Uganda's power sector reform: There and back again?

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ABSTRACT

Uganda occupies a unique space in the history of power sector reform and private electricity investment in Africa. In this article, we describe the drivers for reform as well as the reform process, including the main institutions involved and the legislative and policy instruments that helped shape them. We then offer a brief history of independent power projects (IPPs) in Uganda and emerging Chinese-funded projects, exploring the nexus between the two. Like any other private investment, IPPs require a suitably enabling environment offering long-term investment certainty. Our primary objective is to assess the experience of Uganda's IPPs and consider what might help accelerate private investment in the country's electricity sector. Finally, we attempt to extract the policy lessons that may be learned from this fascinating story.

Introduction

For several decades, Uganda suffered from inadequate power supply. Civil war (1971–1986) and declining water levels in Lake Victoria, the primary reservoir for Uganda's hydro-based electric power system, made this problem worse, causing a 60% decrease in the country's available generation capacity (of less than 500 MW), and access rates at just 7% (ESMAP, 1999: 11; World Bank, 2017a). To deal with this crisis, starting in the late 1990s, the government embarked on the most ambitious power sector reform program as yet seen in Africa (Kapika and Eberhard, 2013: 85). To deal with this crisis, starting in the late 1990s, the government embarked on the most ambitious power sector reform program as yet seen in Africa (Kapika and Eberhard, 2013: 85). To deal with this crisis, starting in the late 1990s, the government embarked on the most ambitious power sector reform program as yet seen in Africa (Kapika and Eberhard, 2013: 85).

Uganda was the first African country to unbundle its generation, transmission, and distribution utilities, and offer private concessions for power generation and distribution. Its 250 MW Bujagali independent power plant (IPP) ranks among the largest privately financed hydroelectric power projects in sub-Saharan Africa, and its 50 MW Tororo-Electro-maxx Thermal plant is often considered the first indigenous African IPP, financed built and operated solely by African companies. Despite concerns that the country's power system was too small or are in the process of being built, with installed capacity reported as 857.5 MW (ERA, 2017). Included among these plants are several small hydro, biomass, and solar projects implemented under the government's co-operation with the German development bank KfW. Furthermore, additional renewable projects developed by IPPs with an accumulated capacity of up to 150 MW have reached financial close.⁹ Alongside these private-sector successes, Uganda has two large Chinese-funded hydropower projects currently under construction, which were expected to start commercial operations from 2017/18, though presently are delayed and will likely be commissioned in 2018 and 2020 respectively (Eberhard, Gratwick, Morella, & Antmann, 2016).

The process has not, however, always been smooth. In 2006, for example, the country faced a severe power supply shortage, necessitating emergency power installations. In 2008, the government and the major distribution utility entered a dispute over their contractual obligations. In 2009, a new energy minister, backed by several parliamentarians, tried to reverse a number of the 1999 reforms, but was eventually convinced to back down. During the same period, anti-fraud investigations, allegedly targeting inflated power prices, led to raids of nearly all power sector institutions (Kapika and Eberhard, 2013: 103). Even now, private investment in the power sector tends to be politically contested. The tedious coordination efforts and transaction costs occasioned by the multitude of financiers involved in the Bujagali plant apparently left a lasting impression on Ugandan government officials, who often see private sector involvement as more costly, complex, and time consuming than government procured projects.

In addition, a raft of smaller and medium-sized plants have been or are in the process of being built, with installed capacity reported as 857.5 MW (ERA, 2017). Included among these plants are several small hydro, biomass, and solar projects implemented under the government's co-operation with the German development bank KfW. Furthermore, additional renewable projects developed by IPPs with an accumulated capacity of up to 150 MW have reached financial close.⁹ Alongside these private-sector successes, Uganda has two large Chinese-funded hydropower projects currently under construction, which were expected to start commercial operations from 2017/18, though presently are delayed and will likely be commissioned in 2018 and 2020 respectively (Eberhard, Gratwick, Morella, & Antmann, 2016).

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Losses are down; collections, investment, connections are up and access rates presently stand at 20% (Kapika & Eberhard, 2013; World Bank, 2017a).

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1 Megawatt and dollar figures in this article are based on the date of financial close.
Uganda offers considerable experience in relation to power sector reform, private sector participation, competitive bidding, grid-connected renewable energy, and Chinese-supported projects. In this article, we describe the drivers for reform as well as the reform process, including the main institutions involved and the legislative and policy instruments that helped shape them. We then offer a brief history of IPPs in Uganda and Chinese-funded projects, including the nexus between the two. Like any other private investment, IPPs require a suitably enabling environment offering long-term investment certainty. Our primary objective is to assess the experience of Uganda’s IPPs and consider what might help accelerate private investment in the country’s electricity sector. Finally, we attempt to extract the policy lessons that may be learned from this fascinating story and outline future trajectories for Uganda’s power sector development.

Data sources

The IPPs discussed in this article are greenfield, grid-connected installations of approximately 5 MW or more, that have reached financial close, are under construction, or are in operation.2 A significant amount of data on these installations was collected and analysed. The World Bank’s Private Participation in Infrastructure (PPI) database, AidData, and the China Africa Research Initiative (CARI), 2016 project database were our starting point. In addition, we reviewed annual reports and web sites of Uganda’s regulator (ERA), utilities (ESKOM Uganda, UTCON and UMEME) and independent power producers, as well as relevant press reports and news articles. Finally, we consulted stakeholders within each of the relevant organizations (between 2015–2017 in person and via email), including the GETFiT Secretariat, where one of our authors was based at the inception of the research. Information concerning the composition of investments by funding source, the terms of IPP contracts (which remain mostly confidential) and the size, composition, and types of investment from emerging financiers (notably China) was gathered from the abovementioned sources and reconfirmed by at least one additional source. Due to the sensitivity of some data, the names of stakeholders have been excluded. Although an unprecedented amount of data was collected and analysed, certain limitations are noted. Because nearly every Chinese-funded generation project3 is directly negotiated with the relevant government agency, limited public data are available. Additional interviews were conducted by authors, and actual projects were verified with stakeholders in Uganda and abroad.

Drivers for reform: a survey of relevant literature & methodological approach

Virtually all major power generation throughout Africa, including in Uganda, was financed by public coffers, including concessionary loans from development finance institutions (DFIs) at the beginning of the 1990s. Publicly financed generation assets were considered core elements in state-owned, vertically integrated power systems (Yergin & Stanislaw, 2002). Over the course of the 1990s, however, a range of factors caused this to change. The main drivers were identified as insufficient public funds for new generation and decades of poor performance by state-run utilities (Bacon, 1995; Besant-Jones, 2006; Jhirad, 1990; Kessides, 2004; Moore & Smith, 1990; Victor & Heller, 2007; Wolak, 1998; World Bank, 1993). Subsequently, African countries

2 A complete list of IPPs may be found in Appendix A.

3 The typical project structure of most Chinese-funded generation projects: (of which there were 34 across Sub-Saharan Africa between 1990 and 2014 totaling 7.5 GW) involves a contractor plus a financing contract. The majority of these projects receive funding from the China Exim Bank (responsible for soft loans and export credit) on behalf of the Chinese government. Additional finance is provided by other banks (such as the China Development Bank, the Industrial And Commercial Bank of China, the China Construction Bank, and the Bank of China), owned in whole or in part by the Chinese government (Eberhard et al., 2016).

4 In Kojima and Trimble (2016), out of 22 Sub-Saharan African countries, 16 countries rank less expensive than Uganda in terms of monthly bill for 30 kWh.
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