



ZESCO

POWERING ZAMBIA



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Zesco, Zambia's national power provider, has been beset by problems, many of them a legacy of under investment and piecemeal growth: but these are now being addressed head on and state of the art technology is the order of the day

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Cyprian Chitundu,
Managing Director



The first mains electricity that flowed in Zambia came from a small coal fired station in the capital Livingstone, but even that did not cover the entire city.

Zambia had to wait till 1938 to get its first hydro-electric power from that mighty power source, the Victoria Falls. Of course the copper mines needed power, but up to the middle of the last century they had to provide their own generation facilities. This meant that a number of local authorities distributed electricity in their own districts obtaining their supplies in the main from existing power stations. For instance, Livingstone local authorities bought power from the Victoria Falls Electricity Board while Kabwe and the Copperbelt authorities purchased power from the mining companies which they were often able to sell local municipalities. But real consolidation did not take place until the early 1950s when at least four stations with a combined 120 MW capacity were connected to a central switching station at Kitwe.

With the construction of the Kariba Dam and power station in 1962, and the subsequent development of the 990 MW Kafue Gorge power station the copper mines finally had a source of hydroelectric power that was sufficient to supply Zambia's major population centres as well. A power supply network began to extend across the country and today this carries electric power to all but the most remote and inaccessible parts of the country.

Zambia Electricity Supply Corporation Limited (ZESCO) is Zambia's state-owned power company, a business that operates more like an independent company than a government department: adopting the model commonly followed in Africa it is known as a parastatal. So it is governed by a board of directors that is appointed by the government, with wider consultation with stakeholders, and with the participation of the private sector. It is Zambia's largest power company producing about 95 percent of the electricity consumed in the country.

To act as a big corporation in a near-monopolistic industry is a difficult task, admits

Zesco's Managing Director Cyprian Chitundu. The only time the customer really notices their power supplier is when there's a problem, and Zambians are given plenty of opportunity to notice that there are frequent power

outages. This, he says, is because the system is under stress. There is an under-capacity within the country, and rationing has been necessary to ensure that every Zambian who is connected to the grid has a fair share of the available power. To illustrate the situation, national demand for power, at peak times, is more than 1,780 MW: Zesco's total capacity is 1,700 MW, leaving a deficit of around 165 MW, allowing for a safety margin.

But that is no substitute for a reliable and continuous supply, he would be the first to acknowledge. "It is with this in mind that we have adopted an action oriented strategy that will ensure that three years from now the

1,780 MW

Zambia's peak
power demand

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Zambian people will be well catered for and absolutely free of power rationing.” With the government backing it by facilitating external investment partners, this will, he hopes, get a number of projects moving that have been stalled for up to ten years. After all, he points out, the very demand for electricity that is causing supply problems has only come about through Zambia’s economic boom.

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Minister of Finance touring the KNBE project

2012 was a good year for Zambia’s economy. Growth was driven by expansion in agriculture, construction, manufacturing, transport and finance. Economic prospects for the future look positive so long as growth can be sustained and broadened to accelerate job creation and poverty reduction. After a slump in output, copper mining is expected to rebound in 2013, and is projected to reach 1.5 million tonnes by 2015. This is largely due to investment in new mines and the expansion of capacity at existing plants. Robust international copper prices will provide additional stimulus to mining. But that expansion very much depends on the availability of a robust power infrastructure, and that is Zesco’s challenge.

Chitundu has identified eight key factors that need to be addressed as part of the action plan and number one on the list is to put an end to loadshedding, a polite name for sharing out blackouts as a way of keeping the lights on for most of the customers. Among

the remaining objectives are to increase working capital, control costs and increase the customer base. But fairness to the customers is a thread running right through the policy, and one of the key perceived inequitable factors is the non-availability of power in some rural and remote parts of the country.

To address this Zesco is working with the government of Zambia, the United Nations Industrial Development Organisation

(UNIDO) and the Global Environment Facility (GEF), and has embarked on a project to develop isolated mini-hydro power stations to mitigate the power deficit in rural areas. One such project is the one-megawatt Shiwang'andu mini-hydro power project which was commissioned in December 2012.

An important objective of the project was to promote renewable energy based on mini grids for rural electrification in the country.

“THE INVESTMENT IN THE FIBRECOM NETWORK IS A GREAT ACHIEVEMENT BY ZESCO WITH IMMENSE SOCIAL, TECHNOLOGICAL AND ECONOMIC BENEFITS”



Work in progress at KNBE



Kariba dam

The Shiwang'andu project is not connected to the national grid – it is purely a local facility, so the buy-in from the people who will benefit is considerable. The project has created employment opportunities for 70 local general workers. The isolated mini grid will connect to the schools, clinics, lodges and farms which will bring economic development to Shiwang'andu area.

While Zesco is implementing its large scale improvement programme, it is not all about fighting fires. The company recently launched the second phase of its fibre optic network after completing the installation of 5,300 kilometres of optic fibre cable on its high voltage lines. Phase one brought high capacity ICT to 46 towns in every one of Zambia's ten provinces. “The investment in the Fibrecom

network is a great achievement by Zesco with immense social, technological and economic benefits,” said Cyprian Chitundu. Phase 2 extends coverage by a further 4,300 kilometres, with international connections to Tanzania and Namibia. The network is also being equipped with real-time remote surveillance systems, with access control at key installations on the Fibrecom (Zesco's own brand) network. This, says Chitundu, will address the bane of vandalism, which is responsible for many of the outages that the customers currently blame on Zesco. **BE**

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