



DEMAND SIDE MANAGEMENT COMMITTEE STEPS UP ELECTRICITY SAVING CAMPAIGN

Occupants of storey buildings in major cities encouraged to switch off switches at night

The Demand Side Management (DSM) Committee has stepped up electricity saving campaigns in a bid to conscientise consumers on the need to efficiently utilise the scarce electricity resources that are now adversely affecting the country and Southern Africa as a whole.

The DSM Committee was formed by the Ministry of Energy and Power Development in 2005 in consultation with ZESA and all the key stakeholders against a background of a growing need for efficient utilisation of electricity in the face of the anticipated power shortages by the Southern African Power Pool (SAPP), of which Zimbabwe is a member.

Research has established that through energy conservation measures if properly implemented in Zimbabwe, can lead to savings of up to 20%, or 300MW.

The Distribution Department of the power utility has entered into partnerships with other players in industry that manufacture energy savers as a way of managing the diminishing availability of excess power in the region.

ZETDC has also asked consumers of electricity to play their part in complimenting the efforts of the Ministry of Energy and Power Development and the power utility.

The DSM team further established that there are 5, 670, 000 units of incandescent lamps countrywide consuming about 340MW. If energy savers replaced these ordinary lights, the national consumption of electricity can drastically come down by 62MW.

In addition, DSM can result in potential energy savings in the tune of US\$25Million per year on the power import bill. ZESA Holdings is currently importing about 35% of electricity.

These revelations have come at a time when most occupants of skyscrapers in most cities negligently leave their buildings totally lit during the night, at a time the country is in dire need of energy conservation measures.*

DSM AND ENERGY EFFICIENCY AWARENESS PROGRAMME

Are we aware of the problem of electricity shortage facing Zimbabwe?

Most people are becoming more aware of the electricity shortage because of frequent load-shedding outages.

What is the nature of the problem?

The demand for electricity outstrips available supply during the morning and evening periods.

Why in the morning and evening?

This is mainly due to the increase in the domestic load during these periods due to meal preparation, water heating, lighting and the switching on of appliances such as TVs, radios, computers, fans, heaters, etc. When demand exceeds supply, some customers have to be switched off or shed to balance supply and demand.

Zimbabwe is one of those countries whose supply of electricity is insufficient to meet demand. 35% of the national power requirement is imported from neighbouring countries.

Why do we have the Power Shortage?

1. Capital investment in the energy sector has not been keeping pace with the growth in demand over the years because of lack of funds.
2. Existing electricity generating plants are not being used to full capacity because of the following reasons:

2.1 Breakdowns – equipment is ageing and lacks adequate maintenance. Foreign currency shortages and low tariff charges have made maintenance very difficult.

2.2 Shortage of coal.

2.3 Droughts – the low water levels at Kariba dam mean less output from the hydro-power station.

Where would we want to be?

A situation where there is a reliable and secure electricity supply at the right price.

What are the Possible solutions to the power shortage problem?

(a) Medium to Long Term Solutions

New capital investments in the Energy Sector are required in order to increase generation capacity. These are as follows:-

Project Title	Estimated Cost (US\$)	Implementation Time Frame
i) Hwange Stage 3: 2 x 300MW	600 million	3 – 4 years
ii) Kariba South Extension 2x150MW	300 million	4 – 5 years
iii) Gokwe North 2 x 350 MW	1 400 million	5 – 6 years
iv) Batoka Gorge 4 x 200 MW	1 350 million	5 – 6 years
v) Lupane Gas 2 x 150 MW	300 million	2 – 3 years

(b) Short Term Solutions

1. This entails the improvement of the output of thermal power stations, which are currently operating well below their design capacities due to lack of maintenance and lack of coal. This would require approximately US\$35 million and takes up to 18 months to complete the machine overhauls.
2. Reducing demand without compromising on production and quality. This can be achieved through energy efficiency (EE) improvement and demand side management (DSM) programmes.

- ***Energy Efficiency Improvement***

This entails a sustained decrease in the amount of energy consumed per unit of industrial production without compromising the quantity and quality. Besides conserving energy efficiency improvement results in cost competitiveness of our products and services.

- ***Demand Side Management***

Demand side management is a process whereby an electricity supplier influences the way electricity is used by customers resulting in customer bill reduction and release of additional capacity for to meet requirements of all customers.

The actions which customers can take include:-

1. Prepare meals early before the evening peak period, which starts at about 5pm.
2. The major energy consuming appliances in the home are the geyser and the electric stove.
3. Match pots and pans with the stove plates and ensure that they are covered.
4. Switch off the stove at least five minutes before the food is cooked.
5. Never use the stove or grill to warm the house.
6. Ensure the geyser thermostat is set below 55°C. Switch off the geyser when going away.
7. Reduce the amount of water in the bathtub or shower.
8. Defrost food at room temperature instead of the oven.
9. Do not open the fridge doors unnecessary.
10. When using an electric kettle to boil water, it is advisable to boil only what is needed provided the element is covered. It is quicker and cheaper to boil water in an electric kettle than in a pot on the stove.
11. For those who can afford them, pressure cookers and microwave ovens reduce the period of cooking considerably and hence reduce the consumption of electricity.
12. Use low energy lamps. They cost more but use 80% less energy and last more than 6 times longer than ordinary filament lamps.

13. Turn off lights when you leave a room. If you are going away consider buying timers to turn your lights on instead of leaving them on 24 hours a day.
14. Over 70% of the cost of washing a load is in heating the water so use cold water as often as possible.
15. Filtering is a major expense of owning a swimming pool. An average pool requires about 4-6 hours of filtering per day in summer and 3-4 hours in winter so do not filter more than you have to.

What has the Utility done to date?

1. Medium to Long Term Projects:

MOU's and feasibility studies are now in place. However, the development of the project hinges on the raising of the requisite foreign currency down payments and the implementation of Cost Reflective Tariffs in order to attract investment.

2. Short to Medium Term Projects

- a) Financing for the rehabilitation of Hwange Power Station has been secured.
- b) The resuscitation of the small thermal power stations is underway.
- c) Imports for 2007 have been secured though some of them are non-firm. This will continue until there is adequate capacity.
- d) DSM & Energy Efficiency

A Demand Side Management and Energy Efficiency Campaign in the public media and at various shows and exhibitions is ongoing since its launch at all Stakeholder DSM and Energy Efficiency Symposium of November 2005. some symposium recommendations include:-

- Creation of a DSM fund.
- Design of a school course curricula for DSM & EE.
- Award for the Best Performing Company in Energy Efficiency.
- Scrapping of import duty on Energy Efficiency equipment and products.
- National Status for DSM & Energy Efficiency projects.
- Incentives to local manufacturers of DSM and EE products.

The implementation of the recommendations is being pursued.
Further action taken by the Utility is as follows:-

- DSM & Energy Efficiency supporting tariff was designed and presented to the regulator ZERC.
- Water Heating

Water heating accounts for about 39% of domestic load. Ripple Control Systems to control domestic water heaters were installed in Harare and Bulawayo to switch off the geysers during the evening peak.

This system does not affect the normal use of hot water in households. The system is thus a virtual power station during the evening peak. The system has a potential of shedding 270

MW if extended to new houses and other towns. This extension requires about US\$13 million.

- Interruptible Customers

The Company has entered into contracts with large power users who are called upon to reduce their power demand during periods of power shortfalls.

- Management of Technical and Non-technical losses.

Statistical Metering has been installed at borders between transmission and distribution system in order to monitor losses and take corrective measures.

Expected Outputs of Implementing Short Term Measures:

1. Easing of load shedding.
2. Sustained decrease in industrial energy intensity of production.
3. Reduction of power import bill.
4. Flattening of demand curve.
5. A higher level of responsibility all stakeholders.

The Way Forward

The Company will continue to pursue Demand Side Management & Energy Efficiency projects in water heating, lighting and cooling among other measures as follows: _

Water Heating

1. The ripple Control System will be extended to other major cities & towns.
2. All new houses with geysers will be put on the ripple control system.
3. The installation of solar water heaters will be promoted.

Lighting

There is an estimated 5,670,000 incandescent lamps installed in the country amounting to an installed capacity of 340MW. The national lighting load can be reduced to 62 MW through the use of energy saving lights. These energy savers use only 20% of the conventional lamp energy for the same light output and last up to six times longer. The savings would translate to about US2million per month on the import bill. The project cost is estimated at US\$15 million.

Cooling

1. The ripple Control System will be extended to air conditioning plant.

"ELECTRICITY SAVED IS MONEY SAVED"