corporations to all enterprises where author [6] asserts that without clearly providing best practices in harnessing
and harmonizing the different stakeholders interest with harm to stakeholders interest and project time lines. It is therefore difficult to identity which stakeholders’ interest should take precedent especially for an economic project like hydro-electricity generation, with adverse implications on ‘Mother Nature,’ the environment.

1.3 PPP Conceptual Development and Nature

There are many definitions of PPP. Most versions of PPP are very similar, although the degree of control shared by the partners, and several other characteristics of the partnership may receive different emphasis from definition to definition. Thus, PPP is an “arrangement in which the private sector supplies infrastructure assets and services traditionally provided by governments” as quoted by author in [7]. Other terms for PPP include: PPI (private participation in infrastructure); PSP (private sector participation); in the UK, the term used is PFI (private finance initiative); in Australia, the reference is to PFP (privately financed projects); and P3 is commonly used in the US as discussed by author in [8]. Other variants include the build–transfer–lease (BTL) and build–own–operate–transfer (BOOT) options. In some cases, two or more of the above terms can be used in combination. For example, project financing can be used for PPP projects, thus clarifying a key element of the partnership, financing. Project financing schemes may involve a variety of instruments such as the special-purpose vehicle (SPV), a legal entity with its own assets and obligations. Creation of this joint venture among project sponsors enables the flow of funds. An SPV is typically a highly leveraged company, with limited-recourse debt and limited equity participation. PPP can indeed be very complicated, and requires thorough analysis of associated terms and conditions.

1.4 Problem of study

The continuous constraint of various government that eventually handicap them from supplying the social economic infrastructure needed to gratify the increasing demand for survival needs of its citizens probe the necessity of collaboration between public and private sector to develop means of fulfilling these needs, however the ability to ensure the win-win strategy fail most times at cost of the public sector, citizen or private sector and this remain a problem to ensure equal again of all parties inspite of public sector’s continuous engagement of private sector in several PPP projects with each needing specific essentials that are less considered in the implementation process, this remains a serious problem to be addressed in order to ensure equal gain for all parties as discussed in my case study of Bujagali hydro project in this work.

1.5 Objective of Study

It is of prior interest to investigate the advantages and disadvantages, effectiveness in the practice of Public private partnership for development in African Hydro power generation as well as to observe with critics of the PPP arrangement in the selected case study of Uganda, and suggested recommendations for future PPP projects success in Uganda.

1.6 Limitation of Study
This study is limited to the discussion of the overall PPP development and implementation, with a specific case study of Bujagali PPP hydro Power generation project implementation in Uganda and its position in meeting its objectives in Uganda

1.7 Methodology

This study relies significantly on secondary data gathered from the library such as books, articles, international and domestic instruments, internet sources and the writers’ observation from the various implemented projects through PPP partnership in Uganda.

1.8 PPP: Some Advantages and Disadvantages

PPP is part of the recent movement of “new public management.” PPP is a means through which the two sectors can become interdependent. Managers in each sector must independently answer some basic questions: Why are we participating in this partnership? Where are we going to operate? Who are our partners? How are we going to proceed? What is our exit strategy?

According to author in [9], he suggested Specific benefits for the public sector as ones that include:

- Reducing project costs and time, while enhancing its overall efficiency and effectiveness;
- Enabling access to and learning from private sector resources, technology, and managerial skills;
- Credit enhancement and, consequently, access to long-term financing;
- Shifting of risk to the private sector;
- Pursuesing an integrated approach to project completion;
- Involving participation from various partners, and may legitimize the project in the eyes of the citizenry, and other stakeholders;

PPP may provide greater economic benefits than other forms of cooperation, such as public sector Procurement. These extra benefits are usually referred to as value for money enjoyed by the citizens

For the private sector participant, the analysis is based on the profitability of the project in terms of dollars and cents, and is usually more objective than that conducted by the public sector. Participation in a given project can be analyzed using standard finance tools. These projects usually involve a great deal of risk, but government backing and involvement of international financial institutions help mitigate risks. The limits of risk return tradeoffs, and the ensuing risk allocation, are even more crucial factors leading to project assessment. A great deal of emphasis is placed on risk management, including the formulation of an exit strategy.

PPP also involves potential disadvantages such as entailing considerable agency costs, as it must be thoroughly cultivated and managed in terms of planning, monitoring, and acceptance of loss of some control. Private and public sectors often have different goals, and organizational philosophies and cultures. Reconciling these differences in order to bring about the desired project results requires a strong commitment, and a clear vision regarding expectations and outcomes.
The above are especially relevant to public authorities in emerging markets. Author in [10] notes that these emerging markets are so diverse and the analysis of each must be adjusted to fit the particular country’s environment.

2. Case Study of Public-Private Electricity Generation Partnership project in Uganda

Bujagali Hydropower Project, Uganda

2.1 Introduction

The Bujagali Project was a private power generation project. The 250 MW run-of-the-river hydro-electric power plants was under construction on the Victoria–Nile on Dumbbell Island, Jinja, Uganda. The project achieved its financial closing in December 2007, and was commissioned in 2011. Bujagali was the first independent power project (IPP) in Uganda, and the largest mobilization of private financing for a power project in Africa[11]. It was named “Africa Power Deal of the Year 2007” by Project Finance magazine. Initiation and implementation of this project made it good example of how various international financial institutions could work together with private sector project sponsors to address their financing and risk mitigation concerns, and meet the client country’s economic objectives in this generation of electricity through PPP scheme as specified for Uganda for development. It should however be noted that Uganda’s electricity production has more other sectors than generation of electricity but also continuously seek for private sector involvement in other sectors of electricity provision such as transmission and distribution as elaborated in the diagram bellow figure 1;

Figure 1; Structure showing Uganda’s varying sectors where Private sector involvement is invited for by the government in generation, transmission and distribution of electricity

![Diagram of Uganda's electricity sectors](source IFC, 2007)
2.2 Justification, relevance of PPP as a financial soliciting choice and success in Uganda’s Electricity generation sector as well as all involved stakeholders

According to the author in [13] they note that the severe shortage of electricity in Uganda contributed to a decline in GDP growth to around 5% in 2005/06 mentioning that Bujagali is an essential part of Uganda’s energy sector strategy which was aimed at providing a sustainable and affordable source of electricity to Ugandans. The government of Uganda, however, lacked the necessary technical expertise and financing to initiate, implement and complete the project on its own. Private sector participation was sought to fill the gap as the only alternative in form of Public private partnership for development.

Project Partners of this Bujagali project of electricity generation was under a public–private partnership between the private sector project sponsors represented by BEL, the government of Uganda, including MEMD and UETCL, multilateral and bilateral development financial institutions,[14] and commercial lenders, including Absa Capital (South Africa) and Standard Chartered Bank (UK). BEL, a special-purpose company (SPC), is incorporated in Uganda, and is privately owned by Industrial Promotion Services (Kenya) Ltd (IPS (K)), the industrial development arm of the Aga Khan Fund for Economic Development (AKFED) and SG Bujagali Holdings Ltd (Mauritius), an affiliate of US-based Site Global Power LLC. The sponsors were selected through international competitive bidding procedures in order to meet the required financial necessity of generating electricity that the government of Uganda could not accumulate in order to implement without seeking for private sector involvement.

2.3 Bujagali Public-Private Partnership selected model for electricity generation.

The Bujagali project was developed, financed, constructed, and maintained by BEL on a BOOT (Build Own – Operate and Transfer) basis. BEL also manages the construction of the Interconnection Project on behalf of UETCL, which was to own and operate the project. The Interconnection Project involved the construction of about 100 kilometers of high voltage electrical transmission line to interconnect the power generation facility (the Bujagali project) to the national electric grid. Structured as IPP, BEL then was to sell the electricity to UETCL, under a 30-year Power Purchase Agreement (PPA).

2.4 Bujagali PPP electricity generation Project structure and Financing success

According to the Uganda Ministry of energy report in 2007, Finance for the project was structured as an integrated package for both the power plant and transmission components. The total cost for the integrated projects, was about $800 million, which was mobilized on a limited recourse basis, through equity and debt in the ratio of 22:78. The government of Uganda provided an in-kind equity contribution of $20 million. [15] The equity financing was shared by the sponsors, IPS (K) and SG Bujagali Holdings Ltd, on a pro rata basis. The equity structure of BEL was complex. Figure 2 provides a simplified description of the hierarchy.

*Bujagali PPP contractual Structure operation and funding:*
The debt was being financed by loans from the group of lenders, the World Bank group providing a far more substantial amount of $360 million ($130 million loan from IFC, $115 million partial-risk guarantee from International Development Association to commercial lenders, and $115 investment guarantee from Multilateral Investment Guarantee (MIGA) to cover the equity position of SG Bujagali Holding Ltd).

2.5 Bujagali PPP contractual Arrangements, Traditional risk evolution and sharing mechanism conceptual framework in all PPP schemes

These contractual agreements and derived structure in figure 2 above defined the transactions and allocation of the commercial, technical, and political risks among the partners. The contractual structure of the Bujagali project was consistent with industry practice for limited-recourse project finance transactions.

Author in [9], states that, this project implementation agreement, which is also called the concession agreement, was signed between the government of Uganda and BEL on December 13, 2005, defining the terms of the concession the government grants to BEL to design, finance, own, operate, and maintain the project. Under the 30-year PPA, BEL agreed to sell exclusively to UETCL all the production, and UETCL agreed to purchase the contracted capacity (i.e., 250 MW), with the government guaranteeing the UETCL’s payment obligations. In addition to the implantation agreement and PPA, BEL signed a fixed price; date certain, turnkey engineering, procurement, and construction (EPC) contract with Salini Costruitori SpA (Italy), and Alsthom Power.
Hydraulique (France), and an operation and maintenance (O&M) agreement with affiliates of Sithe Global. The EPC contract required the power plant to be commissioned within 44 months.

The EPC contractors were selected through competitive bidding, in accordance with the EIB procurement rules. The O&M agreement reflected BEL’s commitments under the PPA. Own, operate, and maintain the project. The EPC contractors were selected through competitive bidding, in accordance with the EIB procurement rules. The O&M agreement as stated above reflected BEL’s commitments under the PPA as explained by author in [14].

The contractual structure ensured that the project-related risks, including completion and operation, are borne by the project sponsors and commercial lenders. These risks for traditional PPP schemes flow as shown in common PPP scheme in structure figured 3 bellow. These risks however were mitigated by contracts and various insurance arrangements. The risks related to supply/input (hydrology risk), market, political, and natural forces were borne by the government of Uganda under the government guarantee and implementation agreements. The participation of the IFC and the guarantees provided by the World Bank group (IDA and MIGA) are critical in mitigating the completion risk, and to provide Uganda with access to long-maturity commercial loans in favorable terms.

**Evolution of risks apportioning and mitigation; a conceptual framework in traditional PPP schemes risk sharing**

![Conceptual Framework](source IFC, 2007)
2.6 Criticism about Bujagali Hydropower Project in Uganda

According to Corporate Operational Plan of 2010, the Bujagali PPP project, which was contested for years and commenced in April-May 2007, a year when the plaintiff’s engagement with the project started. On 5 March 2007, the National Association of Professional Environmentalists (“NAPE”), other Ugandan citizens and local organizations filed a complaint with the World Bank Inspection Panel, raising concerns about Environmental issues, Hydrological and climate change Risks, Involuntary resettlements, Cultural and spiritual values [14].

In specific, the project was to benefit more than 5% of the population however less than 5 percent of the Ugandan population was connected to the electricity grid since the project main objective was not transmission line extension but rather to generate electricity with its agreement to sell exclusively to UETCL all its production, where UETCL agreed to purchase the contracted capacity (i.e., 250 MW), with the government guaranteeing the UETCL’s payment obligations delayed by its slow operation and less tasking engagement of parties than BEL who focus mainly on generation in the expected results hence limiting the transmission of electricity to the number of people expected, especially in rural areas. According to the European Investment Banks in 2007, it stated that the project was to contribute to make electricity affordable, however Ugandan Energy Minister Hilary Onek himself in 2009 argued that the Bujagali project was a bad one, over delayed and overpriced and could not lower electricity tariffs but rather lead to higher electricity prices in the country for the future.

2.6.1 Technical critic of expected output and actual output of Bujagali Hydropower Project

According to the European Investment Bank, the Bujagali dam was expected to have a generating capacity of 250 MW, so as to meet the current electricity shortfall and the growing future demand in electricity in Uganda as reported from EIB news in 2007. However there was no enough water to sustain and ensure that the project would generate its designed capacity of 250MW and due to the decline in water of the Victoria Lake it has continuously contributed to the inefficiency of the dam. The same mistake was made in the generation construction and implementation of Nalubaale and Kiira dams which were expected to produce up to 380 MW. Yet their current average output ranges between 110 and 135 MW this made the PPP scheme objective of capacity of the Bujagali PPP project challenged and more challenged as noticed today by the daily reduction of water levels and lower generating capacity than that expected.

2.6.2 Environmental, economic and Political impact of the Bujagali Hydropower Project

The World Bank Inspection Panel Report confirmed in its report 2010: That the project's economic viability was overestimated in relation to hydrological risks [14], that the impacts of the project on the changing levels of Lake Victoria were not assessed [18], that the project preparation and assessment reports did not address climate change and its possible impact on power production at Bujagali [19] and

no corrective actions were identified by the World Bank management in response to the Panel's findings. Furthermore the Bujagali falls was completely submerged by the dam's reservoir by drowning Bujagali Falls a
spectacular series of cascading rapids which Ugandans consider a national treasure with great cultural and spiritual importance for the Busoga people.

Against that undisputable environmental and economic loss there was no reliable information on the real generation capacity of the dam. There is no comprehensive cost benefit analysis. The World Bank Inspection Panel further found, in this respect: that the environmental assessment was not conducted in a fully adequate manner [20] that the impact of the Project on the Lake Victoria was not assessed [21] that economic and environmental alternatives to the Project were not or not properly analyzed and considered [22]

2.6.3 Social critic of the Bujagali Hydropower Project

The World Bank Inspection Panel as one of the stake holders of risk mitigation further found, in this respect: that the social assessment was not conducted in a fully adequate manner. [23] The Bujagali PPP scheme according to them found many policy violations with regard to the Social impact to the communities and peoples way of life mainly in regards to settlement resettlement process [24], as discussed below;

There was improper consultation of affected communities and inaccurate assessment of social impacts and mitigation measures. The Bujagali Falls are an important cultural and spiritual site with Jajja Bujagali as the 39th cultural and spiritual leader, tens of thousands of followers, including people from other areas like Kampala, Jinja, and Mukono, no proper consultation ever took place with him as the spiritual community leader of Bujagali Falls. Instead, he was marginalized from the process, and a fake resettlement ceremony was organized with the complicity of the Government of Uganda. As a result, no proper spiritual resettlement ever took place.

Lack of communication with affected people to address the concerns of the displaced persons with regard to commitments made by Private company in the PPP scheme has been failure to provide adequately for loss of livelihood associated with the loss of fishing and agriculture since all of the families drew their income from fishing. Due to the resettlement, the 11 People lost their main source of both food and income. AES contracted local company in management of social effects of the dam by the private sector which had promised to build a fish pound, but BEL main partner in the PPP scheme and its contractor refused to do so leaving many with no jobs and no income up to date.

Absence of focus on vulnerable people, who over 150 families were evicted due to the PPP project of electricity generation and dam construction, 38 of them were resettled in Naminya. The rest chose to be compensated and settle elsewhere 7 years after the resettlement took place, many of the agreed upon obligations by BEL were not implemented in terms of access to electricity and water, employment, market, construction of new schools, boats and nets supply to the resettled people.

However according to the Appraisal Report of Bujagali Hydroelectric Project of 2007, it argued in defense of the project achievement and refuted all of critic’s form the World Bank towards the project arguing that all social, political, environmental critics towards this hydrogenation Project where maintained. The Directorate’s Appraisal Report asserted that the PPP project objectives were in line with the environmental, social impact and
the general soundness of the project as planned by it and the government of Uganda. Furthermore argued that the world bank seemed to have relied largely on the assessments carried out under the supervision of the promoter and national authorities. While the report addressed the above raised concerns, it dismissed all of them and finds the environmental, social impact assessment satisfactory and the project sound and acceptable. These conclusions are, however, contradicted by the findings of the World Bank Inspection Report which suggests that the Bank failed to check and make a proper assessment of the soundness and the acceptability of the project in environmental and economic terms.

3. Conclusion

I hereby concluded that PPP can offer a win–win situation for both the public and the private sectors in electricity generation basing on this case study. Furthermore it should be noted that with globalization there has come an emergence of new economies with scarce resources where by the public sector in many economies needs private sector partners. PPP has proved to be a unique opportunity for the two diverse sectors to learn how to work together as evidenced in my Ugandan case of electricity generation. For the public sector, shifting risks and securing financing are important benefits. Just as it is observed for the private sector, that the environment represents an opportunity to add value to the organization, and act in a socially responsible manner. PPP involving of complicated arrangements that require a great deal of expertise and flexibility, the following are paramount in strategizing; risk allocation, preparation, proper risk management and pricing. Basing all the preceding argument it should be noted that the involvement of Bujagali Energy Limited despite the challenges and critics proved to be a success in generation of electricity in Uganda and this gave the public sector a success story to solicit for more Private sector involvement of private sector in public projects to supplement the limited resources available for government such as technology, finance and management in supplying the required public interest utilities for consumption of all kind to its citizen’s survival however the need for political will and society sensitization on the PPP arrangement for Bujagali hydroelectricity project operation remains to be some of the greatest challenges to calm the negative impacts of the project to social lives of people to support it to be more success in the future and all the various schemes with in Africa and Uganda in specific. This has to be transformed to ensure a favorable PPP environment and transfer of utility in arrangement such as BOOT arrangement of Bujagali project to ensure the continuous government ability to keep the standard of the generation plant as may have been operated by the private partner with total support of the citizens.

4. Recommendations

To ensure efficiency of future power generation and other PPP project implementation by the Ugandan Government, I am in agreement with authors in [14] and [15] who states that the following should be considered to have a success full PPP project;

- Conducting a readiness analysis of private sector organization in the area of Government interest to invite private sector.
- Knowing exactly what the government want and expect from the arrangement or scheme.
- Knowing what the various partners want and expect to provide.
Working to build trust among partners in the initiation, implementation geared to finalization of the PPP project.

Putting together a solid risk management process, with clear accountability and understanding of the risks faced how they are allocated, and how risk is to be priced.

Being as specific as possible about Public sectors role and responsibilities as well as that of private sector.

Familiarizing public sector (government) with the nature and operations of international financial institutions and agencies, such as the World Bank, its affiliated agencies (IFC, IDA, MIGA), and other cooperating organizations.

Making sure government do a feasibility study and conduct due diligence.

Going slow! Learning about PPP is important. Utilizing existing relationships to serve as an easier first step.

Deciding on what valuation techniques could be appropriate (for example, internal rate of return, net present value, adjusted present value, and real options).

Analyzing all possible scenarios to enter into the Public private sector in this case for electricity generation as well as reviewing and revising them as appropriately as possible.

And lastly working towards a sustainable relationship, but also having an exit strategy such as proper ensured cooperation of BOOT of 30 years between government and Bujagali energy limited as discussed in the case study after which the generation plant will be transferred to the public sector.

References


