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## GOVERNMENT NOTICE

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**DEPARTMENT OF MINERALS AND ENERGY**

**No. 1398**

**19 December 2008**

*ELECTRICITY PRICING POLICY*

*(EPP)*

*OF THE*

*SOUTH AFRICAN ELECTRICITY SUPPLY INDUSTRY*

*DEPARTMENT OF MINERALS AND ENERGY*

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**ABBREVIATIONS:**

AMR:	Automatic Meter Reading
CFL:	Compact Fluorescent Light
CDM	Clean Development Mechanism
COS:	Cost of Supply
DEPP:	Developmental Electricity Pricing Programme
DME:	Department of Minerals and Energy
DPE:	Department of Public Enterprises
DPLG:	Department of Local Government
DUOS:	Distribution Use of System
DSM:	Demand Side Management
DTI:	Department of Trade and Industry
EDI:	Electricity Distribution Industry
EPP:	Electricity Pricing Policy
ESI:	Electricity Supply Industry
FBE:	Free Basic Electricity
HV:	High Voltage
IEP:	Integrated Energy Planning
IPP:	Independent Power Producer
LRMC:	Long Run Marginal Cost
LGMSA:	Local Government Municipal Systems Act
LV:	Low Voltage
MV:	Medium Voltage
MSOE:	Municipal Surcharge on Electricity
NIRP:	National Integrated Resource Plan
NPA:	Negotiated Pricing Agreement
NRS:	Rationalised User Specification
NERSA:	National Energy Regulator of South Africa
PPA:	Power Purchasing Agreement
RED:	Regional Electricity Distributor
ROA:	Return on Assets
ROE:	Return on Equity
SAPP:	Southern African Power Pool
TOU:	Time of Use
TUOS:	Transmission Use of System
WEPS:	Wholesale Electricity Pricing System
WP:	White Paper

**DEFINITIONS:**

Avoided system cost	The cost that a utility would have incurred to meet its supply obligations if it did not buy power from another party.
Base-load demand	The regular, consistent electrical demand required at any time of the day/ night or the lowest point on the load demand curve. Alternatively, "base-load demand" means a relatively continuous level of electricity demand.
Connection charge	A charge recouped from the customer for the cost of providing new or additional capacity (irrespective of whether new investment is required or not). This is recovered in addition to the tariff charges as an up-front payment (connection fee) or as a monthly charge where the distributor finances the connection.
Cost of supply (COS) study	Standard procedure for deriving and allocating costs of supply, used for the design of tariffs. This does not include determining the connection charge.

Cost-reflectivity	The pricing method to reflect the full economic cost of supplying electricity to a customer.
Cross-subsidy (within the sector)	Over-recovery of revenue from customers in some tariff classes whether intentional (e.g. electricity levies) to balance the under-recovery of revenue from customers in other tariff classes (i.e. electricity subsidies) as calculated in the <i>cost of supply</i> study or unintentional by way of unidentified surcharges within the ESI or as a natural consequence of cost pooling. (Note definition for subsidies).
Dedicated network	Customer dedicated assets are assets created for the sole use of a customer to meet the customer's technical specifications, and are unlikely to be shared in the distributor's planning horizon by any other end-use customer.
Demand side management (DSM)	Technology/programme to encourage customers to modify patterns of electricity usage, including timing and level of consumption. This includes conservation, interruptibility and load shifting.
Distribution system	An electricity network with assets operated at a nominal voltage of 132kV or less and subsequently a <i>distributor</i> is defined as a legal entity that owns, operates or distributes electricity through a distribution system.
Distribution charges	The grouping of the use of the distribution system ( <i>DUOS</i> charges) and the connection charge.
Distribution use of system (DUOS) charges	Unbundled regulated tariffs charged by the distributor to the distribution network services customers for making capacity available and for use of the distribution system.
Distributor	A licensee or his/her appointed representative who constructs, operates and maintains the distribution network.
Electricity distribution industry (EDI)	The distribution industry connected to supply voltage not exceeding 132kV.
Electricity supply industry (ESI)	Generation, transmission and distribution.
Energy charges	Charges based on the amount of energy consumed.
Free basic electricity (FBE)	The State's Free Basic Electricity initiative, which allows for a limited amount of free electricity as deemed necessary to provide basic services as determined and funded in terms of State policy in order to alleviate poverty.
Generation	The production of electricity by any means.
High voltage (HV)	Nominal voltage levels equal or greater than 44 kV up to and including 132 kV.
International customers	Customers who are situated outside the borders of the Republic of South Africa.
Least-economic cost	The lowest value of the sum of the life cycle costs to both the supplier and the customer referring to various options for the supply of electricity.
Levy	The deliberate over-recovery of revenue, in excess of the cost of supply, in order to generate funds to be used for other customers and services. Levies could be transparent and quantified, or hidden and embedded within tariffs.
Long run marginal cost	The additional cost incurred when production is increased by one unit assuming that all input costs are variable, including capital.
Long term	A period of more than five (5) years.
Losses	Technical and non-technical. (See separate definitions for technical and non-technical losses)
Low voltage (LV)	Nominal voltage levels up to and including 1 kV.
Medium term	A period of between one (1) and five (5) years.
Medium voltage (MV)	Nominal voltage levels greater than 1 kV and up to and including 44kV.

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Municipal surcharge	A charge in excess of the municipal cost of supply that a municipality may impose on fees for a municipal service provided by or on behalf of a municipality, in terms of section 229(1)(a) of the Constitution and the Municipal Finance Management Act.
National Energy Regulator of South Africa (NERSA)	A legal entity established in terms of the National Energy Regulator Act (Act 40 of 2004) to regulate the ESI in South Africa.
Network	Electrical infrastructure needed to transport electrical energy from a source of generation to a point of consumption.
Network charges	Charges designed to recover costs (including capital, operations, maintenance and refurbishment) for the provision of network capacity required by and reserved for the customer.
Non-technical losses	Loss in revenue because of energy consumed but not paid for (unaccounted for energy), e.g. because of poor administration or theft.
Power factor	Ratio of the Root Mean Square (RMS) value of the active power (kW) to the apparent power (kVA), measured over the same integrating period.
Quality of supply	Technical parameters that describe the electricity supplied to customers according to standard (NRS048) and any other NERSA prescribed requirements.
Traders	Entities that purchase electricity from licensed distributors and resell it to end-use customers.
Replacement cost	The cost of installing a new system in the relevant year.
Reserve margin	The percentage by which the net installed generating capacity exceeds the expected / actual peak demand during a specified period.
Short term	A period of less than one (1) year.
Single buyer	The entity that has been appointed to purchase electricity from generators on behalf of the industry.
Subsidy (from outside of the sector)	The application of funds generated from taxes, levies and other sources, outside of the electricity sector, to lower the charges to particular customer categories. (Note definition for cross-subsidies)
Standard connection / standard supply charge	The standard fee charged for a standard connection as set out in an approved schedule of fees.
Tariff	A combination of charges covering different aspects of supply, grouped into a coherent set of charges.
Tariff structure	The combination of different charges and the relationship to each other.
Technical losses	The loss of energy within the networks as a natural consequence of transporting energy because of the characteristics of the physical equipment usually associated with dissipation.
Trader	A legal entity licensed or registered to engage in the buying and selling of electricity as a commercial activity.
Trading	The buying or selling of electricity as a commercial activity.
Transmission system	Power lines and substation equipment that operate at a nominal voltage of more than 132kV.
Transmission use of system (TUOS) charges	Unbundled regulated tariffs charged for the use of the transmission system.
Transparency	The explicit reflection of all composite costs that constitute a tariff, for example: energy charges, demand charges, basic charges, levies, cross-subsidies and MSOE.

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Wheeling	The transportation of electricity by an electricity supplier (utility) to a third party through a network not owned, controlled or leased by either party.
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## **1 BACKGROUND**

### **1.1 Present Structure of the Electricity Supply Industry (ESI)**

The South African ESI is essentially vertically integrated with Eskom generating 96% (including 5% imports) of the current requirements, municipalities 1% and others 3% (inter alia Independent Power Producers (IPP)). As the only transmission licensee Eskom is responsible for all transmitted electricity. The responsibility for distribution is shared between Eskom, the municipalities and other licensed distributors. About 180 municipalities distribute 40% of electricity sales to 60% of the customer base. Although Regional Electricity Distributors (REDs) were approved in principle by Cabinet, they are not yet in operation.

The end-use of electricity in South Africa is currently divided between domestic (17.2%), agriculture (2.6%), mining (15%), industrial (37.7%), commercial (12.6%), transport (2.6%) and general (12.3%). South Africa has an installed generation capacity of approximately 40 000 MW. Most of this capacity emanates from coal fired power stations (88%), with the remainder coming from nuclear, hydro and diesel. South Africa's capacity reserve margin has fallen sharply in recent years to around 8%. This has placed considerable pressure on the industry. In response to this development new generation capacity will be added to the system to restore the reserve margin and meet new growth, and also to prepare for the replacement of older plant.

Another important feature of the current electricity industry in South Africa is the average selling price of electricity, which is one of the lowest in the world. This is partially as a result of the use of low-grade coal and partially as a result of the present pricing policy and practices.

### **1.2 Electricity Sector Objectives**

To place the Electricity Pricing Policy (EPP) document into perspective, it is necessary to summarise the electricity sector objectives as detailed in the White Paper (WP) of 1998 as follows:

- a. improved social equity by addressing the requirements of the low income;
- b. enhanced efficiency and competitiveness to provide low-cost and high quality inputs to all sectors;
- c. environmentally sustainable short and long-term usage of our natural resources;
- d. the right of choice of electricity supplier;
- e. competition in especially the generation sector;
- f. open non-discriminatory access to the transmission system; and
- g. private sector participation in the industry.

Furthermore, specific objectives addressed in the abovementioned document refer to ensuring that electrification targets are met; the provision of low-cost electricity; better price equality; financial viability; improved quality of service and supply (including security of supply); proper co-ordination of operation and investments and the attraction and the retention of a competent work force.

It was foreseen that the REDs would be established and that separate entities for generation and transmission would be formed. Since the WP, REDs have been approved (but not established) and the decision was taken that competition in the generation sector would not be introduced. Instead, IPPs would be encouraged through Power Purchase Agreements (PPAs) with the single buyer.

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In view of the above, the State seeks to achieve an appropriate balance between meeting social equity, economic growth and environmental goals. This policy document seeks to obtain a balance between several competing objectives, inter alia: affordable electricity tariffs for the low income consumers and cost reflective electricity tariffs for all the other consumers. In this regard, electricity prices should reflect efficient market signals, accurate cost of supply and concomitant price levels that would ensure financial viability of the electricity sector in its entirety.

### 1.3 Key Challenges for the Electricity Distribution Industry (EDI)

The EDI is currently faced with various key challenges to ensure that the above objectives are addressed properly. It goes without saying that the introduction of a proper EPP would not solve all challenges, but it may contribute to a better managed and more orderly ESI. The following contains a list of main challenges without detailed discussions and motivations to give a clearer view of the present situation and to illustrate possible benefits of an EPP:

- a. Capacity shortages and backlog of investments.
- b. High level of fragmentation in terms of investments, sharing of facilities, services and people development.
- c. Networks are inadequately maintained, resulting in maintenance and refurbishment backlogs giving rise to high cost of interruptions.
- d. Inequitable treatment of consumers, resulting in a wide range of tariffs for the same or similar groups of consumers and also unfair discrepancies between Eskom and municipalities.
- e. The electrification performance for various areas varies unacceptably.
- f. The provision of Free Basic Electricity (FBE) is slow and inconsistent.

With the current low reserve margin (15% is seen as normal) future approved expansions are important. The industry has embarked on a major expansion programme to meet the future demand for electricity. Many projects have already been approved, while future projects are under consideration. To date approximately 18 000 MW of new generating capacity projects have been approved for implementation over the next number of years. It is expected that the expansion drive will continue into the foreseeable future requiring major capital investment and thus severely impacting future real prices.

### 1.4 White Papers (WPs) and Legislation

Over the last 25 years two WPs on the energy industry were published in which both the ESI structure and EPP were addressed. The first one appeared in 1986 and became obsolete as a result of the lifting of the oil embargo; moves towards democracy; the Reconstruction and Development Programme and other developments. Before the second WP the National Electrification Forum, which incorporated a number of EPP matters, was in operation between 1993 and 1995. The next WP dealt with a large number of EPP matters and appeared in 1998. This WP became inadequate mainly as a result of new developments exerting a direct influence on EPP issues. These include capacity shortages, gaps in present policies, present challenges (e.g. REDs) and the application of different pricing policies in Eskom and the municipalities.

As a result of later developments, a proposal for an EPP was drafted by the Department of Minerals and Energy (DME) in 2004, but it was never released formally or implemented. Apparently the proposals were applicable to an EPP based on the (then proposed) multi-market model, subsequently necessitating a revision incorporating the most recent developments.

A number of legislative developments since 1996, which have a direct influence on an EPP for the electricity industry, became applicable. It is important to mention these briefly because of their relevance for EPP. They are:

- a. Constitution of SA, 1996.
- b. Public Finance Management Act, 1999.
- c. Local Government Municipal Systems Act (LGMSA), 2000.
- d. Eskom Conversion Act of 2001.
- e. Municipal Finance Management Act, 2003.
- f. National Energy Regulation Act, 2004.
- g. Electricity Regulation Act, 2006.
- h. Municipal Fiscal Powers and Function Act, 2007.
- i. Electricity Regulation Amendment Act, 2007.

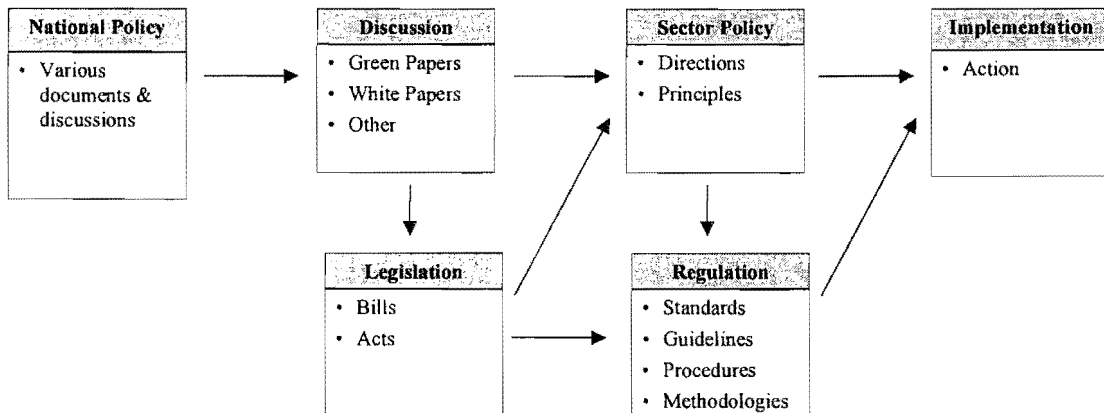
A recent relevant publication with a direct effect on EPP was authored by Adams (2004) "Allocation Methodology for Cross-subsidies in Electricity Tariffs on the Basis of a Macro-Economic Impact Study" written under the auspices of NER, now the National Energy Regulator of South Africa (NERSA). Newbury and Eberhard also completed in 2007 an independent assessment for the South African Government on the performance of the electricity sector in SA in which a number of pricing issues were raised.

**1.5 Need for EPP and Related Policies**

There is an urgent need not only for an EPP, but also for a new electricity (or energy) policy. Since REDs have been sanctioned in principle by Cabinet (25 October 2006) and the approval of a single buyer together with the well-publicised major challenges within the ESI, the above need has become even more urgent than before.

The EPP should provide direction and principles for the formulation of electricity prices in South Africa. The EPP should also reflect the most recent policies and legislation. The EPP should not be too detailed and should indicate broad level directions. It should also define the accountabilities/responsibilities; focus on the required outcomes and the timing aspects of the outcomes.

**Figure 1: The Role of the Electricity Pricing Policy**



While the EPP focuses on national strategies and priorities, the regulatory authority (NERSA) has to develop the rules, regulations, plans, standards, programmes and projects in finer detail to ensure the policy's implementation.

### **1.6 Interpretation of Terms of Reference and Approach**

The focus in this document is on a national EPP while the rules, regulations, plans, standards, programmes and projects are detailed at a lower level. Information contained in this document was gathered by means of two questionnaires; one to main stakeholders and one to a wider spectrum of stakeholders (including the main stakeholders) and individual visits (the main stakeholders were visited twice). Individual questionnaires were prepared for National Treasury, Department of Trade and Industry (DTI) and the Competition Commission and they were visited as well.

Generally positive responses were received from the stakeholders and the other parties approached. Various internal discussions were held on different occasions. The team's proposals culminated in an initial draft report to the stakeholders and other interested parties, which was discussed at a stakeholder forum. After this discussion and further submissions by the stakeholders a Final Report was prepared.

It is an important aspect to note that these proposals are to a very large extent applicable to an industry in transition. As a result some changes could be warranted on an ongoing basis after the completion of the EPP. Proposals were formulated for an industry structure in transition to a more open market framework, which includes IPPs.

### **1.7 Plan of Electricity Pricing Policy Report**

This first chapter covers the introductory part and a brief summary of the electricity industry and relevant historical information. The rest of the report focuses on the following aspects of EPP:

- General pricing principles
- Generation pricing (including renewables)
- Transmission pricing
- Distribution pricing
- Cross-subsidies
- Demand side management(DSM)
- Regulation
- Implementation plan
- Conclusions
- Pricing related policies

## **2 GENERAL PRICING PRINCIPLES**

### **2.1 General Tariff Principles**

Section 16 of the Electricity Regulation Act of 2006 states that the setting of prices, charges, tariffs and the regulation of revenues:

- a. must enable an efficient licensee to recover the full cost of its licensed activities, including a reasonable margin or return;
- b. must provide for or prescribe incentives for continued improvement of the technical and economic efficiency with which services are to be provided;
- c. must give end users proper information regarding the costs that their consumption imposes on the licensee's business;
- d. must avoid undue discrimination between customer categories; and
- e. may permit the cross-subsidy of tariffs to certain categories of customers.

The Act further states that a licensee may not charge a customer any other tariff and use provisions in agreements other than those determined or approved by NERSA as part of its licensing conditions. Notwithstanding the above, NERSA may in prescribed circumstances approve a deviation from set or approved tariffs. Other principles from the LGMSA are:

- a. Users of municipal services should be treated equitably in the application of tariffs.
- b. The amount individual users pay for services should generally be in proportion to their use of that service.
- c. Low income households must have access to at least basic services through:
  - tariffs that cover only operating and maintenance costs;
  - special tariffs or life line tariffs for low levels of use or consumption of services or for basic levels of service; or
  - any other direct or indirect method of subsidisation of tariffs for low income households.
- d. Tariffs must reasonable reflect the costs associated with rendering the service, including capital, operating, maintenance, administration and replacement costs, and interest charges.
- e. Tariffs must be set at levels that facilitate the financial sustainability of the service, taking into account subsidisation from sources other than the service concerned.
- f. Provision may be made for the promotion of local economic development through special tariffs for categories of commercial and industrial users.
- g. The economical, efficient and effective use of resources, the recycling of waste and other appropriate environmental objectives must be encouraged.
- h. The extent of subsidisation of tariffs for low income households and other categories of users should be fully disclosed.
- i. A tariff policy may differentiate between different categories of users, debtors, service providers, services, service standards, geographical areas and other matters as long as such differentiation does not amount to unfair discrimination.

The above principles, together with some other tariff objectives, are summarised in the following table. The table shows that different stakeholders have different expectations of tariffs. These objectives are sometimes in conflict and trade-offs would need to be made during the process of tariff determination.

**Table 1: Summary of Tariff Objectives**

Stakeholder	Tariff Objectives	Description
Customer	Affordable	Price levels should assume an efficient and prudent utility, in

		other words prices should be based on least cost options and exclude inefficiencies.
	Non-discriminatory	Tariffs should be equitable and fair.
	Predictable and stable	Prevent price shocks and keep customers informed about future price trends.
	Transparent and unbundled	Full disclosure of cost (no hidden charges). Cost should be unbundled. Tariffs should be easy to understand and apply.
Utility	Revenue recovery	Revenue from tariffs should reflect the full cost (including a reasonable risk adjusted margin or return) to supply electricity and ensure that the industry is economically viable, stable and fundable in the short, medium and long term.
	Efficient use	Tariffs should promote overall demand and supply side economic efficiency, and be structured to encourage sustainable, efficient and effective usage of electricity.
	Cost reflective	A link between the price a user must pay to the cost of serving that user.
	Low cost of implementation	Implementation and transaction costs should be minimised.
State	Social support	Tariff levels and structures should accommodate social programmes.
	Environmentally responsible	The production and transport of electricity should be done in a sustainable way and be mindful of the impact on the environment.
	Sufficiency in generation capacity	Expansion through development of least cost options resources in line with national resource planning.
	State subsidies	Industry needs to achieve and maintain financial sustainability without ongoing State subsidies. This does not preclude provision for targeted subsidies such as FBE.
	Returns	Fair and equitable.

## 2.2 Revenue Requirement

Given the electricity supply industry's size and its predominantly commercial and industrial customer base, the industry has the potential to generate strong cash flows to sustain a financially viable industry. The need for direct State support and subsidies should, apart from funding social objectives, be minimal.

Economic theory suggests that a perfectly competitive market would produce efficient prices. The electricity industry in South Africa is currently not structured to deliver perfect competition, but this does not diminish the importance of efficient electricity prices in any way. Efficient electricity prices would lead to:

- a. the optimum allocation of scarce resources including financial, human and natural resources;
- b. the optimum usage of electricity;
- c. the optimum usage of the different energy forms (e.g. electricity, gas, oil and coal); and

d. a financially viable industry.

In the absence of competition, regulators may select from a range of methodologies to regulate the industry. All these options have some advantages and disadvantages. Regardless of the method of regulation or price formation it is essential that an efficient and prudent licensee should be able to generate sufficient revenues that would allow it to operate as a viable concern now and in the future.

The common approach among many economic regulators in other parts of the world is to set revenues at a level which would allow the licensee to cover its full costs including a reasonable risk adjusted margin or return. This approach functions well under most circumstances. However, when there is a major discrepancy between asset values used for regulatory tariff setting and new asset values, it creates a potential funding shortfall when new assets are introduced. South Africa finds itself in this situation which has been brought about by many years of surplus capacity resulting in low levels of investments and highly depreciated assets, coupled with relatively high inflation.

This situation may be addressed in several ways through various regulatory methodologies<sup>1</sup>. The correct approach would depend on what is practical and consistent with the general pricing principles set out in section 2.1. Regardless of the chosen method it is important that the regulated business is able to attract reasonably priced finance in order to maintain, refurbish and grow its infrastructure and provide services at a reasonable cost.

Tariffs, therefore, need to be set at a level which would not only ensure that the utility generates sufficient revenues to cover the full costs (including a reasonable margin or return) but would also allow the utility to obtain reasonably priced funding on a forward looking basis. Rating agencies and lenders focus on a range of appraisal factors including profitability, e.g. Return on Assets (ROA) and Return on Equity (ROE), financial leverage (debt to equity) and debt service (e.g. interest coverage). It is important for the sake of financial sustainability that all these indicators move between acceptable norms and standards on a forward looking basis over the short, medium and long term. If the financial performance of the regulated entity deviates from these norms and standards investors will either be reluctant to extend credit or increase the cost of finance, ultimately resulting in higher tariffs or State support (e.g. guarantees, subsidies) or even bankruptcy in the case of private owners.

Ultimately the decision to lend money to a regulated utility is made by the financial institution and not the regulator. The regulator, therefore, has a duty to measure the projected results from its regulatory methodologies (taking into account investment cycles and other cost trends) using the same criteria that reasonable commercial lenders would employ. The regulator needs to consult with commercial lenders when assessing the financial viability of the industry on an ongoing basis.

Once the industry has gone through its current investment cycle (to meet growth needs, address backlogs and replacements) the asset values used for regulated tariff setting and new asset values should be more consistent. Once this position has been reached it should be sufficient for the regulator to focus on ROA (or ROE) without having to perform detailed calculations to determine the state of the utility's financial leverage and debt service.

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<sup>1</sup> For example a regulator may favour a steep increase in tariffs in one year or phased-in tariff increases over a number of years. Both options present some challenges. In the first approach it may not be economically or politically practical to introduce a large step increase in tariffs in a short period. In the second approach, and especially if the phase-in period is over many years, it could result in excessive accounting profits which could be used for other than infrastructure investment purposes in the meantime.

**Policy Position: 1**

- a) *The revenue requirement for a regulated licensee must be set at a level which covers the full cost of production, including a reasonable risk adjusted margin or return on appropriate asset values. The regulator, after consultation with stakeholders, must adopt an asset valuation methodology that accurately reflects the replacement value of those assets such as to allow the electricity utility to obtain reasonably priced funding for investment; to meet Government defined economic growth.*
- b) *In addition, the regulatory methodology should anticipate investment cycles and other cost trends to prevent unreasonable price volatility and shocks while ensuring financial; viability, continuity, fundability and stability over the short, medium and long term assuming an efficient and prudent operator.*

**2.3 Cost Reflectivity**

All tariffs should become cost-reflective over the next five years subject to specific cross-subsidies as provided for in section 9. The application of tax or levies is provided for over and above the cost reflective charges. This should be done within the current distributors and within REDs.

**Policy Position: 2**

*Electricity tariffs must reflect the efficient cost of rendering electricity services as accurately as practical.*

- *The average level of all the tariffs must be set to recover the approved revenue requirement.*
- *The tariff structures must be set to recover costs as follows:*
  - *The energy costs for a particular customer category.*
  - *The network usage cost for a particular t consumer category and*
  - *Service costs associated therewith.*

**2.4 Transparency and Unbundling**

Billing processes and customer invoices should communicate relevant information to customers regarding their consumption and costs. Full disclosure (transparency) and breakdown (unbundling) of all key cost drivers where practical are essential features that would empower customers to make informed consumption decisions. Accounting ringfencing of key electricity functions (e.g. generation, networks, wholesale / retail and customer services.) is the first step towards achieving accurate transparent and unbundled accounts.

In addition, the extent to which unbundling may be done at distribution level depends on the type of metering installed/available, which in turn determines what quantities could be measured and the capability of the billing system. Strategies need to be put in place so that these problems may be overcome and the maximum practical levels be shown over the next five years.

**Policy Position: 3**

*The customer bill must comply with NRS047*

**2.5 Non-Discrimination**

There are currently a number of obstacles, principally relating to cross-subsidies that prevent the full implementation of a non-discriminatory pricing approach.

These discriminatory practices have created a situation where similar customers are subject to significantly different tariffs without any real differences in the cost of supply. This undermines the efficient allocation of resources and prevents healthy competition within similar industries. This means that the full potential and benefits of electricity could only be extended to all customers once these discriminatory pricing practices are removed. The obstacles should, therefore, be addressed and removed.

**Policy Position: 4**

*All forms of discriminatory pricing practices must be identified and removed, other than those permitted under specific cross-subsidisation / developmental programmes, or be transparently reflected to unlock the full potential of electricity to all.*

**2.6 Access to and Use of Networks**

Network (transmission and distribution) owners have an obligation to allow customers access to and use of their networks, provided that the customers are not in arrears in paying all the relevant charges as approved by NERSA from time to time and that such access would not violate any technical and safety requirements as set out in the relevant grid codes license conditions and tariff schedules.

The full cost to operate the networks should be reflected in the various connection and use of system charges. In other words no additional charges are needed to facilitate the wheeling of electricity between two parties unless such wheeling would result in incremental costs. Any incremental wheeling costs should be charged on a similar basis as connection charges. Southern African Power Pool (SAPP) rules would apply for the recovery of cost and payment of wheeling services for SAPP transactions.

If network constraints cause congestion and wheeling parties are affected, then NERSA has the responsibility to develop a mechanism which would allocate network capacity between interested parties. Such a mechanism needs to be fair, non-discriminatory and transparent. In addition the methodology needs to encourage the use of transmission assets to maximise the benefit to all users.

**Policy Position: 5**

- a) *Fair and non-discriminatory access to and use of networks to all users of the relevant networks.*
- b) *The full cost to operate the networks is reflected in the various connection and use of system charges and, therefore, no additional charges for wheeling of electricity will be levied unless the wheeling action introduces incremental costs.*
- c) *Any incremental wheeling costs associated with a specific wheeling transaction and its fair share must be recovered as a connection charge.*
- d) *Wheeling of electricity can only be permitted if the action complies with all technical, safety and commercial requirements.*
- e) *A methodology for transmission and distribution wheeling, including the treatment of network congestion, must be developed by NERSA.*

**2.7 Special Products**

In addition to the standard range of pricing products, provision should also be made for the development and introduction of special products and prices. These products would typically be:



- a. Curtailable and interruptible rates: Customers are paid to reduce consumption in critical periods.
- b. Critical peak pricing tariffs: TOU tariffs are introduced with certain periods of very high prices when the system's reliability is threatened.
- c. Real-time pricing products: Rates are provided ahead of time (usually on an hourly or daily basis).

These products, in conjunction with enabling technologies, could significantly increase the penetration of demand response programmes and products.

**Policy Position: 6**

*In addition to the standard range of pricing products provision must also made for the development and introduction of special products and prices to achieve specific goals, the cost of which will be treated according to the regulatory methodology.*

## 2.8 Long Term Price Outlook

Given that customers have long term planning requirements there is wide support for the publication of a long term price outlook. The price forecast should include a reasonable period of not less than 10 years. The outlook should be updated on a frequent basis to signal the overall expected trend in electricity prices. Ideally the forecast should show the contribution of generation, transmission and distribution to the forecast price level for some representative notional customers. These forecasts should be treated as indicative and will not be binding on any of the players.

**Policy Position: 7**

*NERSA, after consulting with stakeholders, should develop and publish a multi year price path on an annual basic..*

## 3 PRICING INTERFACES

The EPP has been developed without a specific industry structure in mind. This would ensure that the policy recommendations and positions remain valid under several industry scenarios. However, some basic assumptions had to be made regarding the key functions and pricing interfaces in the industry. If needed these assumptions could be developed in more detail through separate policies over time. The assumptions are briefly discussed and illustrated below.

- a. Generators may be owned by: Eskom, municipalities, independent power producers and private persons / entities.
- b. South Africa may import and export electricity to and from other African countries and would follow SADC protocols in the wheeling of power between neighbouring countries.
- c. Licensed generators and traders may (but are not obliged to) sell electricity to: A single buyer (e.g. Eskom)<sup>2</sup>, a wholesale buyer/customer (e.g. RED), a retail buyer/customer or to self.
- d. Wholesale electricity prices consist of wholesale energy prices, transmission prices and single buyer own cost.
- e. Retail prices comprise the final prices to customers.