



Delivering Accelerated Investment in Least Cost Power Generation and Supply as a means of enhancing competitiveness of business in Zimbabwe

Executive Summary

The main sources of energy used in Zimbabwe comprise of coal, fuel wood, electricity and petroleum fuels. According available information based on year 2000 national energy balance report, fuel wood provides the bulk (53%) of the total energy supply, followed by coal (20%), liquid fuels (14%) and electricity (13%).

Access to electricity is estimated nationally at nearly 40%, but access to electricity in the rural areas of the country is much lower, at about 19%. The shortage of electricity is severe and its effects in Zimbabwe are evident through extreme load shedding. The generation capacity has been heavily compromised by political and economic policies that have led to continuous negative economic growth for 10 years. In 2008 alone, Zimbabwe's economy is estimated to have slid about 14%, and electricity partly contributed to this decline.

The problems in the electricity generation sector are many and some of these include inconstant policies which are unfriendly to investors, lack of investment in the energy sector, vandalism of electricity infrastructure, brain drain, lack of maintenance and refurbishment among others.

It should be pointed out that despite having stable political and economic environment many other countries still find it difficult to attract investors in the energy sector, hence the political and economic situation in Zimbabwe can not solely explain the lack of investment.

However, there are huge potential and vast energy resources in Zimbabwe. The political process has evolved and is fast stabilizing, the economy is stabilizing and for the first time in 10 years, a positive growth of about 4% is expected. While it is delightful and shows that manufacturing activity would increase, one of the major concerns is that more electricity would be required against current limited capacity and prospects of increasing power generation in the medium to long term future are uncertain.

In the Short Term Economic Recovery Programme (STERP) launched in Zimbabwe, industry is being challenged to raise capacity utilization to above 50% from current 20%. Even at 20% there is not

enough electricity and if the capacity utilization increases to the targeted level the situation will seriously affect business viability.

Concerted efforts are therefore required to ensure that electricity generation will match the industry requirements. However, it is industry's position that investment in electricity should be encouraged and one of the major steps towards that is the urgent need for a suitable policy and a clear electricity development plan. The policy should encourage the delivery of accelerated investment in least cost power generation recognizing the need for business to remain viable and competitive. The efforts should also factor climate change issues.

1. Identification of the issue

a. Inadequate Generation Capacity

There is certainly inadequate power generation capacity in Zimbabwe. However, at the moment, the gap between the demand for power and the amount potentially available is not too glaring. This gap could have been easy to manage were it not for other factors such as negative economic and political situation for the past 10 years and inability to generate power from installed capacity.

Zimbabwe has a huge potential to generate adequate power for its own use and still have excess to export and contribute to overall export earnings. Its location at the heart of Southern Africa and the power distribution and transmission infrastructure that links the whole of Southern Africa is a huge advantage that can be exploited further.

Installed Generation Capacity and actual generation capacity

Source	Installed Capacity	Available Capacity	Variance
Kariba South	750	750	0
Hwange	780	420	360
Small Thermal Power Stations	170	0	170
Independent Power Producers	68.75	50.75	18
Imports	300	150	150
Total	2068.75	1370.75	698
Demand		1800	

Net Position		500	
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The deficit would have been greater had it not been that Zimbabwe experienced a 10-year economic recession. The Confederation of Zimbabwe Industries says industry is currently operating at below 20%. Most mines closed down or have been operating at low capacity due to the economic downturn.

Zimbabwe Electricity Supply Authority (ZESA) has managed the situation through massive load shedding. Estimated annual demand growth is expected to be around 3% in the short to medium term and 6% in the long term.

b. Idle and under utilized infrastructure which is obsolete

The old thermal power stations built in the late 1940s — Harare, Bulawayo and Munyati, despite their refurbishment in the mid-1990s — are too expensive to run and are almost obsolete. They are not generating anything at present due to a number of reasons which include shortage of coal to power them. This is despite the country being endowed with vast reserves of high quality coal. The other reasons is the plants are so old and have not been adequately refurbished, hence they will be expensive to run and susceptible to regular breakdowns.

Actual power generation which fluctuates between plus or minus 1000mw due to equipment break down and inadequate coal supply at Hwange thermal power station.

Zesa does not have funds to buy the coal and bring it all the way from Hwange Colliery as their revenue inflows are too low and the large number of breakdowns and vandalism has become a large part of the expenditure bill. They still have to service and maintain the existing infrastructure. The Hwange Colliery Company has failed to provide Zimbabwe Electricity Distribution Company — a subsidiary of the Zesa Holdings — with adequate supplies. To add to their woes, the railway line is in a state of serious disrepair.

c. Incomplete reforms which take long to finalize accompanied by policy inconsistencies

No new power generation stations have been built in the country since Kariba in the early 1960s and Hwange thermal power station which was completed in 1986. Despite advances in technology, a lead time of up to five years is needed to build a power station.

The current power shortage stems from a failure by government to implement numerous power generation projects which have been talked about for years.

In the System Development Plan approved by government about 20 years ago, Zesa Holdings was to build a new power station at Batoka Gorge between the Victoria Falls and Kariba. Like Kariba, it was to have a north and south bank station. Batoka, which was to be a run-of-the-river station, had been planned to take into consideration environmental concerns. There was no need to dam the river, and it was to be built in conjunction with expansion at Kariba to use the water optimally.

However, the Batoka project ran into problems as the Zambian government was not keen on it then because its economy was unstable and was unwilling to undertake a project with a neighbour they accused of shortchanging them during the sharing of the Central African Power Corporation assets. About US\$1,6 billion was needed for the north and south bank power stations in 1996 and these costs have continued to escalate over the years.

The other project in the system was the expansion of Hwange by adding two new generators. The project was to be financed by the World Bank and tenders had been adjudicated and awarded to YTL, a Malaysian construction giant. The YTL deal failed to materialize and the plan changed. Hwange was to be privatised by selling it to YTL. This changed again and it was not clear how this deal then collapsed. So the second power generation project fell through.

The default plan was Sengwe in Gokwe north where there are coal reserves to last for the next 100 years. Sengwe was to be developed by mining giant Rio Tinto and the power station was to be built by National Power of the UK. Sengwe was never built.

Plans for gas turbine runners to generate power in Lupane south also suffered the same fate. The project was initially linked to the British and later to the Chinese before it fizzled out. Uranium and geothermal energy resources exist but need more exploration work to quantify. Uranium deposits are in Kanyemba.

d. Weak regulatory framework

Zimbabwe has a regulatory board, the Zimbabwe Electricity Regulatory Commission (ZERC) established under the electricity Act. The board often made noble decisions, especially on tariffs, but only to have these overturned by the minister. The Government has continued to interfere with the work and decisions of ZERC. Despite coming up with a well researched credible pricing structure, they have not been able to implement it due to Government interference. Actions by the Government discourage investment in the sector. The board is not independent and even some of the appointments to the board have been questionable. The ultimate authority rests with the Government.

On the board, there are no official representations of consumer groups such as industry, mines and even domestic and the appointments are done by the minister.

e. Low investment

One of the root causes lies in failure to mobilise sufficient investment for generation of adequate supply and maintenance of plants. In all countries, governments have been the main source of investment in power generation. Kenya has some notable experience with private sector participation. Zimbabwe has a few small Independent Power Producers (IPPs).

In Zimbabwe, lack of clear policy on Public-Private sector Partnerships (PPPs), controversy surrounding indigenisation, property rights, bureaucratic red tape and high country risk mainly due to the past political and economic policies are some of the problems that heavily impacted on investment.

f. Inadequate Human Capital

Due to economic deterioration most of the specialised skills have migrated to SA, UK, and Australia. Zimbabwe today even if it gets adequate funding for all its intended electricity projects, it now faces a huge shortage of skills due to brain drain.

g. Vandalism

In the draft policy, it has been suggested that vandalism of electricity infrastructure be classified as a form of highest economic sabotage to be accompanied by a heavy penalty. The current penalties are weak and some of the vandalism has been proven to be coming from ZESA employees and other highly connected individuals.

Serious vandalism of ZESA infrastructure started in 2001 when tonnes of materials, especially copper and aluminum products, were vandalized mainly for export. Of late, transformers have become vandals' main target and tens of millions have been lost due to vandalism.

2. Effects of power outages and load shedding due to inadequate power generation and supply

Households and industries in Zimbabwe are, at times, limited to less than 18 hours of electricity supply daily. Due to limited options, people turn to firewood as a source of energy mainly for domestic purposes and the impact on the climate is huge.

Women bear the brunt of domestic shortages of power as they still have to ensure that food is put on the table. This may mean walking long distances to fetch firewood.

There is a lot of damage to plant and equipment which most companies find difficult to repair or to replace due to lack of working capital.

As a result of power cuts and load shedding, there is loss of production time and if industry was operating at levels above 60% capacity, they would fail to meet production targets and orders, leading to loss of revenue and possibly markets.

Due to power outages/load shedding, industries are sometimes forced to resort to alternative but more expensive sources of power such as diesel powered electricity generator. These high expenses incurred lead to increased cost per unit. As a result, the final price becomes uncompetitive, especially if the output is meant for export. Industries may still have to pay labour even when there is no production.

Load-shedding leaves the equipment that Zesa has in a poorer state due to the frequent switching on and off.

3. Recommendations

Consistent clear cut investor friendly policy

There is a need for a clear, comprehensive and implementable policy covering energy generation, supply and management and investment environment .The energy policy should protect and provide incentives to the investor. The policy should be investor-friendly and recognize the lack of capacity and funds from either Government or local companies to venture into power generation on a larger scale.

Predictability of electricity prices through a credible pricing structure is critical for planning purposes for both investors and consumers. A pricing policy that was crafted with the assistance of an

independent consultancy with wide consultation with various groups should be should be revisited and if it is still relevant, find ways to start implementing it.

The policy should also make available tax-free incentives or tax holidays for investors in energy generation. In relation to that, there is also need to take serious note of issues surrounding climate change and renewable energy and encourage more investment in renewable sources of energy. There is need for educational awareness and scrapping of duties for energy equipment that is not available locally and encourage manufacturing of solar energy equipment to encourage the use of renewable energy. Rural electrification in rural areas should be more through solar energy.

Vandalism: It has been recommended by stakeholders in the energy policy drafting in Zimbabwe that vandalism of electricity infrastructure be classified as a form of highest economic sabotage to be accompanied with a heavy penalty. Ban on exports of scrap metal should be seriously considered. For example in Kenya such a ban in aluminium in Kenya was effected. However, in Zimbabwe there is a problem of smuggling, especially between South Africa and Zambia

Energy Efficiency: Private sector should also play a role in funding coordinated research in development and use of renewable energy. In Zimbabwe, there are research institution which has done a lot of work on energy efficiency and renewable energy.

We recommend and Energy efficiency promotion which focuses on, demand-side management (DSM), standards, specifications of buildings that enhance energy efficiency. On phasing out of equipment that is not energy efficient there is need to impose heavy taxes on those who insist on using such equipment. Conscious Use of off Peak periods, use of Energy Efficiency devices, and use of alternative sources of energy such as solar, generator, biogas, and wind should be actively pursued.

Introduction of DSM, renewable energy and energy efficiency in the Education Curriculum should be seriously considered.

Cost of Electricity

There is need for a review of taxes and streamline or strip the charges to indicate non core and core charges on electricity. E.g. capital levy. Besides the charge on the use of power there are also other charges that are added to bills which include 5% Capital Development Levy, 6% Rural

Electrification Levy and 15% VAT. We recommend that VAT be reviewed downwards, the Capital Development and rural electrification levies be scrapped and proper financial structures put in place for Capital expenditure in both urban and rural areas.

Regulatory Framework

There is need for an effective Regulatory Framework with a clear separation of powers between the Minister and the Regulator. There should also be mechanisms to ensure that there is transparency and fairness in the regulation process.

Regulator should also have a systematic process of engaging investors that discourages fly-by-night business activities e.g. introducing competition and transparency and encouraging project implementation. The regulator should also implement effective regulation of the players and there should be tight monitoring of performance of all the players. Some consumer groups such as manufacturing sector and mining sector representatives should be officially represented on the regulatory board.

In Southern Africa, Mozambique and Zambia are regarded as countries with best energy policies and plans that go into detail on investor expectation and what is expected of them. The policy and plans state the procedures, limits, permits and the manner in which it is to be done. In Mozambique there is a Government Energy Plan with guidelines and timeframes.

In Zimbabwe there is no clarity on ownership, property rights and the bureaucracy is frustrating. We recommend a one-stop-shop for investors through coordination between Zimbabwe's investment promotion body, Ministry of Energy and other relevant Government bodies.

At the moment mining even of energy fuels falls under the Ministry of Mines and yet the use and all energy development mechanisms fall under the Ministry of Energy. CZI need to come up with an agreed position that it would advocate for.

Consultations for the energy policy revealed that contributions were the same as those of 2007 draft policy. However, the problem is in implementation of policy strategies and actionable programmes.

BMOs need to build capacity to lobby for the implementation of energy policies and hold the responsible authorities accountable for the implementation of it. The BMOs should come up with clear cut plans to play a role in mobilization of investment in electricity sector.

Elements of an enabling energy policy and regulatory framework:

- *POLICY CLARITY – objective must be to ensure a balance between **investment viability, customer affordability and general public interest** (e.g. quality of products and services; environmental sustainability).*
- *POLICY CONSISTENCY – because energy projects are long term (over 20 to 30 years)*
- *GOOD GOVERNANCE – achieved by separating **policy setting, regulatory oversight and energy delivery** into different institutions in order to minimise the conflicts of interest that lead to policy inconsistencies*

Investment increase

Security of investments: we need to do more work to find ways to ensure that there are no policy reversals with every change of Government.

We need to Explore timely delivery of projects all things being equal. If don't deliver there should be penalty and also Government should be obliged to meet certain things. For Example foregoing guarantees, performance guarantee bonds.

Nuclear Energy: World over there has been a change in policy regarding nuclear energy with many countries reviving their nuclear power programmes. Nuclear power is a clean source of energy which country should explored further in the long term.

This is a completely new to Zimbabwe and more work may need to be done to weigh the possibilities of nuclear energy. However for this to happen there is need for carefully crafted legislation to support more work in the area of nuclear energy and encourage further explorations in the field of this technology in Zimbabwe. Such legislation should be aimed at Promoting research and development into peaceful application of nuclear science and technology as well as promoting regional and international co-operation in nuclear science and technology and the development and application of nuclear energy for peaceful Capacity building of exploiting nuclear energy can then be considered.