



*THE ENERGY REGULATOR*

# *Newsletter*

AN ENERGY REGULATION BOARD NEWSLETTER

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- ❖ **Committee of Inquiry into the National Power Outage**
- ❖ **Board Members tour TAZAMA Pipeline**
- ❖ **National Consumer Conference held in Lusaka**
- ❖ **Leaded Petrol Phased out in Zambia**

# EDITORIAL



Dear reader,

Welcome to the 23<sup>rd</sup> Edition of the Energy Regulator!

This first issue of the year features articles on energy event, which affected not only our country but also the SADC region, while petroleum prices on the international market were pushing to all time highs.

At home, energy issues were brought to the forefront by three blackouts experienced almost in succession in January. The nation was hard hit, particularly as many had perceived the 'looming power shortage' announcements as rhetoric by technocrats. The ERB appointed a committee to look into the cause of the nation-wide power blackouts and propose recommendations on how a similar situation could be avoided. Read more on the committee findings and recommendations in this issue.

Petroleum product prices made worldwide headlines with prices on the international market hitting record highs. The Zambian government maintained subsidies that it had put in place since September 2007 thereby cushioning the nation from the volatile international prices. The Board took time to learn about operations of an important player in the petroleum sector in Zambia, TAZAMA Pipeline. The Board conducted a tour of TAZAMA Pipeline infrastructures and operations in Tanzania. They were informed about important issues such as the Single Point Mooring facility, which they were told is in need of urgent rehabilitation to continue pumping crude from Tankers. The Board learned about costs involved in pumping the crude 1,710Km, from the port of Dar-es-Salaam to Indeni Refinery Plant in Ndola. This article is a must read.

On a related note this period also saw the phase out of leaded petrol from Zambia. This had been due since December 2005 as agreed at the Dakar convention to which Zambia is a signatory. This process was effected end of March this year and had been preceded by a vigorous awareness campaign announced by Hon Kenneth Konga and spearheaded by the Ministry of Energy and Water Development. Awareness activities were held in various parts of the Country, which included Copperbelt, Livingstone, Mongu and Lusaka. Learn about this process, types of fuels available e.t.c.

Enjoy the Edition  
Kwali Mfuni

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# ERB Board tour TAZAMA Pipeline facilities

**E**nergy Regulation Board (ERB) Board Members conducted a familiarisation tour of Tazama Pipeline facilities and infrastructures in Tanzania from 31<sup>st</sup> March to 4<sup>th</sup> April 2008.

The main purpose of the field trip was to familiarise the Board Members with TAZAMA strategic facilities and operations of Tanzania, which are used to supply crude oil from the Port of Dar-es-Salaam Tanzania, to Ndola Zambia.

The Board Members, led by the Chairman Mr. Sikota Wina and his deputy Ms. Ida Nkhoma included Mr. George Samiselo, Mrs. Pixie Yangailo, Mr. Hobson Simasiku and Mr. Elias Mpondela.

The Board Members, accompanied by ERB staff members, visited the Tazama Pipeline Tank farm, the Single Point Mooring Facility as well as the Kigamboni and Morogoro Pump Stations. The entourage also visited the Tanzania Ports Authority and



*Members of the Board braving the Tanzanian heat aboard the MV Kalonje (boat) enroute to the Single Point Mooring Facility on the Indian Ocean*

paid courtesy calls on the Energy and Water Regulatory Authority and the Zambian Mission in Tanzania.

## **Tazama Pipeline**

The pipeline was set up in 1968 to transport crude oil from the port of Dar-es-Salaam to Indeni Oil refinery in Ndola. The pipeline is jointly owned by the Tanzanian and Zambian Government, which have 33% and 67% shares, respectively. The Pipeline stretches 1,710km from Dar-es-Salaam to Ndola through different geographical terrain.

## **Single Point Mooring Facility (SPM)**

The crude oil once off-loaded from the tanker starts its journey via the pipeline from the Single Point Mooring Facility on the Indian Ocean. The oil tankers dock at the Single Point Mooring (SPM) facility which is about 7 km from the Tazama Tank Farm. At the SPM Crude oil is pumped from the ship using flexible pipes, which lie on the sea bed, extending 3km from the shoreline. The crude then flows into the storage tanks at the Tazama Tank Farm.



*The pipeline emerging at Ndola terminal depot running 1710km from the Port of Dar-es-Salaam*

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*The SPM covered in a net to prevent sea gulls nesting on it*

**Tazama Tank Farm**

The Tazama Tank farm is a storage facility for the crude pumped from ships. The Tank farm has a total of 6 storage tanks each with a capacity of 35,000m<sup>3</sup> and a combined total of 210,000m<sup>3</sup>. The Tank farm also has a pump station, which pumps the crude through the pipeline. Each pump station gives the crude oil enough pressure to flow to the next pump

station such as the one stated in the section below.

**Morogoro Pump Station**

The entourage visited Morogoro Pump Station about 200km from Dar-es-Salaam. There are a total of 7 pump stations along the pipeline from Dar-es-Salaam to Ndola. Due to the hilly terrain in Tanzania, there are 5 pump stations to push the crude through

the pipeline, which in one instance is almost at a vertical angle. There are 2 pump stations in Zambia, which has a relatively level terrain.

All the 7 pump stations use reciprocating engines which run on crude oil. These machines were bought second hand in 1968 and they are almost obsolete. To run, they need special arrangements for maintenance from the supplier. As



*One of the feedstock tanks at the Tank farm that has just undergone rehabilitation*



*One of the reciprocating engines at the Morogoro pump station*

such TAZAMA incurs considerable costs in operations and maintenance of crude oil run pumps as compared to motor driven ones. Tazama informed the board that they plan to replace one engine block every year. Most stations have two pumps on standby to avert any possible breakdowns.

### **Energy and Water Regulatory Authority (EWURA)**

The Board members took time to visit the Energy and Water Regulatory Authority (EWURA). EWURA is a multi-sector regulator under the Ministry of Water in Tanzania. Discussions were held with EWURA Board Members and senior staff. EWURA regulates 4 sectors i.e. Petroleum, Water and Sewerage, Electricity and Natural Gas. Some challenges EWURA faces in implementing its mandate include ensuring quality petroleum products are sold in Tanzania, as it has been found that some unscrupulous companies blend diesel with kerosene. EWURA is proposing to address this problem by lobbying the Government to harmonise taxes on petroleum products and in addition procure mobile laboratory equipment as well as introducing a marker in Kerosene.

### **Tanzania Electricity Supply Corporation (TANESCO)**

This is the national generator and distributor of electricity in Tanzania. The electricity produced in Tanzania is predominantly Hydro. Tanzania has experienced electricity shortages as a result of drought. In order to combat this, Tanzania has invited Independent Power Producers (IPPs) to meet the shortfall in crisis situations. Electricity generated by IPPs is much more expensive because it is produced using natural gas, which is available in that country. In 2007, when Tanzania experienced a drought, the IPPs contributed about 70% of Tanzania's power requirements. The entourage visited two IPPs in Dar-es-Salaam.



*Meeting with EWURA Board Members*

### **BP Tanzania**

The field visit also included the BP Tanzania depot and rail loading Points. The Dar-es-Salaam – Ndola corridor is the shortest route for transporting finished products into Zambia and also has the advantage of having a rail system, TAZARA railway line, which is the next cheapest transport mode for transporting petroleum compared to the pipeline.

The team learnt that the Tanzanian Government has 50% shares in BP Tanzania. BP (T) Ltd has storage facilities at Malawi Cargo Centre

and the Tanzania Depot and both are connected to the TAZARA rail line. This facility has been used by BP Zambia for moving petroleum products to Zambia. Some constraints being faced include inadequate wagons and locomotives, forcing Oil Marketing Companies (OMCs) to resort to road transport. The Tanzania Revenue Authority has also set a restriction of 30 days on transit fuel after which taxes have to be applied. The Malawian government has successfully applied to increase the transit period to 45 days. BP Tanzania implored the delegation to lobby the Zambian government to do the same.



*The rail loading facility at the BP Tanzania Depot*

# COUNTRY WIDE POWER BLACKOUT – ERB COMMITTEE OF INQUIRY



Control Room at the Victoria Falls Power Station

The beginning of the year brought a challenging period in the electricity sector in Zambia. The national power grid failed on 19<sup>th</sup> January 2008 on Saturday evening. The whole country plunged into darkness, power was only partially restored in the early hours of Sunday.

ZESCO worked to restore power and had almost succeeded in reconnecting the whole country, when on the evening of Monday 21<sup>st</sup> January, 2008 the national power grid failed for the second time. The utility worked hard and power was again restored. However, the next day power again failed countrywide for the third time in four days.

It was a difficult period for Zambians as all sectors were affected, miners were trapped in shafts, industry could not produce projected quantities as power was unreliable, people's emotions were high, particularly that the Africa Cup of Nation Football tournament was on in West Africa and Zambians were anxious to watch the National team perform.

ZESCO appeared before the ERB to explain what had transpired as well

as report its efforts to implement recommendations of the Expert Team, which investigated the Nationwide Power Outage of 4<sup>th</sup> June 2006.

In a bid to address the situation, which had a negative impact not only on consumers but also the economy, the ERB commissioned a committee of inquiry to examine the causes of the blackouts and recommend measures to prevent a reoccurrence. The committee of inquiry comprised members from diverse professions, which included engineering, economics, accountancy and law. The Committee commenced its work on 6<sup>th</sup> February 2008 and was chaired by Prof. Jorry Mwenechanya. Other members of the committee were Mr. George Samiselo, Mr. Raphael Salasini, Mr. Chiteta Ching'ambu, Mr. Clement Sasa, Mr. John Muleya, Ms. Ireen Musonda, Mr. Matthew Lindunda, and Ms. Nelly B.K. Mutti.

The main objective of the Committee of Inquiry was to examine the causes of the blackouts that the country experienced and recommend measures to prevent a reoccurrence. In order to achieve this objective, the Committee of Inquiry conducted

investigations that were primarily focused on ZESCO Limited and the Copperbelt Energy Corporation (CEC).

The Committee of Inquiry visited and interviewed staff at ZESCO Headquarters including the National Control Centre, Kafue Gorge Power Station, Kariba North Bank Power Station, Victoria Falls Power Station, CEC Kitwe Offices, including the Control Centre, the main ZESCO and CEC substations in Kitwe and Luano and also Michelo Sub Station outside Chililabombwe.

## FINDINGS

The main findings of the Committee of Inquiry were as follows:

### **Nature and Source of the disturbance on 19th January 2008**

The blackout was initiated by a disturbance in the Zimbabwean grid, which resulted in the loss of a major load and shut down of the Kariba North Bank power station. This caused overloading and subsequent tripping of the machines at Kafue Gorge and Victoria Falls power stations, resulting in the blackout.

### **Nature and Source of the Disturbance on 21st January 2008**

The blackout was initiated by a spurious tripping on the only 330 KV transmission line available at the time [line No.2] from Kariba North Bank power station to Leopards Hill substation. The failure of this line completely isolated Kariba North Bank Power Station from the national grid because on 30<sup>th</sup> December 2007, a tower on the only other line [Line No.1] had collapsed due to heavy rains. This situation caused over loading of Kafue Gorge and Victoria Falls power stations leading to their automatic shutting down.

### **Nature and Source of the Disturbance on 22nd January 2008**

The blackout of 22<sup>nd</sup> January 2008 was caused by a collapse of the system

voltage due to insufficient generation capacity. The Zambian system had been isolated from Zimbabwe and Kariba North Bank Power Station was not available on this day because both lines that transport power from this station were out of service, as indicated in the *Finding* above. Kafue Gorge Power Station was operating at maximum available generation without any reserve margin at all and as the demand for power increased, it could not cope and therefore, shut down.

## RECOMMENDATIONS

The recommendations of the Committee of Inquiry are as follows:

### (i) Automatic Under-frequency Load Shedding

On all the three days of the blackouts, absence of an effective automatic under-frequency load-shedding scheme played a major role in the failure to contain the scope of the disturbances. Such a system in the event of loss of generation would automatically switch off appropriate loads and balance demand with the available generation. This was a recommendation of the blackout of 4<sup>th</sup> June 2006. The committee re-emphasised this recommendation and urged ZESCO to immediately engage its partners, especially CEC and the major industrial and mining consumers on this matter.

### (ii) System Capacity and Spinning Reserve

The second most important factor for the building up of faults into total blackouts was the failure to maintain a generation spinning reserve, which contributed to the inability of the system to contain the abnormal conditions during the three days. The Committee recommended that ZESCO reviews system operation and that a reasonable reserve capacity is always maintained to ensure stability of the power system.

### (iii) Power Rehabilitation Project (PRP)

The Committee recommended that ZESCO places the highest priority on the completion of the Power Rehabilitation Project in order to increase generating capacity. In particular, payments to contractors should have first call on available resources.

### (iv) System Reinforcement

It was recommended that ZESCO immediately undertakes an analysis of the system to determine the reinforcement required to improve stability. ZESCO should work with its partners, mainly Copperbelt Energy Corporation (CEC), to determine the investment needed and how it should be shared. Both ZESCO and CEC should also accelerate the enforcement of minimum power factor operation by the large industrial users and the mines.

### (v) Line Maintenance

The transmission grid is critical to the security of supplies from the power stations. The immediate challenge concerns the susceptibility of glass porcelain insulators to catastrophic failure, and even to vandalism. While recognizing the limitations under the current conditions of high demand and reduced capacity due to the

PRP, the Committee nevertheless recommended that every opportunity should be taken to continue the programme of replacing the glass insulators with the newer rubber type. In this vein, the Committee further urged ZESCO to review the temporary arrangements on the Kariba North – Leopards Hill line to ensure that the line is appropriately secured before the 2008/09 rainy season.

### (vi) Protection System

An important objective of the protection system should be that, in the event of a severe fault, supply should be maintained to those areas that can be isolated from the affected areas. In addition such measures reduce the time of restoration for the rest of the system. The Committee recommended that ZESCO takes immediate steps to explore and determine such possibilities. In particular, the protection grading between Victoria Falls and Kafue West substation be reviewed so that in the event of a shutdown of the main power station's essential loads in Choma and surrounding areas can be maintained.

### (vii) System Monitoring

The recorders and protective relays on the system are not time-synchronized, which made it difficult to reconstruct the chain of events

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Electricity generating equipment at the Victoria Falls Power Station



*Circuit breakers at Pensulo Sub Station near Serenje*

during the blackouts, a handicap also experienced by ZESCO. The Committee recommended that ZESCO takes immediate steps to acquire equipment needed to synchronise the 'time stamping' on all event recorders. This should be extended to recorders on the CEC network. CEC should take similar steps on the Copperbelt network.

#### **(viii) Black Start Procedures**

Following a blackout, it is necessary to minimize the period of restoration as this has a significant impact on the risk posed to human life, and on operational losses and inconveniences suffered by consumers. As such ZESCO and CEC should review their Black Start Procedures and ensure a continuous state of readiness of systems and personnel.

#### **(ix) New Generation Capacity**

The Committee recommended that the current efforts to build new power stations be redoubled. To supplement its own efforts, the Government requires the participation of the private sector. In this regard the Committee recommended that the Office for Promoting Private Power Investment (OPPI) and the Framework and Package of Incentives be urgently reviewed in the light of experience to date.

#### **(x) Regulatory Framework**

The Committee noted the progress made on the implementation of a Grid Code for the Zambian electricity system. The Committee recommended that, in view of the shortcomings evident from the experience of the blackouts, the Grid Code should be enhanced to provide detailed technical requirements for the operation of the system. This may be through the expansion of the current provisions or by rules supplementary to the Code.

#### **(xi) Enforcing license conditions**

The Committee noted that regulating ZESCO poses unique challenges for the ERB because the utility is publicly owned. This is a common phenomenon worldwide. Nevertheless, the Committee viewed the credibility and effectiveness of ERB as critical to the success of the industry as a whole. The Committee, therefore, recommended that the Government works with the ERB to identify areas in the institutional and legal frameworks that need to be reviewed in order to enhance the ERB's effectiveness as a regulator.

#### **(xii) Economic Impact**

The Committee recommended that the Government and the ERB commissions a separate study to assess the impact of the national blackout on the economy. This will help to provide important planning information, with

regard to the impact of load shedding on the economy.

#### **(xiii) Implementation of Recommendations**

The Committee recommended that the ERB immediately institutes a mechanism for monitoring the implementation of recommendations made in this report and those from the Technical Team Report on the 4<sup>th</sup> June 2006 blackout. Time frames should be agreed with the concerned parties as necessary and the ERB should ensure compliance by the licencees.

#### **(xiv) The Southern African Power Pool (SAPP)**

The Committee recommended that the Government urges its counterparts in Southern African Development Committee (SADC) to urgently review the virtual dismantling of the SAPP through the continued disconnection of critical inter-connectors. Zambia's position should be one of keeping the sub-regional grid connected while the issues brought to the fore by the generation deficit are urgently addressed by the utilities. Weighing the risk of system disturbances against the benefits of interconnection, the Committee's view is that such risks are outweighed by the benefits.

#### **(xv) Regional Operating Standards**

The Zambian government should lead efforts to develop enforceable operating standards among the members of SAPP. The Committee's view was that an external body from SAPP, such as the Regional Electricity Regulators' Association (RERA), should be tasked to work with SAPP in developing and administering an acceptable operating regime, which should have the highest endorsement of the Southern African Development Community. The standard should set out the minimum operating requirements for the Operating Members of SAPP

# Key Performance Indicators (KPIs) ZESCO

As the public is aware the Energy Regulation Board (ERB) revised ZESCO Limited electricity tariffs, other charges, fees and penalties effected this year. The ERB approved a multi-year tariff for the first time in Zambia. A multi-year tariff is awarding a tariff path for a number of years conditional to meeting a number of requirements. ZESCO was therefore awarded a multi-year tariff spreading over three years 2008 – 2010 as indicated in the table below:

Customer Category	2008	2009	2010
Residential	26.8%	16.6%	11.9%
Commercial	1.3%	0.3%	0.3%
Services	6.8%	1.9%	1.9%
Small Power (MD1 & MD 2)	16.2%	5.5%	4.5%
Large Power (MD3 & MD4 )	27.5%	16.6%	2.2%

The multi-year tariff is also intended to enhance the performance of ZESCO, as it uses the principle of self enforcing incentives embedded when determining the electricity tariffs. Under the current multi-year tariff review, incentives in the form of Key Performance Indicators (KPIs) were incorporated in the tariff review to motivate ZESCO improve operations and service delivery to its consumers. The KPIs extend over the multiyear tariff period and ZESCO is expected to report on a quarterly basis. KPIs agreed on with ZESCO are as indicated below:

## Metering customers

- All new customers are metered upon connection.
- All new residential connections should be done within 30 days after customer pays for connection.
- All un-metered customers are metered by March 2010. The milestone for this KPI is that one-third (1/3) of the backlog is metered every year till 2010.

## Cash management

- All customers are billed timely and on a regular basis by December 2007
- Reduce debtor days from current 180 days to not more than 60 days by March 2010. The milestone for this KPI is that one-third (1/3) of the target is reduced every year till 2010.
- Total trade receivables do not exceed 17% of turnover by March 2010.

- Total receivables do not exceed 17% of total income by March 2010

## Staff productivity

- Increase number of customers per employee to 100 customers per employee by March 2010
- Reduce staff costs from current levels of about 49% of operating budget to about 30% of operating budget by 2010;

## Quality of service supply

- Reduce annual unplanned outages to 5 hours per customer by March 2010

## System losses

- Maintain transmission losses at 3% or less
- Reduce distribution losses to 14% by March 2010

Reduction of losses will increase power available for sale to ZESCO's customers and increase ZESCO's revenue

ZESCO's Report for the period January – March 2008 is as indicated below:

## Metering

About one third of ZESCO customers (110,000) are unmetered. This is one of ZESCO's challenges because lack of metering erodes revenues as some consumers are charged fixed amounts regardless of consumption. Residential consumers are the majority of unmetered customers at about 92%, followed by commercial at 7% and social at 1%.

Lack of metering is a double edged sword as ZESCO is losing revenue through electricity thefts and unmetered consumption while some customers may be paying more than they have used in view of increased load shedding and unmetered consumption.

## Cash Management

ZESCO has a debt collection period of over 180days. The target is to have receivables at 17% of turnover or 60 debtor days by end of 2010, which will greatly improve ZESCO'S liquidity.

## Staff Productivity

This KPI measures how effectively ZESCO is using its workforce. This stems out of public concerns that it has a bloated work force. A ratio of 100 customers per employee to be achieved by 2010 was agreed with ZESCO. ZESCO has a ratio of 64 customers per employee.

## Quality of service Supply

This KPI measures improvements in quality of service. Annual unplanned outages are supposed to be 5 hours per customer by March 2010. It was anticipated that outage hours for the first quarter would be large due to the nationwide blackouts experienced in January this year.

## System Loses

The target is to maintain transmission losses at 3% or less.

# Leaded Petrol Phased Out

On 31<sup>st</sup> March 2008, Zambia joined the rest of the world in phasing out leaded petrol due to its harmful effects on human health and the environment. In its place Lead Replacement Petrol was introduced, to be sold alongside unleaded petrol. The move was a major step in the promotion of the use of cleaner fuels.

In 2001, Zambia along with other countries signed the Darkar Protocol, which set December 2005 as the deadline for phasing out leaded petrol. However, a number of issues needed to be addressed before making the switch from leaded petrol.

Some issues requiring attention included the Government's pronouncement of a due date, refinery preparedness in terms of ability to produce unleaded petrol and Lead Replacement Petrol, Oil Marketing Companies (OMCs) preparedness in relation to labelling and designation of pumps for lead Replacement Petrol (LRP) and sensitization of consumers who were concerned about the impact on their vehicles as a result of the change.

Over the years, there has been a realization that lead emitted from vehicle exhausts has potential to negatively affect human health, including impaired mental development, reduced intelligence, and behavioural disorders in children; and high blood pressure, cardiovascular diseases and cancer in adults. Thus, leaded petrol has been phased out in North America, Europe and other parts of the world, including countries in Africa. In its place, unleaded petrol and lead replacement petrol (LRP), which do not pose the health risks associated with leaded petrol, have been introduced.

In view of leaded petrol's harmful effects, most vehicle manufacturers in Europe and Japan gave notice to local franchise dealers that they had started to phase out manufacturing vehicles



that use leaded petrol. Therefore, the refining and supply of leaded petrol in Zambia, was seriously challenged by the global trends because most vehicles on the market were incompatible with leaded petrol.

In view of the global developments, the Energy Regulation Board (ERB), in 2001, set up a committee to manage the phase out of leaded petrol. Following representations from the committee and other stakeholders, the Government of the Republic of Zambia set December 7<sup>th</sup> 2007 as the last date for the production of leaded petrol at Indeni Petroleum Refinery,

with the nation going fully unleaded by March 31<sup>st</sup> 2008.

The target date was announced by the Minister of Energy and Water Development (MEWD) Honourable Kenneth Konga during the July/August 2007 sitting of Parliament. Later, Hon. Konga launched the awareness campaign on the phase out of leaded petrol on 28<sup>th</sup> March 2008.

Following the launch, MEWD, ERB, OMCs and other stakeholders embarked on a public sensitization campaign using various avenues including radio, TV, posters, billboards, brochures, public meetings e.t.c. Three public meetings were thus held in Ndola, Livingstone and Lusaka where the public was sensitized on the rationale for the phase out of leaded petrol. A capacity building workshop was also held for the Mongu Consumer Watch Group to help sensitise Mongu residents about the phase out. Owing to the sensitization campaign, there has been a smooth transition from the use of leaded to unleaded petrol and LRP.



*A filling station in Lusaka*

# Frequently Asked Questions about Lead Replacement Petrol (LRP)



## Q When will lead petrol be phased out?

A Lead petrol will be phased out nationally in 2008. To ensure that lead petrol is phased out this year, no lead petrol will be produced by Indeni Petroleum after 31<sup>st</sup> March 2008.

## Q Why is lead petrol being phased out?

A Lead emissions from motor vehicles contribute a significant percentage of airborne lead in the atmosphere, which is harmful to the environment. Reducing the use of lead in petrol reduces airborne lead. In addition, Lead has long been recognized as posing a serious health risk.

## Q What fuel do I use for my car after the phase out of lead petrol?

A If your car was manufactured before 1986, and it is not fitted with hardened valve seats, then you will need to use Lead Replacement Petrol (LRP). Your vehicle handbook and/or vehicle supplier should be able to further advise you on whether your car requires LRP or not.

## Q What is Lead Replacement Petrol (LRP)?

A Lead Replacement Petrol is an alternative to leaded petrol. LRP is basically Unleaded Petrol, to which an anti-valve seat recession additive has been added to conform with certain vehicles' requirements.

## Q I have a pre-1986 car, will I be able to use it?

A Yes! There are a variety of options available to users of pre-1986 cars. These options depend on your engine type. Pre-1986 vehicles generally fall into two (2) categories:

*High compression engines with soft exhaust valve seats – these vehicles will need to use Lead Replacement Petrol (LRP)*

*Low compression engines with hardened exhaust valve seats – these vehicles will need to use Unleaded Petrol*

Note: If you are unsure about what category your vehicle falls in, please seek advice from your motor mechanic, vehicle manufacturer, vehicle dealer or Road Transport and Safety Agency (RTSA).

## Q I have a pre-1986 car that runs on unleaded petrol – will I have to switch to LRP?

A No! You should continue to use unleaded petrol.

## Q I have a post-1986 car – what fuel do I use?

A Most modern cars and all those manufactured after 1986 will use Unleaded Petrol.

## Q Will Lead Replacement Petrol offer the same engine protection as lead petrol?

A Yes. Lead Replacement petrol

offers the same lubrication properties as leaded petrol. The additive in Lead Replacement Petrol functions in the same way as lead, and it will offer the same level of protection against exhaust valve seat recession.

## Q Will Lead Replacement Petrol affect engine performance?

A No. Lead Replacement Petrol has the same properties as leaded petrol. However, as with any fuel, it is also important that your vehicle is regularly maintained and well-tuned.

## Q How do I recognize Lead Replacement Petrol?

A Lead Replacement Petrol will be available at all service stations in Zambia. Lead Replacement Petrol will be provided with a 'red dye' for ease of visual identification and it shall be dispensed from the pumps/dispensers, which are clearly labelled as 'LEAD REPLACEMENT PETROL' or LRP.

Lead Replacement Petrol should not be used in post 1986 (catalyst convertor equipped) vehicles.

## Q Will Lead Replacement Petrol cost me more?

A Lead Replacement Petrol will cost the same as unleaded Petrol.

## Q Will LRP be phased out as well?

A LRP will be phased out eventually. This will however be in consultation with stakeholders and after a policy to do so has been issued by government.

# National Consumer Conference

By Stephen Bwalya

The Regulatory Alliance (RA) comprising Communications Authority of Zambia (CAZ), Energy regulation Board (ERB) and National Water and sanitation Company (NWASCO) held the first ever National Consumer Conference from 24<sup>th</sup> to 25<sup>th</sup> January 2008 in Lusaka at Mulungushi International Conference Centre under the theme: **“Consumer, You have the Power: Towards an enlightened consumer in a liberalized economy”**.

The RA was formed in November 8, 2005. Its main purpose was to jointly establish Consumer Watch Groups (CWG) and enhance the regulatory capacity of the participating agencies through information sharing on issues of formulation and implementation of regulatory procedures.

It has been recognised that consumerism in Zambia, leaves much to be desired as most consumers are hardly aware of their rights and obligations regarding services and products they use in their daily lives. This is compounded by the absence of effective consumer advocacy groups.

The 2008 Conference delegates were drawn from a wide range of stakeholders and individuals such as from Consumer and Water Watch Groups, Communication, Energy and Water Utility representatives, academic institutions, civil society, rural representatives and the media. The topics under discussion focused on: Energy, Water and sanitation and Communication.

The then Minister of Communications and Transport Hon. Sarah Sifwanda officiated at the event.

In her speech, read by Deputy Minister of Communications and Transport Mr. Mubika Mubika, the minister noted that the conference was being hosted by three regulators working under different Ministries and that the collaboration was one that the Government was encouraging. Hon. Sifwanda stressed that the Government was also concerned with the poor quality of goods offered on the Zambian market, which are often smuggled into the country with no regard for the law. She urged the three regulators to continue making efforts to protect the consumers against counterfeit goods and poor quality services that threaten the economic gains made over the years.

The Chief Executive Officer of the Communications Authority of Zambia (CAZ), Mr. Shuller Habeenzu



Delegates at the conference

speaking on behalf of the Regulatory Alliance welcomed all the delegates to the unique and historic consumer conference. Mr. Habeenzu explained that the conference was unique because it had been organised by an Alliance of Utility regulators across the key sectors, communications, energy, water and sanitation, all key factors in enhancing the quality of life of humanity. It was also historic as it was the first ever Consumer Conference in the history of the country.

The conference's main objectives among others, included the following:

- Bridge the gap between service providers, consumers and regulators.
- Create a sensitized Zambian consumer community that is aware of its rights and obligations in the use of communications, energy and water supply and sanitary services.
- Avail service providers an opportunity to outline the challenges and constraints they face.

The keynote address was delivered by Dr. Muyenga Atanga an independent consultant. In his motivational speech, Dr. Atanga reminded the delegates on the need for consumers to have goals and visions. He explained some of the basics that consumers needed to understand before they could fully play their role as consumers, noting the supremacy of a consumer/customer as an authority of any business transaction in a market driven economy.

Other presentations were made by regulators, service providers, consumers as well as the civil society, including the Zambia Police Service.

The Conference provided an opportunity for service providers and regulators in the three targeted sectors to interact with consumers. This being the first national consumer conference presented an opportunity for:

- Consumers to regard themselves as “the reason for the existence of any business” and, therefore, feel encouraged to stand up and be counted.
- Not only strengthening the voice of the consumer of services in the three sectors, but also a “national voice” to speak on behalf of the consumer.
- Making known existence of the Zambia Consumer Association (ZACA), the association was both not known and also inactive countrywide.
- Strengthening consumer representation through harmonisation of activities of various consumer representatives, including Consumer Watch Group (CWG) and Water Consumer Watch Groups was identified. This could take the form of a National Consumer Alliance.

In his closing remarks Mr. Chanda, the CEO for NWASCO noted that the gathering had attracted over 200 people from different interest groups in the three sectors of water and sanitation, energy and tele-communication.

Honourable Guston Sichilima, Deputy Minister Energy and Water Development officially closed the conference. He congratulated the three regulators for being the first to form an alliance thereby displaying unity in diversity. The objective of creating consumer, regulator and utility linkages had been achieved.

# IN 'Cost-Plus' OUT 'IPP' - fuel pricing Mechanism

In January 2008, the Energy Regulation Board (ERB) changed its wholesale petroleum products pricing formula from Import Parity Pricing (IPP) to the Cost-Plus methodology. Since 2004 the ERB had determined the wholesale prices for Petrol, Diesel, Kerosene and Jet A1 using the Import Parity Pricing (IPP) mechanism until December, 2007. Since inception the IPP has been reviewed three times, July 2005 and January 2006, while the third review was conducted last year with the intention of engendering public confidence in the process and ensure that the views and concerns of the various stakeholders were taken into account. To this effect a public hearing was held in May last year.

Some issues of stakeholder concern were that the monthly fuel price adjustments were too frequent and had an adverse impact on cash flow planning; the use of the rail/road mode in the IPP formula was unjustifiable given that the petroleum

feedstock was transported through the pipeline; and the tax structure of petroleum products was too high. After considering all these factors, including the structural changes in the roles of the players in the petroleum industry, it was decided to change the pricing model to the cost-plus pricing methodology.

The Cost-Plus model operates on the principle that the final price of petroleum products should cover all costs in the supply chain. The model relies on information provided by the importer, the most important document being the invoice, and other known standard costs in the supply chain. This model is not entirely new to the sector as it was in use prior to the change-over to IPP. It was discontinued because of problems in authenticating the prices of some of the components of the feedstock, condensate in particular. Petroleum feedstock imported into Zambia is a commingled feedstock,

which comprises gas oil, condensate, and crude oil. In addition the model did not provide an incentive for the major players in the supply chain to be cost-effective.

The Cost-Plus model therefore ensures that the final price recovers all the costs in the supply chain. As such prices will be determined on a cargo basis, at about two month intervals, and thus introduce price stability as opposed to the monthly reviews under the IPP.

However, just like the case was with the IPP, changes in the price of oil on the international markets and the movements in the exchange rate of the Kwacha against the US dollar will still play a significant role in the Cost-plus price determination.

The January 2008 price review was the first under the newly adopted Cost-plus model that was calculated using the November 2007 cargo. The next price review is scheduled for April 2008.

## Fuel Prices stability continues in 2008

By Fred Hang'andu

By March 2008, fuel prices in Zambia had remained stable for a period of 6 months, making it the longest period of price stability in recent years. The pump prices of petroleum products i.e. Diesel, Petrol and Kerosene remained unchanged from October 2007 to March 2008, despite various factors that would have otherwise, made prices go up.

It should be observed that the price stability was as a result of Government subsidies. If left to trends on the international market, prices would have risen by not less than 10% by January 2008 and even further by March 2008. At the close of 2007, oil prices had posted a significant rise to US\$99/barrel, while March 2008 had registered a record high of US\$111.8/

bbl on the New York Mercantile Exchange.

The decision by Government to subsidise prices, helped cushion consumers against high petroleum product prices which would have had a spiral effect on other economic activities.

	January (Kwacha)	February (Kwacha)	March (Kwacha)
<b>Petrol</b>	7,191	7,191	7,191
<b>Diesel</b>	6,004	6,004	6,004
<b>Kerosene</b>	4,385	4,385	4,385

# Consumer Complaints handled in the first Quarter

In the first quarter of 2008 the Energy Regulation Board (ERB) received a total of one hundred and twenty eight (128) complaints in the energy sector specifically, electricity and petroleum issues. The highest number of complaints was in the electricity sector, with problems reported on billing, power outages, disconnection, delayed service connection, and metering. Out of these cases, power outages was the highest reported at 60 cases, while the next highest was billing problems at 40 cases.

Petroleum complaints on the other hand were far less with only a total of 4 cases reported. The four cases were all on fuel contamination.

The ERB forwarded all complaints received to the relevant utilities within the first three months of the year. Sixty one (61) complaints were resolved within the first quarter representing a 48% complaint resolution rate.

The complaints handled by the ERB in the first quarter by category were as indicated in the table & chart below:

## Complaints Received and Resolved in the first quarter

As indicated in the charts bellow, complaints relating to service interruption were relatively higher. This was due to the increase in load shedding by ZESCO in view of the power deficit the country and sub-region is experiencing. During this period there were fewer complaints relating to delayed new service connection, which have been among the highest areas of complaints on average. (why?)

## Consumer Activities Northern Region Round Up

In 2005 the Energy Regulation Board opened an office in Kitwe to cater for the Northern part of the country. The main functions of the office all to facilitate licencing operations, assist in resolving energy consumer complaints, and facilitate the provision of energy services for the Copperbelt, Luapula, Northern and North-western Province where mining activities have been increasing in the last few years, thereby requiring increased use of energy resources.

High lights of the first Quarter were of public meetings on Zambezi Rapids Hydro Limited's application for interim electricity tariffs in Mwinilunga District. Two meetings were held in Ikelenge and Nyakaseya chiefdoms. The meetings afforded a chance to intended beneficiaries i.e. energy consumers of the project to give their views on the pricing system proposed by the service provider. Prior to holding public meetings, visits were made to all the three chiefs whose areas fall under the project supply area and government leaders in the district, to brief them on this development.

There were capacity building activities conducted with Chingola and Kitwe Consumer Watch Groups. The Consumer Watch Groups met with the Copperbelt Chamber of Commerce and Industry and ZESCO Copperbelt Division management to discuss load shedding. Suggestions were made on how ZESCO could better handle the programme. Manufacturers and other commercial users of electricity expressed willingness to help ZESCO by rescheduling their operating hours when called upon to do so.

CATEGORY	RECEIVED	RESOLVED
Billing	40	22
Power Outages/Service interruption	60	27
Delayed New Service Connection	4	1
Surcharges	4	4
Disconnection	3	0
Compensation Claims	1	0
Service/ Personnel	2	0
Fuel Contamination	4	2
Poor Quality of Service	2	1
Metering	3	2
Trouble Report	1	0
Other	4	2
<b>TOTAL</b>	<b>128</b>	<b>61</b>

# Alternative Energy Sources – the case of Solar Energy

By Joseph Malama

The amount of energy from the sun (solar energy) that falls on Earth's surface is enormous. All the energy stored in Earth's reserves of coal, oil, and natural gas is matched by the energy from just 20 days of sunshine. Solar energy is energy from the sun in the form of radiated heat and light. Solar energy technologies harness the sun's energy for practical ends such as heating, lighting, and provision of electricity.

Solar electricity is electric power generated from sunlight using devices called solar cell modules. Solar power systems theory differs from other conventional forms of power in that;

- Solar power systems are based on low voltage Direct Current (DC) not on conventional mains of 220 volts of Alternating Current (AC)
- Solar power is usually stored in batteries
- Power is generated on site by photovoltaic equipment
- For systems to be economical, all energy produced must be used efficiently

At present, the solar energy's contribution to improving the electrification rate in Zambia is very minor. The use of renewable energy technology provides an effective means of electrifying areas remote from the national grid as well as helping to mitigate the power shortages that the country is experiencing.

The national energy policy of 2007 sets out the Government's intentions in the energy sector that are aimed at ensuring that the energy sector's latent potential to drive economic growth and reduce poverty is fully harnessed.

Solar energy is often overlooked because of the high initial cost of the equipment used to harvest and store it. However as the prices of wood fuel, paraffin, grid electricity rise and the environmental risks associated with other power sources are recognised, solar energy is fast becoming

attractive.

Solar energy is most easily used in applications which require relatively small amounts of heat and the solar energy systems can be tailored to the power needs of individual applications such as lighting, for computers, heating or electric borehole pumps.

Some of the important applications for which solar electric power is being utilised include;

## Household lighting and small household appliances

Night lighting is crucial for education, craft work and social activity. Televisions and radios are valued by rural communities who need information and entertainment.

### ✓ Water Heating

Solar Water Heaters are among the simplest solar thermal application, transforming solar radiation into heat, which is used to raise the temperature of water for bathing, washing, cleaning and cooking

### ✓ Small industries and institutions

Schools and small businesses in rural areas use solar electricity to power lights, light tools, computers and security systems.

### ✓ Telecommunication systems

Because telecommunication systems are often installed in isolated places with no access to power, they often use stand-alone photovoltaic systems to power radios, remote repeaters and weather monitoring equipment.

### ✓ Water pumping

Arrays of solar cell modules connected to electric pumps are used to pump water from wells or boreholes. This water is used for drinking, washing, other household purposes and for small irrigation projects.

Systems large enough to supply

enough power all of the time are more expensive than those that supply electric energy requirements most of the time.

When planning for a solar electricity system the following should be taken into account;

**Planning for growth** in electricity energy demand since addition of more appliances will increase the load and often will require additional solar modules and/or batteries.

**Estimate the load carefully.** Over-estimation of the load will increase the system considerably. On the other hand under-estimating the size of load results in continual battery problems.

**Compare cost** of installing a solar energy system against alternative energy sources such as grid power and diesel generator electricity.

Before starting, it is important to conceptualise the floor plan of installation; this helps to estimate the amount of cables and wiring materials required and to decide on the location of the battery, modules, controls, sockets and appliances.

## Some drawbacks:

- Initial cost of solar power systems is generally high. For example a solar lighting system is more economical over its lifetime than kerosene or generators, but it is very difficult for many people to raise money to buy the systems all at once
- Solar power systems require batteries for energy storage. The batteries must be maintained carefully. The performance of the systems will therefore be dependent on the quality of the batteries available on the local market.

*Continued on page 16*

## Alternative Energy Sources – the case of Solar Energy ctd..

- Appliances and lamps, which run on low voltage are not as readily available as those that run on mains power. It is however anticipated that as more people install such systems, the supply of low voltage appliances will increase.
  - There is shortfall of trained technicians to design and install solar electric systems. As a result poorly designed systems are sometimes installed by untrained personnel.
- The ERB regulates the solar energy sub-sector through the issue of licenses, which stipulate the conditions under which the licensed undertakings should operate. A Code of Practice for “Photovoltaic Systems Designs and Installation” has been produced by the Zambia Bureau of Standards in collaboration with the ERB. The code specifies technical requirements for photovoltaic modules, batteries and fittings to avoid the installation of sub-standard equipment.
- Currently only 16 companies are licensed to supply, install and maintain solar energy systems in Zambia.

### Solar Companies licensed with ERB

COMPANY	PHYSICAL ADDRESS	POSTAL ADDRESS	CITY	FAX
Suntech Appropriate Technology Limited	Plot 20/1504, Off Kafue Road	P. O. Box 360389	Kafue	0211-312999
Electrical Maintenance Limited	Plot 195, Luanshya Road East-End	P. O. Box 31189	Lusaka	0211-226551
Hazida Communications Limited	Plot 8485, Lumumba Road	P. O. Box 33772	Lusaka	0211-287292
Sun Solar Systems and Supplies Limited	Interchem Building, Kabelenga Road	P. O. Box 31835	Lusaka	0211-286072
Solatech Limited	Plot 4017 Los Angeles Boulevard	Private Bag 98	Lusaka	
Davies and Shirliff	Plot 14072 Lumumba Road	Private Bag 112 FW	Lusaka	0211-288010/11
Melcome Marketing & Distributors Limited	Plot 7200 Kachidza Road	P.O. Box 35722	Lusaka	0211-286346
Solar Tech Limited	Plot 7221 Kachidza Road	P.O. Box 35751	Lusaka	0211-288501
Solar power Africa Limited	Plot 7A Lusaka Hotel Building		Lusaka	
The Electric House	Plot 236B Chilimbulu Road	P.O. Box 35914	Lusaka	0211-237398
Paresh Fashion Centre	Plot 8170 Chilimbulu Road	P.O. Box 320095	Lusaka	
Zamshelter Solar Power Systems	Plot F110 A/191 Musonda Ngosa Road	P.O. Box 35960	Lusaka	0211-222565
GMC Technologies	Plot 1662 Panganani Road	P.O. Box 35178	Lusaka	0211-237303
Minjex Enterprises Limited	Plot 4069 Prescott Road, Industrial Area	P.O. Box 20176	Lusaka	0211-210713
Tresca Electronics and Computers Limited	Plot 134 Matuka Avenue	P.O. Box 21917	Kitwe	0212-731694
Chloride Zambia Limited	Plot 7 Freetown Road, Martindale	P.O. Box 20580	Kitwe	0212-227991

# SAFETY, HEALTH AND ENVIRONMENT CORNER

By Allen Polito

## FIRE PRECAUTIONS AND FIRE CONTROL AT BULK FUEL STORAGE DEPOTS

A fuel depot, also called a tank farm or oil terminal, is a facility for the storage of petroleum products. A typical fuel depot has tankage and gantries for the receipt and discharge of products into fuel tankers for onward transportation to filling stations or other users. A bulk fuel depot is therefore an important link in the petroleum products supply chain. A Bulk fuel depot is necessary to mitigate against possible interruptions in the supply chain e.g. refinery shut down, drop in finished products production or sudden halt in the supply of crude oil to the refinery.

The petroleum products stored at fuel depots are flammable and potentially hazardous materials. The degree of the hazard is characterised by volatility, (i.e. boiling point), flash point, flammable limit and spontaneous ignition temperature.

Any flammable substance will be characterised by an upper and lower flammable limit between which the gas or vapour mixed with air is capable of sustaining combustion.

Fire protection is therefore a primary consideration at any bulk fuel storage facility.

## GENERAL CONSIDERATION - FIRE PREVENTION AND PROTECTION

The following issues are fundamental during site evaluation with respect to fire prevention and protection as part of a wider risk assessment for petroleum installations:

- Nature of facility and type and quantity of materials stored.
- Effect of prevailing winds and proximity to fire hazards such as buildings, factories, plants etc.
- Distances of buildings and storage areas from the site boundary, administration buildings, service areas etc
- Fire prevention and protection facilities, location of hydrants, access around facility, availability of water, standard of cover provided by the Local Fire Authority and systems for fire detection, particularly for remote or unmanned sites.
- The contour of the ground, including hollows, ditches and streams, are also considered in relation to the

possible effects of accidental release of flammable liquids and vapours heavier than air, and to fire-fighting water run-off.

## FIRE PRECAUTIONS AND FIRE CONTROL IN BULK FUEL DEPOTS

The protection of facilities against fire hazards in bulk depots is usually achieved by a combination of good engineering design and construction standards, safe operational procedures, efficient plant and equipment maintenance.

The following are some of the safety measures and systems that should be put in place as far as fire precautions and fire control at fuel depots is concerned:

- Training (Safety Organization) - Each facility shall have a safety organization the size of which will depend upon the complexity of the operation. The safety organisation shall advise the management on the technical and legal aspects of safety and shall provide a programme for the improvement of safety performance (training programmes).
- Fire Drills -After key personnel have been trained, fire drills shall be conducted regularly to maintain a competence level. A fire practice shall be carried out once every calendar year, and shall include the local fire department's personnel and appliances.
- Co-operation with Local Fire Authorities - is essential so as to ensure that the fire brigade knows in advance the layout of the depot, nature of the product stored and special risks (if any), what equipment and facilities are available, where they are located, and how they are used.
- Location Plan - A layout plan of the site shall be displayed in an easily accessible location so that authorized persons can have easy access to it in an emergency. The plan should indicate the position and the nature of stored product, product pipe lines and valves, water pipelines, hydrants, fire appliances, fire control Centre, emergency stop buttons, and access routes for fire-fighting equipment to reach all parts of the plant.
- Tank Identification - All tanks shall have their numbers painted on in two positions, one that is visible from

the fire-service access route and the other opposite it.

- Fire-fighting equipment - The following fire-fighting equipment should be provided at each depot: portable and mobile fire-extinguishers, compatible fire-fighting hoses and couplings, hydrants, fire alarm, adequate and reliable supply of water, alternatively powered water pump, sufficient foam compound.
- Emergency Numbers - A notice, on which the telephone numbers of the fire service, responsible person and other emergency services are clearly recorded, shall be displayed near every telephone, at the control centre and at the gate of the site.
- Warning Notices/Symbolic signs - Adequate warning notices/symbolic signs such as No Smoking, No Naked Light etc should be displayed at strategic positions within the fuel storage facility e.g. gantries, entrance, tank farm etc.
- Emergency Shut off Switch - An emergency shut off switch to cut off power supply to the pumps and the gantry in an emergency should be located in an easily accessible area.
- Earthing and Lightning Protection - The storage tanks should generally be connected to an earthing system to dissipate the charge that may arise from fluids in motion or lightning strike.
- Bundwall - The storage tanks in a depot should be enclosed in a bundwall that can contain at least 110% of the total tankage. The bunded area should be linked to an oil interceptor through an outlet valve. The bundwall minimizes the risk of the fire spreading to other installations within the fuel storage facility.
- Ignition Sources - Any device or action that could cause a flame or spark shall not be permitted in restricted areas, unless authorized by an appropriate permit e.g. welding. Static electricity etc.
- Access Control - All points of entry to depots shall be so planned that persons or passenger vehicles that enter or leave the depot can be observed. Unauthorized persons shall not be permitted access to the depots. Locomotives and Rolling Stock should not be permitted to enter hazardous areas, unless they

- comply with an approved standard.
- Housekeeping and vegetation - The site shall be kept free from obstructions and combustible rubbish. Vegetation that is liable to dry out and become a fire hazard shall be kept short and cuttings shall be removed.
- Absorbents - Absorbents are basically recommended for containing spillages. Adequate supplies of absorbents shall be available at all times.
- Work Permits - Before any construction, repair or maintenance work is carried out, the appropriate certificates of work permits shall be issued.
- Testing and Records - All portable and mobile fire extinguishers shall be examined and tested periodically in accordance with approved standard requirements or the manufacturers' instructions. All fire-fighting equipment and systems shall be inspected once every calendar year by a competent person.

## CONCLUSION

It is imperative that health, safety and environment issues, particularly fire prevention and control, remain key at bulk fuel storage facilities to ensure that products are handled and stored safely and that there are no leakages that can damage the soil, damage the water table or pose a fire risk.

With the aforementioned in mind, it goes without saying that bulk fuel storage facilities (depots) are expected to have fire precautions and fire control standards of the highest level possible. ZS 385: Part 1 (The Petroleum Industry Code of Practice – Storage and Distribution of petroleum products in above-ground bulk installation) and ZS 604: Part 1 (The Petroleum Industry Code of Practice - Fire precautions at petroleum refineries and bulk storage installations) are some of the existing Zambian standards that stipulate the minimum fire precautions and fire control requirements. All OMCs or bulk fuel storage facility operators in Zambia

are expected to be conversant with these provisions and furthermore, the licence conditions compel them to ensure complete adherence to the standard requirements at all times. Non-adherence to these standards is a contravention of the Distribution Licence conditions, and can attract enforcement action from the Energy Regulation Board (ERB).

## REFERENCES

ZS 604: Part 1 - The Petroleum Industry – Code of Practice - Fire precautions at petroleum refineries and bulk storage installations, Zambia Bureau of Standards, 2003

ZS 385: Part 1 – The Petroleum Industry – Code of Practice – Storage and Distribution of petroleum products in above-ground bulk installation, Zambia Bureau of Standards, 2003

ZS 402 - The Classification of Hazardous locations and selection of electrical apparatus for use in such locations – Code of Practice

# ERB commemorates international women day



ERB staff members off loading donated items for the Transit Home in Matero

The ERB ladies commemorated this day by doing work at “a transit home in Matero”. This home is run under the auspices of the Ministry of Community Development and Social Services and caters for the aged, out of town patients discharged from the University Teaching Hospital (UTH), mentally challenged people and the abandoned.

Items donated to the residents of the transit home included necessities such as foodstuffs, clothing and cleaning detergents. Blankets from the home were taken to Maina Soko Military Hospital for washing. The hospital had graciously agreed to clean the blankets using their industrial washing and drying machines.

The group also spent time with the elderly people at the transit home. Some of the team members helped to make breakfast for the residents.

Friends, relatives and male colleagues willingly joined in the activities too. The whole ERB group was in a jubilant mood, giving truth to the adage that ***‘it is better to give than to receive’***

1<sup>st</sup> March 2008 was International Women’s Day. This year, the Energy Regulation Board (ERB) joined the rest of the world in commemorating this day by praising all the ladies. The theme for this

year’s celebration was ‘Investing in women and girls’

The Zambian government declared the day a public holiday.

# LOAD SHEDDING – DO’S AND DON’TS

By Davies Mupenda

Since load shedding will be around for some time, the following are a few tips on what to do and what not to do in order to conserve energy, avoid accidents and damage to your appliances.

## DO’S

- Follow all energy saving or conservation tips given from time to time by the service provider, ZESCO in this case, the Energy Regulation Board (ERB) or other reliable sources. This information is readily available at all ZESCO offices or the ERB offices in Lusaka and Kitwe. You can also visit the two organisation’s websites for further information.
- Change your consumption pattern, for example, you can prepare some meals, bake, iron clothes, or irrigate your garden, and so on, during off peak hours so that during peak time you only use electricity for unavoidable tasks.
- Get information from the service provider as to when load shedding is likely to affect your area. Please note, though, that the load shedding schedule provided by ZESCO is only a guide. Actual load shedding depends on available electricity at any particular time. You may not be load shed on the indicated time that you are supposed to be according to the schedule. Remember that sometimes power outages are as a result of faults other than load shedding. So whenever you have no power, get in touch with the service provider for information.
- Feel free to discuss load shedding proposed schedules with ZESCO officials. You may just make valuable suggestions to the company on the matter, which may prove workable. This recently happened on the Copperbelt where the Chamber of Commerce and Industry suggested that instead of some of their member organisations being load shed in the middle of the week they can be load shed on Monday so that they have power from Tuesday to Saturday and in this way their production cycles are not disturbed. Institutions providing critical social services which require



**Remember, though, that when making any proposal, it is a give and take situation.**

use of electricity at certain times of the day have also made special requests to the service provider and in some cases their requests have been honoured.

- Switch off all appliances you may not be using during peak periods. These would include air conditioners, heaters or even fridges. It is actually possible for some stored commodities such as drinks, water and so on, to remain cold even when the fridge has been switched off for some time, say one or two hours especially in winter.
- Switch off and disconnect all appliances after any power outage. When supply is restored, please allow for some minutes so that supply is stabilised. This is to avoid damage to your appliances.
- Replace all ordinary bulbs with fluorescent tubes or energy savers. If you have to use ordinary bulbs

at all, please look for 40 watt or 60 watt bulbs instead of the 100 watt bulbs as these use a lot of power and contribute to load shedding.

- Consider buying energy saving appliances.
- Consider insuring valuable appliances such as machinery and computers.
- Always have alternative sources of energy handy: matches, candles, charcoal, primus stoves, gas stoves, lights with chargeable batteries and so on.

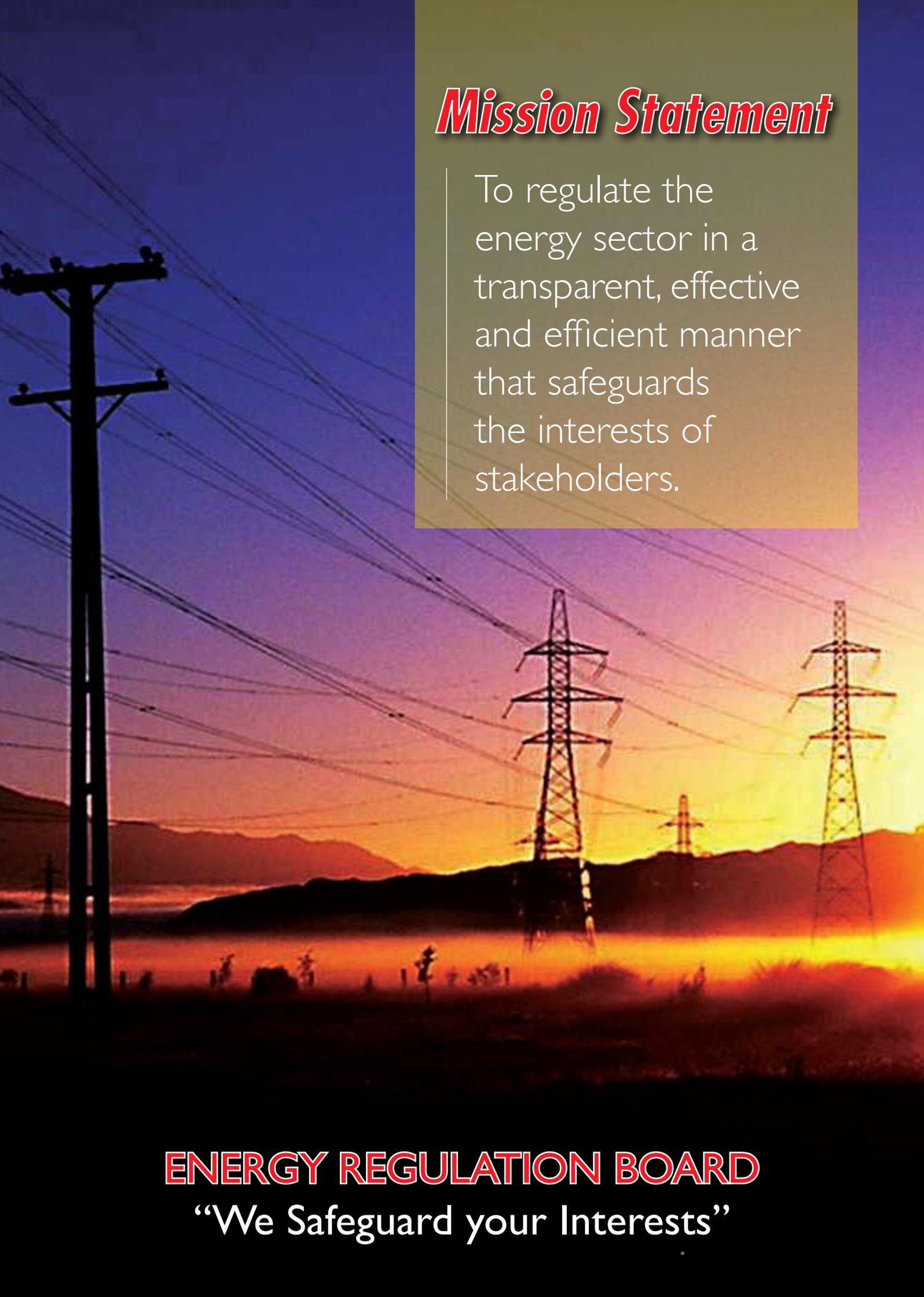
## DON’TS

Many of these actually are just opposites of the dos and so only a few will be discussed here.

- Don’t leave your geyser on all the time.. Apart from using a lot of electricity, making it unavailable to other consumers and thereby contributing to load shedding, geysers can increase your electricity bills significantly when left on for a long time. Some people have actually tried this in their homes and discovered that the whole family is able to use warm water in the morning when the geyser has only been on from say 04:30 hours to 06:00 hours.
- Don’t touch or otherwise temper with electricity lines when you are off supply as supply can be restored any time even before your scheduled load shedding time ends.
- Don’t overstock foodstuffs such as fresh fish, fresh milk and meat as these may just go bad as a result of power outages. Similarly don’t prepare a lot of dough if you intend to bake.

More updates about load shedding will be given in later issues of this newsletter or in the ERB Column in the Sunday Times of Zambia.

Borrowing from the words of our first Republican President Dr. Kenneth Kaunda regarding HIV/AIDS, **“by working together, we can conquer” load shedding!**



## ***Mission Statement***

To regulate the energy sector in a transparent, effective and efficient manner that safeguards the interests of stakeholders.

**ENERGY REGULATION BOARD**

**“We Safeguard your Interests”**