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ELECTRICITY SUPPLY INDUSTRY OF ZAMBIA

General Information for Potential Investors



March 2008

This publication was produced for review by the United States Agency for International Development. It was prepared by the Southern Africa Global Competitiveness Hub as part of its Trade Facilitation and Capacity Building Activities.

INTRODUCTION

Zambia is a landlocked country situated in southern central Africa. It has eight neighbouring countries, Angola to the west, the Democratic Republic of Congo to the north, Tanzania to the northeast, Malawi to the east, Zimbabwe and Botswana to the south, Mozambique to the south east and the Caprivi Strip of Namibia to the southwest. The Zambezi River together with Lake Kariba form the frontier with Zimbabwe.

THE REGULATORY ENVIRONMENT

Zambia is a Republic with nine provinces. The Constitution is the supreme law of the land – all laws are subject to the Constitution. Laws are enacted by the National Assembly. Electricity Supply Industry (ESI) legislation follows Government policy developed by the Minister of Energy and Water Development (Minister) (through the Ministry of Energy and Water Development (MEWD)). Draft laws are approved by Cabinet. Amendment of laws follows the same procedure.

Zambia introduced a new energy policy in 1994 (NEPI 194) setting out the liberalization of the energy sector and ESI. The adoption of the NEPI 1994 was followed by the enactment of the new Electricity Act Chap 433 and the new ERB Act Cap 436 of the laws of Zambia in 1995. The new laws provided for the liberalisation of the power sector and the establishment of an independent regulator.

The Minister of MEWD has executive responsibility for the ESI. The Energy Regulatory Board (ERB) is the independent regulator. It is a multi-purpose regulator, with jurisdiction over electricity (including nuclear, solar and wind), petroleum and petroleum products, coal and its derivatives, firewood, charcoal and other wood derivatives, and uranium and other nuclear fuels. ERB is an autonomous statutory body with perpetual succession.

DISCLAIMER

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.



FACT SHEET: ZAMBIA

Area: 752,614 sq km
Population: 11,669,534
Life Expectancy: 38.59 years
HIV/AIDS: 16.5% (2003 est.)
Literacy: 80.60%
GDP (PPP): \$15.93 billion (2007 est.)
GDP Growth Rate: 6% (2007 est.)
GDP per Capita: \$1,400 (2007 est.)

Major Exports: copper/cobalt 64%, cobalt, electricity; tobacco, flowers, cotton

Major Imports: machinery, transportation equipment, petroleum products, electricity, fertilizer; foodstuffs, clothing

Currency: Zambian kwacha (ZMK)

Exchange Rate per USD: 3,990.2 (2007)



The Energy Regulation Act establishes a licensing framework for the ESI. ERB regulates through licensing of generators, transmitters and distributors of electricity. The Electricity Act provides that an undertaking that wishes to increase or decrease its rated generation capacity, or its contractual rights to purchase electricity from outside Zambia, must obtain approval from the Minister. ERB's main functions are to:

- Issue licences;
- Monitor the efficiency and performance of licensees;
- Receive and investigate complaints; and
- Approve the location of energy infrastructure.

Amendments to the Energy Regulation Act in 2003 introduced certain changes to the governance of the ERB. The ERB is funded by licence fees, although allowance is made for receiving grants or donations from outside sources. The ERB is given the power to promote competition and accessibility in the ESI. The ERB is investigating the liberalization of the ESI as part of its mandate to advise Government on electricity sector reforms.

The Electricity Act provides that no person may engage in the generation, transmission, distribution or supply of electricity unless authorized by a licence issued by the ERB. Certain exceptions are permitted. The ERB is a (founding) member of the Regional Electricity Regulator's Association (RERA).

Zambia is not a signatory to the New York Convention, 1958 (Recognition and Enforcement of Foreign Arbitral Awards) (Date of entry: 3 May 1976). UNCITRAL Rules are generally included in contracts entered into by parties in Zambia.

INSTITUTIONS RELATED TO THE ELECTRICITY SUPPLY INDUSTRY

Environmental matters are dealt with under the Environmental and Pollution Control Act, which establishes an Environmental Council of Zambia (ECZ) to regulate environmental matters. The Energy Regulation Act provides that the ERB must, in conjunction with the ECZ, formulate measures to minimize the environmental impact of the production and supply of energy. Occupational health and safety matters are addressed in the Factories Act, 1966 (which deals with the general health and safety of workers in factories) and the Factories (Electricity Regulations) Act, 1967 (which sets safety standards for the ESI).

The Energy Regulation Act provides that the ERB must, in conjunction with the Zambia Standards Bureau (ZSB), design standards with regard to quality, safety and reliability of supply of energy and fuels.

The Zambia Competition Commission (ZCC) was established by the Competition and Fair Trading Act. ERB must, in conjunction with ZCC, investigate and monitor the levels and structures of competition within the energy sector, and develop appropriate rules to promote competition.

The Zambia Electricity Supply Corporation (ZESCO) is an operating member of the Southern African Power Pool (SAPP) with the obligation to utilize its spare transmission capacity to wheel power for other Operating Members

Local authorities also enjoy certain rights relating to the supply of electricity within their municipal areas. Their consent is necessary where a third party wishes to supply within the local authority area. Where the consent of the local authority is withheld, the ERB has the power to rule on the matter. Currently the Electricity Act gives ZESCO and other licensee's powers to access land and use premises for purposes of efficient electricity supply, subject to approval from the minister responsible for lands, in cases where the landowner refuses permission. Under the Electricity Act, the President of the Republic of Zambia may order the acquisition by compulsion of land for electricity supply purposes where a licensee has, despite reasonable means, failed to acquire a piece of land that is necessary for the purposes of its operations.

ZESCO

ZESCO is the national power utility of Zambia. ZESCO Ltd is a company under the Zambian Companies Act, fully owned by the Government. It was established in 1970, and its governance has evolved over time to an arms-length relationship with Government.

This relationship is defined in a performance contract that was signed between Government and ZESCO in 1996. The contract defines the commercialization issues and other operational benchmarks for ZESCO over the contract period of three (3) years at a time.

The electricity supply in Zambia originated in 1906 when a small thermal station was built in Livingstone to serve a section of the town. The first initiative to coordinate power generation was taken in the early 1950s when at least four stations with a combined 120MW capacity were connected to a central switching station at Kitwe.

The most significant development in the electricity supply situation took place between 1956 and 1962 when the Kariba dam and consequently the Kariba North Power Station were constructed. The Kariba North Power Station was owned and operated by Central Africa Power Corporation (CAPCO) which, in turn, was jointly owned by the Governments of Southern and Northern Rhodesia (presently Zimbabwe and Zambia). This station had an installed capacity of 600MW.

The next major step in making hydro-electric power potential abundant in Central Africa was taken with the construction of Kafue Gorge Power Station to be an alternative to the Kariba scheme. Soon after independence in 1964, the Zambian Government revived the project and preliminary work began in July 1967. The first generating unit was commissioned in 1971 and the project was completed in 1973. The project had an initial capacity of 600 MW using four units but this was later increased to six units with an installed capacity of 900 MW.



In addition to the interconnected transmission system which served the most developed areas in the country ranging from Mongu in the West to Livingstone in the south, Lusaka and Copperbelt in the North, there was need to develop isolated systems in terms of smaller hydro stations at Chishimba falls, Lusiwasi, Lunzua river and Musonda falls.

Isolated diesel power stations were also installed/constructed in various places. Two hydro stations were developed at Mulungushi and Lunsemfwa river to provide reliable power supply for Broken Hill (Kabwe) Copper Mines.

Presently Zambia has more than 1732MW of installed capacity and the maximum demand in 2006 was 1330MW. ZESCO estimates load growth at some 3 to 4% per annum, meaning that Zambia will run out of capacity right about now. In order to meet demand, planned projects include upgrading existing plant and bringing old plant back to original spec (mainly 900MW Kafue Gorge station upgraded to 990MW and 600MW Kariba North Bank station upgraded to 720MW).



PRIVATE INVESTMENT CONSIDERATIONS

Zambia is said to have the most liberalized environment for business in southern Africa. All exchange controls have been abolished. Since 1991, an array of liberal laws has been introduced to encourage private sector participation in enterprise.

Government has managed to attract private investment into the ESI, such as the purchase by the Copperbelt Energy Corporation of the ZCCM Power Division.

An Office for the Promotion of Private Power Projects was created in 1999 as a “one stop” window for the encouragement and development of private sector development in the ESI.

INVESTMENT OPPORTUNITIES

Zambia is blessed with abundant resources, and especially hydropower generation holds huge promises. Pre-feasibility studies have been done for various projects and the Kafue Gorge Lower project could be implemented reasonably soon.

Zambia sells surplus electricity into the region through bilateral contracts and through SAPP. Constraints mainly centre around insufficient capacity of the transmission infrastructure (e.g. for selling into the DRC)

Zambia is potentially rich in sources of renewable energy solar, mini hydro, biomass, geothermal and wind. The solar photovoltaic and mini-hydro present an alternative to providing electricity in remote rural areas. Zambia has more than 80 hot springs which are potential sources of geothermal power. A geothermal plant was installed in 1987 and was not fully commissioned due to lack of electrical reticulation network.

Check list of SAPP projects for possible private sector participation.

Project & Capacity (MW)	Project Description & Status	Expected Date	Project Sponsors & Funders
Kafue Gorge (90MW)	Upgrading from 6x150MW to 6x165MW	2008	ZESCO
Kariba North Bank (120MW)	Upgrading from 4x150MW to 4x180MW. Two units have been upgraded.	2008	ZESCO
Kariba North Bank extension (360MW)	2x180MW additional units. Financing negotiations in progress	2009	ZESCO/Private Partner
Itezhi-Tezhi (120MW)	Project targeting local and export market. Main technical issues agreed. Preparatory works in progress.	2010	ZESCO/Private Partner
Kafue Gorge Lower (750MW)	Earth rock fill type dam proposed upstream of existing station. Targeting local and export market	2012	ZESCO/Private Partner
Batoka (800MW)	4x200MW units on either side of the dam.(1600MW).Project 54km downstream of Victoria Falls. Zambezi River Authority coordinating the project. Inter-government agreement between Zambia and Zimbabwe required before proceeding with project.		No firm investor yet(ZESCO/ ZESA/ZRA)
Kalungwishi (220MW)	New hydro power development. Feasibility studies to be done.	2015	IPP



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