

SPARK



ELECTRICITY CONTROL BOARD

Official Newsletter for the Electricity Control Board

June - July 2014

CEO's Message



Mrs Foibe Namene, CEO: Electricity Control Board

“Energy and electricity is no longer a privilege, it is a matter of human right.”

It is common knowledge that the Namibian Electricity Supply Industry (ESI) faces significant challenges in both the short, medium to long term. I believe the manner in which the ESI policy and regulatory issues are developed and implemented over the next couple of years will have significant impact on the Electricity Supply Industry/Electricity Development Industry (EDI) and the Namibian economy and society.

The margin for error is very narrow and it is therefore important that top class strategic leadership is provided for the ESI/EDI development and alignment with national development goals.

Draft Energy/Electricity Bill

There is a strong impression that the ESI/EDI is currently defocused and in need for a strong legal direction. The Bill for me represents that ideal vehicle for the new policy

framework and is the basis of our transformation. Who else thus will be suitable as a catalyst than the Regulator? It is imperative that the rights and obligations of all the participants be defined according to transparent and non-discriminatory regulations and laws. This will secure that generation and transmission investment, and trading and distribution are done in an orderly and transparent manner so that security of supply is eventually ensured.

Regional Electricity Distribution companies (REDs)

Although the initial work for the formation of the REDs started a decade ago, some very important work still needs to be completed (e.g. the issue of the number and boundaries of the REDs, the understanding and determination of surcharges and how they are used). Thus there is a need for a comprehensive plan and consultation.

Independent Power Producers (IPPs)

Unfortunately the IPPs Framework in Namibia has not been good enough, and sadly the progress has been very poor. Currently the key stakeholders in the process seems not to be on the same length hence the stop, and this has hampered the success of the establishment of IPPs. As a result of this, the country and the economy is at risk of a single supplier, although it has been successful in keeping the lights on so far. It must be said that this is not very sustainable in the long run. The world is moving away from monopoly supply and time is of the essence for an innovative framework for true IPP development in Namibia.

Tariff process & Determination

Though in existence, I believe a transparent process, understood by the public and all stakeholders is needed. I believe this should be documented as well as driven and continuously refined by the Regulator.

Energy and electricity is no longer a privilege, it is a matter of human right.

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THE ELECTRICITY CONTROL BOARD INTRODUCES:

Foibe Namene Chief Executive Officer

The Board, Management and Staff of the Electricity Control Board are delighted to welcome Mrs. Foibe Namene as the new Chief Executive Officer of the Electricity Control Board effective 1 June 2014.

“I am honoured to be tasked with leading the Electricity Control Board, to contribute to the national development of our beloved country through the special commodity it regulates. I have accepted the appointment with excitement and profound sense of responsibility upon me,” said Mrs. Namene.

Mrs. Namene will replace Mr. Siseho Chibeya Simasiku who has been the ECB’s Chief Executive Officer since its inception in 2000.



14 Years of Successful Regulation

Editorial Note



The Electricity Control Board is normally inundated with queries, whether technical or operational. And it's normally prepared for these queries.

But something interesting happened during the period leading to this edition. Never before did the institution and its employees face a barrage of queries in the manner it did this time.

One would have thought that the question was answered when the outgoing CEO announced his successor and when the person would assume duty. But it would be registered - softly for that matter - at the most unexpected time of the conversation: 'Oh, who is your new CEO? When is the new CEO coming?'

Well, wonder no more, she has assumed office and gone straight to work.

After the new CEO assumed office - and just when you thought the chapter was closed - teasingly and innocently it came: 'So, Mr. Simasiku is really gone? What is he doing now?' Look out for the answer to this question in our next edition.

As if that was not enough, some members of the public rubbed it in with the tariffs. "Why do you people allow NamPower and the REDs to increase their prices? Electricity is now so expensive." The Regulator explained the above process in the media, but clearly more still needs to be done. The SPARKED corner shed light - as a way of further informing and educating the public - on the tariff determination process.

And finally, there was the 2014 FIFA Soccer World Cup. The question: Which team do you support, was accompanied by a humble plea to ensure that the distributors keep the lights on during the soccer spectacle.

One can only hope that we all enjoyed the international showpiece, whether LIVE or delayed. How about another round of applause for consistency, enriched technical and tactical approach, discipline on and off the pitch as well as perseverance for the 2014 FIFA Soccer World Cup Champions, Germany?

Enjoy your reading and keep warm!

ECB provides seed funding to establish Namibia Energy Institute



Polytechnic Rector Tjama Tjivikua; Selma Utoni, Director of Energy in the Ministry of Mines and Energy and Rojas Manyame holding the N\$150 000.00 sponsorship cheque from ECB towards the establishment of the Namibia Energy Institute.

“NEI will undoubtedly contribute to Namibia’s industrialisation”

The Electricity Control Board donated N\$150 000.00 as seed funding towards the establishment of the Namibia Energy Institute (NEI). The Regulator was the first to respond to an appeal by the Ministry of Mines and Energy to provide financial support for the establishment of the NEI, which replaced the Renewable Energy and Energy Efficiency Institute (REEEI).

Speaking at the occasion, ECB General Manager for Regulation, Rojas Manyame, said the establishment of the NEI came at a time the national development blueprint NDP4 recognise the energy sector as the vehicle to development, hence the Regulator’s consistent call for the prioritization of the energy sector if meaningful development and Vision 2030 is to be achieved.

“It is therefore imperative that the energy sector be properly marketed by all inside and outside the borders of this Republic. I give you my word that the Regulator will continue to do that in its interactions with peers and investors inside and outside the Namibian borders,” said Manyame.

He reiterated that the Regulator deemed it fit to support the noble idea, because the NEI will ‘undoubtedly contribute to Namibia’s industrialisation’ through its four centres namely:

1. Centre for Renewable Energy and Energy Efficiency
2. Centre for Petroleum
3. Centre for Electricity Supply
4. Centre for Nuclear Sciences

Each Centre will in turn focus on a different field related to the energy sector, allowing the NEI to consolidate research and development across the energy field in Namibia beyond the focus of its predecessor.

The NEI will provide services such as:

- a. Research and Development
- b. Training and Capacity Building
- c. Consultancy and Advisory Services,
- d. Energy Projects Management

During its launch in Windhoek, Polytechnic Rector, Tjama Tjivikua underscored the fact that the NEI envisioned to become a leading institute for energy research and development in Africa and beyond whose mission is “to contribute to Namibia’s industrialisation by linking energy research, technology, policy and education to the needs of industry, and to national socio-economic development imperatives, initiatives and programmes.”

Study conducted on electricity price elasticity for Windhoek households



Mathias Moyo, ECB Statistician

Price elasticity of demand is a measure used in economics to show the responsiveness or elasticity of the quantity demanded of a good or service to a change in its price. A study was conducted in this regard with an objective to measure the responsiveness of electricity demanded by Windhoek households when the price of electricity and household income changes.

Methodology

The demand for electricity has been modelled in a variety of ways in different studies. The most common variables that have been modelled as functions include income, price of electricity, price of substitute of electricity and seasonality (winter and summer). The study expressed electricity demand as a function of real price (tariff) of electricity and real income (Gross National Income). It did not however include the price of a substitute of source of electricity and seasonality variables because data on these variables were not available during the study period.

In this study consumption of electricity will be referred to as quantity, and takes the following form of a linear demand model:

$$QX = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon_1 \quad (1)$$

QX = an index of electricity quantity (base year = 2009)

α = constant (equals quantity of X when all other variables = 0)

$X_1 = PX_{1t}$, the "own" price of a given electricity $\{ \beta_1 = \frac{\Delta QX}{\Delta PX_1} \}$

X_2 = measure of income (Inc) $\{ \beta_2 = \frac{\Delta QX}{\Delta Inc} \}$

ε_1 = error term

The price elasticity of demand for electricity will be calculated using the *midpoint method* (Sloman, 2005) of using the average prices, income and quantities as follows:

$$\beta_1 * (PX/QX) \text{ for "Own" price elasticity} \quad (2)$$

$$E = \beta_2 * (Inc/QX) \text{ for Income elasticity} \quad (3)$$

Results

Figure 1 Summary of basic statistics

Variable	Coefficient	t-statistics	Significance
Electricity Real Price	24344.58138	2.05369872	0.04584289
GNI (Income in N\$)	-41.53800383	-1.6076857	0.114898785
	0.135873454	F = 3.537853039	0.037410223

Figure 2 Averages of variables

Variables	Mean
Electricity Consumed Quantity (KWh)	15989408.85
Electricity Real Price (C/KWh)	242
GNI (Income in N\$)	126135

Elasticity for "own" Electricity price:

$$E = \beta_1 * (PX/QX) = \text{Coefficient} * (\text{Mean of Price}/\text{Mean of Quantity})$$

$$= (24344.58138) * ((242) / (15989408.85))$$

$$= 0.368456$$

$$= 0.368$$

Elasticity for Income for households:

$$E = \beta_2 * (Inc/QX) = \text{Coefficient} * (\text{Mean of Income}/\text{Mean of Quantity})$$

$$= (-41.53800383) * ((126135) / (15989408.85))$$

$$= -0.327679163$$

$$= -0.328$$

Interpretation of the outcome

The calculated "own" price elasticity is 0.368, this result indicates that a 10% increase in price will result in a 3% increased demand of electricity for Windhoek residents. The income elasticity is 0.328, this indicates that a 10% increase in income households will result in a decrease of 3% consumption in electricity.

Utility Regulators Courts Incentivised Regulation



Representatives of utility regulators attending an incentive based regulation training in Florida, USA.

Recent decades have seen a worldwide shift in the provision of electricity, telecommunications, water, and gas utility infrastructure. Greater private participation, commercialization, and liberalization have led countries to place new emphasis on their

ability to establish sustainable regulatory arrangements that carry credibility with investors, are perceived as legitimate and fair in the eyes of the public, and deliver greater efficiency for the economy as a whole.

Many countries are responding to these challenges by creating utility regulatory agencies or adapting existing institutions

so they function more effectively. Newly appointed regulators play a critical role in this new environment: their ability to effectively

perform regulatory functions at the interface among government, the private sector, the public, and other interest groups is a key factor in influencing the implementation of reforms and the sustainability of regulatory arrangements.

This also creates new rules on how companies may pursue these markets. To ensure that operators are able to thrive, infrastructures are developed, regulation is sustainable, and benefits are delivered to custom-

ers, it is essential that both industry and those responsible for implementing regulatory policies understand the strengths and limitations of various incentive regimes, market reforms, and regulatory decision-making processes.

At the same time, the introduction of new functions has increased the demand for professional training for utility regulators.

One such training is the World Bank and the Public Utility Research Center (PURC) at the University of Florida which contribute to improved regulatory performance in the electricity, telecommunications, water, and gas industries. The training is designed to enhance the economic, technical, and policy skills required for implementing policies and managing sustainable regulatory systems for infrastructure sectors.

About 70 utility regulators and government officials from across the world attended the training this year to learn methods of translating principles into practice, regulatory design, economic decision making and financial analysis appropriate for different situations.

Southern African countries represented at the training include Malawi, Mozambique, Namibia, South Africa, Zambia and Zimbabwe.

Regional Regulators And Regulatory Associations Of Emerging Markets Entrench Cooperation



Representatives of energy regulators and Regulators Regional Associations attending the second Energy Regulators Regional Association (ERRA) meeting in Johannesburg, South Africa.

The Energy Regulators Regional Association (ERRA), a voluntary organization composed of independent energy regulatory bodies primarily from the

Central European and Eurasian region with affiliates from Africa, Asia the Middle East and the USA, mooted the idea of seeking cooperation among regional regulatory associations of emerging markets in 2013. ERRA successfully convened the first ever meeting in April 2013 in Istanbul, Turkey followed by another meeting in Johannesburg South Africa this year which affirmed and expounded on its deliberations. The noble idea for these fora was to foster cooperation and exchange of regulatory experience in relevant areas of interest for emerging energy markets and to be attended by the following Regional Regulatory Associations (RRAs) and their member regulators:

- Regional Electricity Regulators Association of Southern Africa (RERA)

- African Forum for Utility Regulators (AFUR)
- Association of Ibero-American Regulators (ARIAE)
- ECOWAS Regional Electricity Regulatory Authority (ERERA)
- Energy Regulators Regional Association (ERRA) for Central European and Eurasian Regions
- Association of Mediterranean Energy Regulators (MEDREG).

The Regional Regulatory Associations affirmed their support to ERRA to create a sustained platform for exchange of views and regulatory solutions related to the challenges faced by National Regulatory Authorities (NRAs) during the energy market reform and development processes. Worth noting regarding regulatory developments was that although the long term goals are similar to the National Regulatory Authorities regulating developed energy markets, the priorities and stages of market reforms in the countries with emerging economies and developing market conditions are, in most instances, substantially different.

For the National Regulatory Authorities and Regional Regulatory Associations in emerging economies and energy markets, it was evident that the common goals and challenges, though with some differences, were: attracting investments, supporting increased access to electricity, creating regional markets, supporting (empowering) consumers, energy security and affordability. Another subject covered was the much debated regulator's role, independence and relationship with the Government. Notwithstanding the different interpretation of independence/autonomy, a general view was expressed to the effect that good quality or effective regulation was an appropriate requisite to enable regulators secure their "autonomy". Furthermore, the bodies noted that there was scope to compare major regulatory indicators such as autonomy, transparency and responsibilities and resources of the NRAs based on a common method that could be useful for the members of the RRAs.

On access to electricity, major supply challenges were observable in Africa and the access levels are relatively low. The platform recognised the need for regulators to play a critical role in creating enabling investment environments to facilitate new generation capacity. Pertinent to this enabling environment are elaborate regulatory framework, clear and harmonized market design and rules. There is also need for special attention to issues of affordability of end-user prices, given the fact that majority of the populations, especially in Africa, are vulnerable and low income earners. Some of the possible interventions include budgetary subventions, cross subsidization within the tariff structures, establishing appropriate regulatory frameworks for light-handed regulation and mini-grids could provide an alternative and least cost options for providing access to remote and low income communities.

As regards the market structures and operational models, the forum noted that most of the national markets in Africa and in the East Asia and Pacific region are in the early stage of market-reform process with common features of vertically integrated state-owned enterprises playing dominant roles. However, some regions such as MEDREG have ambitious plans to create a regional system and market operator. On affordability and customer issues, it was reiterated that regulators cannot neglect general affordability issues, low bill collection rates and non-technical losses. In addition, the empowerment of customers requires education and information. In the context of regional market building, the stages of development were at different levels. The importance of gradual development processes and regional coordination and compatibility among national policies and role clarity with regard to involvement of players such as transmission system operators (TSOs) and National Regulatory Authorities (NRAs) was recognised and reiterated.

SPARKED CORNER

Question: How does the Electricity Control Board determine a tariff for a specific financial period?

Answer: The ECB derives its mandate from the Electricity Act 4 of 2007. The core mandate of the ECB amongst others is to:

- a) exercise control over and regulate the provision, use and consumption of electricity in Namibia;
- b) oversee the efficient functioning and development of the electricity industry and security of electricity provision;
- c) ensure the efficient provision of electricity.

Section 27 of the Electricity Act empowers the ECB to determine tariffs and allows the Board to develop tariff determination methodologies.

According to the Electricity Act (2000) which was later repealed by the Electricity Act 4 of 2007, the ECB is tasked with implementing Government's policy for the Electricity Supply Industry (ESI) as set out in the White Paper on Energy Policy of 1998. An important element of Government's policy relates to electricity pricing reform.

Government's stated objectives are that electricity tariffs in Namibia should:

- be based on sound economic principles;
- be cost reflective as far as possible;

- reflect long-run marginal cost of supply; and
- give all current ESI participants and potential participants a level playing field.

To support the creation of an electricity market in Namibia, in line with Cabinet's November 2000 decision on the ESI reform, the ECB commissioned a National Electricity Tariff Study' for Namibia in March 2001. The overall objective of the study was to 'develop a transparent & cost-reflective electricity tariff methodology' for Namibia, with a particular focus on harmonisation of end-user electricity tariffs charged by distributors in the various parts of Namibia.

Over the years the ECB has developed regulatory tools to determine electricity tariffs in line with the approved tariff methodology. The applicable methodology is the cost plus (rate of return) on assets of the utility, whereby the costs should be approved by the regulator and this includes the following costs: electricity generation, import, operating and maintenance of infrastructure, customer services, depreciation, overhead and regulated return.

The utilities submits their tariff increase requests to the ECB on an annual basis, the ECB then review the submitted request to ascertain and determine a tariff based on the cost the specific utility is going to supply electricity to the customer.

The above process entails NamPower applying first in February and later once the NamPower tariff is approved then the distributors will apply because they buy their electricity from NamPower.

Know your electricity infrastructure Transmission



Electricity or power transmission is the bulk transfer of electrical energy from generating power plants to electrical substations located near demand centers. Transmission lines, when interconnected with each other, become transmission

networks. The combined transmission and distribution network is known as the "power grid" or just "the grid", transmitting electricity through overhead power lines as illustrated below.

Goodbye ECB

Underground power transmission is sometimes used in urban areas or sensitive locations such as areas prone to natural disasters like hurricanes and tornadoes. Underground cables take up less right-of-way than overhead lines, have lower visibility, and are less affected by bad weather. However, faults in buried transmission lines take longer to locate and repair.

A transmission grid is a network of power stations, transmission lines, and substations. A transmission substation such as the one in the picture below decreases the voltage of incoming electricity, allowing it to connect from long distance high voltage transmission, to local lower voltage distribution. It also reroutes power to other transmission lines.



A transmission grid is a network of power stations, transmission lines, and substations.

Engineers design transmission networks to transport electricity as efficiently as feasible, while at the same time taking into account economic factors, network safety and redundancy. These networks use components such as power lines, cables, circuit breakers, switches and transformers. The transmission network is usually administered by a system operator.

To ensure safe and predictable operation the components of the transmission system are controlled with generators, switches, circuit breakers and loads. The voltage, power, frequency, load factor, and reliability capabilities of the transmission system are designed to provide cost effective performance for the customers.



One of his major accomplishments is the establishment of the Revolving Fund on Renewables.



Former ECB Chief Executive Officer Siseho Simasiku saying goodbye to his employees. Simasiku's message was one of hard work, dedication and perseverance in leaving a lasting legacy for the Regulator.

The Electricity Control Board bid farewell to its Founding CEO, Siseho Chibeya Simasiku.

He became CEO of the Electricity Control Board since his appointment in 2000.

Before establishing the ECB in 2000, Simasiku worked for the Ministry of Mines and Energy. He joined the Ministry in 1993 as a Chief Energy Researcher. In 1995, he was appointed Director of Energy and in 1997 as the Permanent Secretary of Mines and Energy.

One of his major accomplishments is the establishment of the Revolving Fund on Renewables. The fund was established with the assistance of the German GTZ, the Norwegian NVE and it is still operational. He is also credited with the establishment of the National Energy Policy.

Before his illustrious career in the energy sector, Simasiku worked for the Ministry of Works, Transport and Communications as an Assistant Engineer.

His first paying job after graduating in 1978 was being a lecturer at the University of Zambia in Electrical Machines and Power Systems, where he worked for a year before joining the Zambia Electricity Supply Corporation (ZESCO) for three years.

Simasiku qualified as an Electrical Engineer in 1978 from the Slovak Technical University in Czechoslovakia. He specialised in nuclear power plants construction, and operation of nuclear power plants, making him one of the first black Namibians to study nuclear engineering, especially in heavy currents.

He was politically active until 1992.

Sparky Moments



Representatives of government and the private sector during the inauguration of the USIB Concentrator Photovoltaic Plant last month.



RERA Steering Committee members at the Windhoek Country Club and Resort earlier this year.



Sam Ngoni Zaranyika (in black suit with check shirt) of the Zimbabwe Energy Regulatory Authority (ZERA) being welcomed by ECB staff during his weeklong attachment with the regulator.



ZERA Senior Engineer Sam Zaranyika enjoying a traditional meal with ECB staff at Xwama in Katutura.



SADC Executive Secretary Dr Stergomena Lawrence (in black and silver) flanked by RERA Executive Secretary Elijah Sichone and RERA Chairperson Phindile Baleni during a courtesy visit while on an official mission in Windhoek.



ECB Manager for Economic Regulation, Pinehas Mutota explaining the 2014/2015 financial period tariffs to National Radio listeners on the 9th Hour. Next to him is the host of the program, Kalilo Kalilo.



ECB employees celebrating the kick-off of the FIFA 2014 World Cup that took place in Brazil.

