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GENERAL NOTICE

NOTICE 834 OF 2004

The Minister of Minerals and Energy has approved that the draft Electricity Pricing Policy of the South African Electricity Industry be released for public comments.

Comments on the draft Electricity Pricing Policy should be forwarded to:

Attention: The Director-General
Mr. Ompie L. Aphane
Department of Minerals and Energy
Electricity Chief Directorate
Private Bag X59
PRETORIA
0001

Fax: (012) 317 9539
E-mail: lambona.aphane@dme.gov.za

The deadline for the submissions of comments is 18 June 2004.

THE ELECTRICITY PRICING POLICY

OF THE

SOUTH AFRICAN ELECTRICITY INDUSTRY



DEPARTMENT OF MINERALS AND ENERGY

Ministerial Foreword

In line with the Government policy to make affordable electricity to all, the challenges for the restructuring of the electricity industry are equally daunting. In order to balance the need for the Electricity Distribution Industry (EDI), to improve its livelihood, to obtain reasonable returns on investment, to deliver services at least cost to needy and poor communities, it has become imperative to address issues of electricity industry restructuring, corporatization, privatisation and the socio-economic upliftment.

On the other hand, in order to ensure development and sustainability of the South Africa economy, it is equally imperative to ensure lower input costs to the industrial sector, which is the backbone of the economy. This is particularly so in respect of bulk consumers of electricity.

The challenge will always be how to strike a balance between ensuring sustainability and facilitating growth of the Electricity Supply Industry (ESI) and the socio-economic demands placed upon it. The role of the electricity regulator in maintaining a balance between different objectives in electricity industry will be equally crucial.

This document seeks to present the policy position of the South African Government on the pricing framework for electricity in the electricity distribution and supply sectors.

Phumzile Mlambo-Ngcuka (Ms)
Minister of Minerals and Energy

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ABBREVIATIONS

DSM: Demand Side Management
EDI: Electricity Distribution Industry
EIU's: Energy Intensive Users
ESI: Electricity Supply Industry
EWP: White Paper on Energy Policy
IPP: Independent Power Producer
IPS: Interconnected Power System
INEP: Integrated National Electrification Programme
LTA: Long-Term Agreements
MTEF: Medium Term Expenditure Framework
NER: National Electricity Regulator
NPA: Negotiated Pricing Agreements
RED: Regional Electricity Distributor
REPS: Retail Electricity Pricing System
SHS: Solar Home Systems
SMME: Small Medium Micro Enterprise
TOU: Time of Use
TSO: Transmission Systems Operator
WEPS: Wholesale Electricity Pricing System

a) DEFINITIONS

Levy	Refers the over-recovery of revenue, in excess of the cost of supply in order to generate funds to be applied to other customers and services. Levies can be transparent and quantified, or hidden and embedded within tariffs.
Base-load demand	Refers to 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.
Base-load unit	Refers to a power generator that is committed to meeting this continuous level of demand. Working in conjunction with base load units are intermediate units, which are flexible enough to meet seasonal and daily changes in demand.
Cost-reflectivity	Refers to the pricing method aimed at reflecting the full recovery of economic cost of supplying electricity to a customer.
Cross-subsidisation	Refers to the over or under-recovery of revenue from some customers or one type of customers relative to cost of supply and the simultaneous under or over recovery of revenue from other customers that may bring about revenue neutrality to service provider relative to cost.
Distribution system	Refers to an electricity network consisting of assets operated at a nominal voltage of 132kV or less and subsequently, a distributor is defined as a legal entity that owns, operates or distributes electricity through a distribution system.
EDI	Refers to the Electricity Distribution Industry connected to supply voltage not exceeding 132kV.
ESI	Refers to the Electricity Supply Industry comprising transmission and generation industries.
FBE	Refers to Government'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 Government' policy in order to alleviate poverty.
INEP	Refers to the Integrated National Electrification Programme under the auspices of the Department of Minerals and Energy intended to address electricity supply backlogs in respect of households, schools and clinics in South Africa.

Mid merit demand	Refers to the portion of generation that separates base load and peak demands.
Peak supply	Refers to the process where additional electricity generation is required for short periods of time to meet electrical energy demands during peak periods
Peaking units in electricity generation	<p>Refers to electricity generation units employed to meet spikes in demand. Utility companies employ generators as base load, intermediate, or peaking depending upon their operating costs and certain technical consideration, with the least expensive units being operated first to cover base load demand and the most expensive being operated last to meet peaking demand.</p> <p>This ranking of generating units is called the <i>dispatch order</i> and is <i>the central concept behind the economics of electricity supply</i>.</p>
Service Authority	Refers to the power of a municipality to regulate the provision of the municipal service by a service provider.
Service Provider	Refers to a person or an institution or any combination thereof, which provides municipal service(s).
Subsidy	Refers to the application of funds generated from taxes, levies and other sources, to ensure that customers who would otherwise not afford services can be charged below cost.
Surcharge or revenue neutral levy	Refers to charges imposed to compensate a supplier for a short-term loss of revenue due to changes in tariff structure.
Transmission system:	Refers to transmission lines and substation equipment where the nominal voltage is above 132kV. All other equipment operating at voltages lower than the above are either part of the distribution system or classified as transformation equipment.
Transmission Systems Operator	Refers to the legal entity licensed to be responsible for short-term reliability of the IPS, which is in charge of controlling and operating the transmission system and dispatching generation (or balancing the supply and demand) in real time.
Transparency	Refers to an explicit reflection of all composite cost that build up a tariff for example levies, cross subsidies, taxes etc.
Wheeling	Refers to an electricity supplier (utility) that transports electricity to a third party through a network not owned, controlled or leased by either party.

CHAPTER 1

1. SOUTH AFRICAN ELECTRICITY INDUSTRY IN PERSPECTIVE

The current electricity legislation (Electricity Act. No. 41 of 1987) provides for the regulation of the electricity industry by the National Electricity Regulator (NER). Part of the mandate of the NER is to approve proposed electricity tariffs by various stakeholders in the electricity industry.

The South African electricity industry comprises generation, transmission and distribution sectors. Eskom is a dominant vertically integrated participant with a presence in all sectors. Eskom is governed by a Board of Directors in terms of Eskom Conversion Act, 2001 (Act No 13 of 2001).

In June 2002, South Africa produced 186 560 GWh of electricity, with Eskom producing 96% and municipalities and other institutions producing 4%, which is transported over the national transmission network to consumers and distributors countrywide and across the borders.

Approximately 200 distributors, mainly municipal distribution departments, supply electricity to end customers. Eskom is the largest single distributor both in terms of energy sales, end-use final consumptions and number of customers. Eskom's distribution sales account for about 40% of the total sales of customer numbers and 60% in terms of energy sales. The rest is controlled by municipalities.

The electricity industry in South Africa is still vertically integrated. The Electricity Distribution Industry (EDI) and the Electricity Supply Industry (ESI) are re-structured in accordance with Government's decisions. The EDI will be restructured into six (6) independent, commercially viable and regulated Regional Electricity Distributors (REDs), whereas the ESI will be restructured to operate on the principles of a competitive multi-market model with a number of generation clusters, Independent Power Producers (IPPs), an independent Transmission Company and a Transmission Systems Operator.

The restructuring of the electricity industry brings a number of issues to the fore including issues pertaining electricity pricing and tariffs.

The transfer pricing along the value chain and amongst categories of customers is currently not transparent and includes hidden cross-subsidization.

Cross-subsidisation has always been part of the South Africa electricity pricing landscape. Poor electricity consumers naturally will not afford electricity at full cost-reflective prices and therefore, there will be a need for subsidising such consumers.

The EWP holds that “*Cost reflective tariffs will be applied at electricity distributor supply points in due course*”, as a key policy objective. It is understood that the immediate removal of cross-subsidisation could have negative implications on the continued affordability of electricity by many classes of consumers especially households electrified under the INEP. Cross-subsidisation, therefore, has been entrenched in electricity pricing without any explicit determining Government policy.

The issue of cross-subsidisation is largely managed within the EDI. With the advent of financial ring-fencing of electricity businesses of municipalities from the mainstream municipal and Eskom’s distribution, transmission and generation functions, the transfer pricing to the distribution sector should be cost-reflective within the constraints of the total revenue allowed as determined and approved by the NER from time to time.

It should be noted that large customers including municipalities taking supply at high voltage and buying at retail rather than wholesale prices contribute to the subsidisation of Eskom’s rural and electrification customers as a result of inherent cross-subsidization in tariff design.

As at 2002, the national level of domestic electrification was 68%, comprising 50% in rural areas and 78% in urban areas. The capital cost for electrification of both grid and non-grid supplies are funded from the fiscus at an amount determined by the Government from time to time. Although the bulk of capital funding is provided by the national Government, the industry is also funding a portion of the capital, operation and maintenance costs of the electrification infrastructure.

Large customers supplied directly by municipalities also contribute to subsidise electrification of domestic customers in their municipal areas. This form of subsidisation has been at the heart of the “unlevelled playing field” debate between

Eskom distribution and municipal distributors. This issue will automatically be addressed by the EDI restructuring, the establishment of REDs and through the introduction of wholesale electricity pricing.

In view of the above, the Government seeks to achieve an appropriate balance between meeting social equity, economic growth and environmental goals. This policy document seeks to strike a balance between affordable electricity prices to households and low-cost electricity for industrial sector. In this regard, electricity prices should reflect efficient market signals, accurate cost of supply and concomitant price levels that will ensure financial viability of the electricity sector in its entirety.

Similarly, challenges facing the formulation of an electricity pricing policy as outlined in the EWP should be noted. The EWP acknowledges the fragmentation of the South African EDI, which has resulted in more than 1100 domestic tariffs in existence. This creates confusion amongst domestic customers, as it is difficult to justify different tariffs to customers where adjacent utilities provide the same service to consumers of the same class. The existence of different tariffs therefore contributes indirectly to the culture of non-payment and electricity theft, which continue to be widespread across the country.

The present tariff structures and levels do not always provide adequate incentives to consumers to use electricity efficiently, thus, any tariff rationalisation process needs to take this state of affairs into account.

In addressing the above challenges, *the NER will be an appropriate institution to facilitate the implementation of this policy.* It is envisaged that the introduction of cost-based tariffs that provide correct pricing signals to consumers will result in economically optimal investments in the electricity infrastructure.

This pricing policy document recognises different forms of cross subsidisation inherent in the industry and outlines the core principles in the Government's EDI restructuring objectives. The impact and options for different categories of electricity consumers are dealt with. Of particular importance, are changes likely to result due to the implementation of the proposed electricity pricing system, the qualifying criteria and management of processes during the transitional period to the restructured ESI and EDI.

In principle, the pricing policy should also recognise the contribution of renewable energy sources to new generation capacity and concomitant mitigation of externalities to inefficient market prices. In the same vein, the NER will be an appropriate institution to guide the implementation of the objectives of the pricing policy in this regard.

In fulfilling other policy objectives as stated in the EWP, electrification customers form part of the integrated electricity pricing policy framework.



Issues pertaining to levies and taxes on electricity do not form part of the mandate of the DME and are thus not addressed herein. These issues will be addressed by the relevant authorities such as the South African Revenue Services and the Financial and Fiscal Commission.

CHAPTER 2

2. SUBSIDIZATION IN CONTEXT OF ELECTRICITY PRICING

2.1. Background

The electricity distribution and transmission businesses largely depend on the quality of infrastructure available to transport electricity from the generators, the latter is usually located in areas distant from the former in the South African ESI context. Historically and throughout the world, electricity generation, transmission and distribution were considered as single state monopolies, as a result, there were no separate transfer pricing policies at each level of the industry. In this regard, energy, transaction costs and levies were recovered mainly from the distribution sectors, whereas taxes were collected at generation levels. Utilities did not have separate pricing and investment plans at each level because the decision making process was largely centralised at corporate level.

With the liberalisation of markets in the energy sector particularly in respect of grid and non-grid electricity, gas and other services such as water and telecommunication, issues of competition, access to markets, third party access to transmission networks and transfer pricing warrants a new approach to utility structures and management. Most utilities are moving towards cost-reflectivity and transparency whereby there is a separation and reflection of constituent costs pertaining to commodity, transportation and service costs. Cost-reflectivity enables the industry to provide investment signals as and when demand surpasses supply. These challenges provide additional opportunities for other forms of business such as wheeling, hedging and financial brokerage.

The extent of existing cross-subsidisation is difficult to quantify since cost of supply studies are not adequately conducted prior to tariff design, in many cases. Eskom's Retail Pricing Plan quantifies some inter-tariff cross subsidies. According to Eskom's 2003 study, the price of electricity should increase by up to 135% and 56% for rural and electrification customers categories respectively if full cost-reflectivity is to be achieved. Such an increase would generate approximately R 2 billion additional

revenue that would be used to reduce large customer tariffs by approximately 12%. Pricewaterhouse Coopers estimated in 2001 that the subsidisation of municipal rate funds by electricity amounted to ± R 2,4 billion per annum.

2.2. Tariff Determination in the Electricity Industry

The current tariffs (Eskom distribution and municipalities), like in any other previously state owned monopoly business, have not been cost-reflective and include varying degrees of embedded cross-subsidisation.

The introduction of competition through the multi-market model will allow electricity as a commodity to be priced at wholesale or at retail level. In order to differentiate between these two categories, any wholesale or large customer would be required to consume a certain amount of electricity at a single point in order to qualify to purchase electricity at wholesale pricing. In the South African electricity industry context, the qualifying quantity will change from time to time. Initially, all consumers purchasing 100 GWh or more at a single point will qualify to buy bulk electricity at wholesale prices.

2.3. Types of Existing Subsidies

Explicit and implicit cross-subsidisation exists at different levels and can manifest itself as:

2.3.1. Inter-tariff cross-subsidisation

Inter-tariff cross-subsidisation refers to the subsidisation of consumers in one tariff class by customers in another class. This is generally a subsidy taking place between domestic, agricultural and industrial customers. This type of cross-subsidy occurs when some customers on a tariff are over-charged and others on the same tariff are undercharged, as a result of the chosen tariff structure and the cost allocation methodology (pooling of network costs for customers with different load profiles).

Inter-tariff cross-subsidization can also occur between consumers connected to high voltage supply and those connected to low voltage supply. In most cases, it is the high voltage usage customers who are subsidising the lower voltage consumers.

2.3.2. Intra-tariff cross-subsidisation

Intra-tariff cross-subsidy occurs when high volume electricity consuming customers within a customer class subsidise low volume customers in the same class.

2.3.3. Geographic cross-subsidies

Geographic subsidisation occurs when consumers connected to the grid closer to the point of generation are charged similar tariff to customers in distant geographical locations on the same grid. Cross-subsidisation takes place from low cost areas (i.e. those close to generation resources) to high cost areas, typically the coastal areas in South Africa such as Northern Cape/West Cape and Eastern Cape.

Geographic cross-subsidization refers to the fact that tariffs do not accurately reflect the true cost of supply to different geographic regions of the country. This type of cross-subsidization may result from two main causes; namely:

- higher capital investment and operational costs associated with transporting electricity over different distances to reach end-customers.
- increase in technical losses that result from transportation of electricity over long distances.

2.4. Levies and taxes

Any revenue levied on electricity sales that is not retained in the industry and is applied to fund other municipal services can be categorized as a levy or a tax. The Department of Minerals and Energy has no jurisdiction over taxes and levies, as these are issues for the South African Revenue Services and municipalities respectively. Notwithstanding the constitutional functions of municipalities, all electricity based levies and taxes must be transparent. This document does not concern itself with the determination of such levies and taxes.

CHAPTER 3

3. ELECTRICITY PRICING PRINCIPLES

3.1. Time of Use Tariffs

This policy framework establishes a pricing methodology that recognizes the load profile of electricity demand based on the time-of-use principle and concomitant generation costs.

The EWP recognizes the social responsibility of different spheres of Government to assist certain consumer classes and therefore provides for the NER to regulate electricity tariffs through differentiated tariffs structures, levels and other service fees for various consumer classes.

3.2. Enabling Technological Interventions

The policy also provides for the NER to facilitate the development and exploration of cost-effective technological inventions that will enable cost-reflective pricing through high frequency interval metering.

3.3. Incentivising Demand Side Management

The pricing framework through cost-reflectivity provides for the NER to incentivise utilities that promote effective utilization of electricity by load shifting and transparency through flexible pricing instruments.

3.4. Renewable electricity pricing

The EWP recognises the potential of renewable energy sources supplementing the non-renewable energy services in the medium to long-term.

Renewable energy is at its infancy stage in the South African energy sector and therefore does not constitute a large portion of the ESI. Renewable energy in the form

of Solar Home System (SHS) was introduced mainly in deep rural areas as part of Government's initiatives to facilitate the goal of "Universal Access" to electricity services.

The INEP provides grid and non-grid electrification technologies as complementary systems for household electrification. Non-grid electrification technologies are still expensive compared to grid technologies on a cost per unit basis. In view of the fact that non-grid technologies are applied in deep rural and poorer areas, the introduction of renewable energies will need some form of subsidisation.

It is recognised when many domestic consumers are connected to renewable energies, the grid generation peak demand could be reduced or better managed. Similarly, renewable energies can introduce competition by allowing easy participation of Independent Power Producers (IPPs) in the generation sector.

The DME's Renewable Energy Market Transformation project commissioned in 2004 envisages capital subsidies for renewable energy generation as once-off funding allocation. Currently, the capital costs of non-grid technologies (SHS), as an integral part of the INEP are subsidised from the fiscus in respect of both capital and operational costs. Other non-grid technologies have not been integrated as official complementary electrification options in the INEP.

CHAPTER 4

4. ELECTRICITY PRICING POLICY

4.1. Network Charges

The policy principles outlined in the EWP form a basis for the strategic direction in which the electricity industry will move. These were integrated with the restructuring objectives of the electricity industry, promotion of competition, recognition of promotion of clean energy usage and renewable energy based electricity generation.

It is envisaged that electricity pricing in the South African electricity industry should be transparent and cost-reflective. Pricing of electricity will be ring-fenced depending on sectors under consideration. The costs of electricity generation will be reflected in the wholesale electricity tariff design and similarly the costs of transmitted electricity will be reflected in the electricity retail tariff design.

In line with the EWP, the envisaged Transmission Company will allow open access to uncommitted capacity on the network to all participating buyers and sellers (generators) and their agents. Any network owner will be allowed by the NER to charge a reasonable transportation fee to cover investment costs and earn a reasonable return as determined by the NER.

Tariffs charged to customers on the network will be cost-reflective including geographical differentiation resulting from the relative location of the markets from electricity generation plants as well as the physical layout of the country.

The TOU costing will be of utmost importance to minimize the peak demand and system usage.

The distribution costs associated with the use of the distribution networks will be added to the costs associated with generation and transmission in order to adequately reflect the true cost of supply to affected consumers.

4.1.1. Cost-reflectivity

The EWP provides for the electricity industry to move towards cost-reflectivity in the medium to long-term. In this regard, the electricity tariffs should reflect the real cost of rendering electricity services excluding taxes and subsidies. The policy position of the Government is that there should ultimately be no cross-subsidies applied at the generation level, to allow generators a fair competitive environment and an opportunity to compete with other national and regional generators. Cost-reflectivity will further be discussed in the retail sections below.

Electricity industry should move towards cost-reflectivity in the medium to long-term. This means that electricity tariffs should reflect the real cost of rendering electricity services, excluding taxes and subsidies.

4.1.2. Access

Transmission network owners may not refuse other parties access to submit or wheel electricity through their networks, subject to such owners being paid a fair amount as approved by the NER from time to time, for the use of their networks.

As part of the transmission grid code, network owners may not discriminate against other parties who wish to be connected to their networks for access to uncommitted capacity provided that such parties are willing and able to pay for such connections. The tariffs for connection and wheeling, as well as any applications to change the structure and levels of such tariffs, shall be approved by the NER.

There will be non-discriminatory access to uncommitted capacity within commercially reasonable and operational constraints of the transmission system, transparency of tariffs, disclosure of cost and pricing information to the NER.

4.1.3. Transmission charges

Transmission charges should reflect the cost of transporting electricity from the generator through the transmission system to the distributor or to large customers. Transmission is a monopoly business, which will be owned by the Government and must be regulated by NER. It will remain a monopoly even after the restructuring of the ESI. The NER will regulate the transmission business in line with the provisions of the legislation and the

EWP to provide for non-discriminatory open access to uncommitted capacity. All information pertaining to transparency of tariffs, disclosure of costs and pricing information will be provided to the NER as part of the licensing conditions. The NER will design a pricing framework based on the policy provision contained herein covering all factors to be considered for the transmission tariff to ensure that revenue recovered is in line with the principle of cost-reflectivity and allowed revenue requirements.

Appropriate payments shall be made by the wheeling utility to the transmission network owner to obtain the required capacity as a condition of service.

4.1.4. Geographical differentiation

Transmission and distribution networks have both a spatial and a temporal dimension. Electricity generators and loads connected to these networks are generally not located in the same place. It is therefore recognised that the cost of electricity transmission will vary from place to place and from time to time along the transmission network. Different distribution networks also face different cost drivers, depending on the nature of the terrain.

In line with the principle of cost-reflectivity, the NER shall determine geographic differentiation of electricity tariffs from place to place along the transmission network and the REDs or distributors' licensed areas.

The NER shall divide the transmission network into an appropriate number of transmission zones to facilitate recovery of transmission charges and concomitant losses.

The country shall be divided into a number of transmission network pricing zones, as defined by the NER from time to time.

4.2. Energy Pricing

The total cost of electricity comprises the network charges, transaction costs and the energy charges, which are all regulated by the NER. This section focuses on the pricing of the energy component of electricity. There are different pricing approaches to energy costing and discussed below.

4.2.1. Electricity Wholesale Pricing

All customers with the required minimum consumption of 100 GWh initially at a single point will qualify for wholesale pricing. The application of the wholesale pricing will be monitored by the NER. The minimum consumption requirement may change from time to time at the discretion of the NER after consultation with relevant stakeholders.

Initially all customers buying on average 100 GWh or more per annum at a single point will qualify to buy at WEPS subject to approval by the NER.

4.2.2. Industrial customers connected to municipal networks

The introduction of wholesale pricing is likely to encourage industrial consumers connected to municipal distribution networks to seek to purchase electricity at wholesale prices.

4.2.3. Regionalized wholesale pricing

Railway networks and bulk water supply establishments are strategic and unique industries in that their networks are connected to different municipalities' and distribution networks at different tariffs levels. The railway and bulk water supply networks may consume less than NER stipulated usage amount of electricity in GWh at a single point whereas their aggregate consumption as a single business entity is greater than the NER stipulated amount of usage of electricity initially being 100 GWh. The NER could set regionalized wholesale tariffs for the traction industry once the REDs are established.

Traction and bulk water supply industries are of national strategic importance and will qualify for the wholesale pricing tariffs of electricity supply even if they consume more than 100 GWh from different points of supply.

When the REDs are established, the wholesale pricing tariffs of electricity supply for the traction and bulk water supply industries will be regionalized.

4.2.4. Time of Use Pricing

The costs of producing electricity varies with the load profile, technology deployed, availability of primary resources, generation capacity, the season and time during which it is produced.

Some tariff structures are energy unit based (approved annually by the NER on c/kWh basis and are thus not time based), whereas the cost of producing electricity is based on hourly and seasonal TOU. Tariff structures for some of the industrial sector has already been converted to the TOU basis. In-order for the wholesale pricing to be cost-reflective, it should be TOU based.

All tariffs will be based on the TOU methodology.

4.2.5. Negotiated Pricing Agreements

Most of the large customers and municipalities' electricity sales are conducted through Negotiated Pricing Agreements. Some of these agreements extend over ten years. While the Government respects the sanctity of these pricing agreements and their role in stabilising input costs, it is cautious to note that these may result in inefficient pricing signals to both customers and investors if not properly regulated.

A well-designed NPA reduces the risk of price fluctuation and provides hedging, thus allowing for long-term investment planning in a stable price environment. This may take many forms including indexing to inflation, exchange rates, price ceilings etc. With the introduction of the multi-market model, there will be an increased participation of market oriented hedging instruments through trading and financial brokerage.

It is recognised that NPAs may not be cost-reflective in the medium to long-term. It is the Government's intention that notwithstanding the introduction of the multi markets, these contracts be aligned with the Government policy to be cost-reflective over time, without compromising the viability of such customers. Existing contracts will however be honoured.

All existing contracts must be aligned with the wholesale electricity pricing contained herein over time.

There will also be a need to change the electricity pricing methodology when the multi-market model is introduced in the ESI. In this regard all existing contracts will need to be re-negotiated upon expiry or prior to the ESI restructuring and shall be brought in line with the competition principles in the electricity sector.

All existing NPAs will be honoured initially but shall be migrated to wholesale electricity pricing over time. A mechanism will be devised by the NER to accommodate the existing NPAs in the transitional period towards the transparent and cost-reflective wholesale pricing system.

Affected contracting parties shall re-negotiate the NPA prior to the introduction of multi markets in the ESI.

4.2.6. Commodity Based Pricing

Some industries, which are trading in commodities on international markets, have signed long-term NPA based on special commodity-linked electricity tariffs. These tariffs vary with the commodity prices in the international commodity markets. When commodity prices are low, these industries may be cross subsidised by other regulated consumers or when commodity prices are high, these industries may be overpaying to the generators. On average these industries pay the retail tariff¹. While recognising that these agreements are few, the rest of the EDI should not subsidize these industries when commodity prices are unfavourable.

When commodity prices are low and commodity based tariffs fall below wholesale electricity prices, the other party to the contract (supplier) must absorb the difference (loss) and shall not pass it on to other classes of consumers. When commodity prices are high, generator may keep the benefits within the provisions of their revenue requirements as approved by the NER.

¹ megaflex.

4.2.7. New entrants in the ESI

All new customers qualifying for wholesale electricity pricing will be charged accordingly. New customers will have a choice of purchasing electricity from the wholesale market, the distribution company or entering into a NPA of their own choice.

4.2.7.1. Choice of electricity supplier

All large qualifying customers, traders and retailers qualifying for wholesale pricing will have a choice of bulk supplier but they also carry the risk of failure by that supplier to supply electricity contracted for.

Captive customers do not have a choice of supplier, thus cannot carry such risk. The RED in whose network they are connected has the obligation to supply such customers.

The distributor / RED shall carry the risk of failure to supply captive customers connected to networks.

Customers' choice will be available after the introduction of the wholesale electricity pricing.

Supplier choice to domestic sector and other customers purchasing less than the required amount to qualify for wholesale electricity pricing may be available in the future at the approval of the NER.

All qualifying customers, traders and retailers qualifying for wholesale pricing will have a choice of bulk supplier but they will also carry the risk of failure of that supplier to supply electricity contracted for.

Large municipal customers are charged levies by municipalities, which are likely to result in higher tariff compared to similar large customers outside municipal areas who buy electricity at wholesale prices. As a result, a mechanism should be devised to address this inequality, without adversely affecting the revenue requirements of municipalities.

Cost-reflectivity and transparency principles will be phased in over a period of 10 years.

The NER shall ensure the implementation of pricing policy principles contained herein through licensing conditions over a period of 10 years.

The NER shall design and implement mechanisms within the wholesale pricing system and the competitive electricity markets to ensure that wholesale electricity customers continue to make a fair contribution to levies until a substitution funding mechanism for such has been implemented.

4.2.7.2. Implementation time frame

The wholesale electricity pricing shall be implemented no later than the date of the implementation of the REDs. The NER shall oversee the implementation of electricity wholesale pricing.

The wholesale electricity pricing shall be implemented no later than the effective date of implementation of the REDs.

4.2.7.3. Obligations to supply

A municipality as constitutional service authority is obliged to supply or facilitate the supply of electricity to customers in its jurisdiction:

Municipalities can cede their obligation to supply electricity in their areas of jurisdiction to relevant REDs. The said REDs will then have an obligation to supply customers within their area of jurisdictions. Where a customer has a choice of supply, the concerned RED will still be obliged to supply such customer if such customer chooses not to exercise his (her) choice of supply.

Traditionally, Eskom has regarded itself as the supplier of last resort, hence a de facto obligation to supply, even though there are no provisions in either the Electricity Act (Act 41 of 1987 and its amendments) or (Eskom Conversion Act, No 13 of 2001), that enforce this requirement.

With the formation of the REDs and the possible entry of private sector investors in the generation and other players (traders, retailers, financial brokers, etc.) in the ESI in future, the question of who has the obligation to supply becomes critical and will be addressed in a different text.

The DME, in consultation with the Department of Public Enterprises, shall ensure the national security of supply of electricity.

With regard to end-user customers, the REDs shall have an obligation to supply. No end-user customer who can demonstrate that (s)he can pay for the services rendered to them may be refused access to any RED's network unless such customer's activities negates the guaranteeing of the quality of supply of electricity services.

All customers shall have obligation to pay for the electricity services provided to them.

Customers, traders and retailers who qualify for the wholesale pricing and who have a freedom to choose a supplier should protect their own interest through the provisions of a contract negotiated with supplier of their own choice. In this regard, such customers, traders and retailers shall carry the risk of breach of contract and take necessary steps to hedge such risk.

4.2.7.4. Externality and environmental costs

For the electricity industry, negative externality costs relate to the pollution of environment in the form of air borne particulates, greenhouse gases produced, visual pollution, pollution of rivers, uneconomic usage of the landscape, etc.

Electricity industry participants should use environmental friendly modalities of generating and supplying electricity in line with prevailing legislation.²

² Externality levies are not discussed further in this document. The National Treasury has undertaken a research study on the Effectiveness of Energy Subsidies and Taxation that is currently under consideration. The study covers inter alia recommendations on taxation of externalities in South Africa in line with international experiences. Appropriate revisions to this policy will be made in line with the National Treasury directives, where necessary.

Environmental benign requirements will become an integral part of the license and tariff approval conditions. The Department of Minerals and Energy has taken initiatives through some of its programmes to encourage the use of renewable energies in direct generation or avoided generated of electricity.

With increasing awareness of the effects of pollution such as global warming, it becomes necessary for investors to consider externalities as an input in their production costs. This can be done through supporting green energy programmes, purchasing of environmental friendly technologies in generation such as conversion from coal to gas based generation and engaging in other pollution mitigation research and technology interventions at their own costs. Generators can also buy into existing renewable energy schemes to defray their existing negative environmental impacts.

Externality levies are not discussed further in this document. The National Treasury and other relevant Government Departments have undertaken a series of research studies and consultative forums on externalities, and environmental taxation in line with international experiences. Appropriate revisions will be made to this policy in line with the National Treasury directives when necessary.

NER will develop incentive-based tariff structures and other instruments to promote energy efficient and environmental friendly electricity industry.

As renewable electricity generation is introduced into the electricity multi-markets, the Department of Minerals and Energy will progressively monitor the adequacy of the established grid code to provide for fair treatment of non-conventional forms of electricity generation fed into the grid.

4.3. Electricity Retailing

4.3.1. Cost-reflectivity and transparency

According to the EWP, “ Cost-reflective tariffs will be applied at electricity distributor supply points in due course”. In this regard, all electricity prices shall be differentiated into

components for the electrical energy itself, transportation of the electrical energy along transmission and distribution wire networks and any services rendered to the purchaser (such as metering, billing, sales and marketing, administration, etc.)

In accordance with the EWP, electricity tariffs shall be cost-reflective in the medium to long term. It is recognised that electricity must be affordable especially to indigent households and remote SMME establishments, within the envisaged 10-year implementation framework.

Cost-reflective tariffs may not be affordable for certain categories of consumers. As a trade-off between cost-reflectivity and affordability, full cost-reflectivity of distribution tariffs will be phased in over a period of time in line with strategic, economic and social impact studies that may be undertaken to review the effectiveness of Government's social policies.

All tariffs, levies, taxes, subsidies and cross-subsidies contained within electricity prices shall be transparent and shall be indicated on electricity bills presented by suppliers, traders, retailers and distributors to their customers.

While recognizing the need for TOU cost of supply methodology, for affordability reasons, TOU tariffs application to indigent customer shall be limited within the concept of cost-reflectivity. The NER shall from time to time determine reasonable tariff structures for such customers.

4.3.2. Energy wheeling charges/ transportation charges

In the near future energy charges shall be separated from the distribution charges. Customers will be required to pay for both the energy distribution (transportation) and services/transaction charges separately.

All wheeling charges shall be subject to the approval of the NER

4.3.3. Retail/support functions

The NER shall provide for enabling metering and communication technology interventions to enable cost-reflective and transparent electricity pricing in the distribution sector through licensing conditions.

4.3.3.1. Cross subsidies in context

The retail or the distribution sector of the electricity business has been the most subsidized sector of the whole electricity industry. In many cases the municipal tariffs are higher than those for similar sized industrial consumers (outside LTAs or supply contracts for EIU) supplied by Eskom. The extent of cross-subsidisation in municipal licensed areas differs from those in Eskom licensed areas

The NER shall rationalise existing electricity distribution tariffs into an integrated electricity tariff structure for the EDI in line with the principles of cost-reflectivity and transparency.

Different types of customers are explained in detail below:

4.3.3.2. Energy Intensive Users (EIU's)

Industries and the commercial sector form the backbone of the South African economy, therefore, there is a need for the provision of inexpensive electricity as an input cost of production. Some large electricity consuming industries have arranged long-term supply agreements with Eskom generally on favourable terms to the industry. This policy recognises the sanctity of these agreements and the NER will be required to put a mechanism in place within the transitional phase to account for these agreements. In future, large customers will have freedom to choose their suppliers in the multi market stage of the ESI.

4.3.3.3. Commercial sector

These are mainly businesses in the Central Business Districts like office buildings, department stores, hospitals, clinics, Government departments, etc. These customers have a variety of different demand profiles and differ from the EIU customers supplied by Eskom and municipalities. Most commercial operations consume less than 100 GWh per annum and thus do not qualify for wholesale pricing.

4.3.3.4. Agricultural sector

The agricultural sector requires extensive electricity capital investment in infrastructure and has the lowest demand of electricity in relative terms. Presently, this sector is mainly supplied by Eskom and is highly subsidised. The tariffs charged are generally insufficient to cover the capital, maintenance and operational cost associated with supplying these customers. This sector is therefore subsidised by other electricity consumers. These subsidies should be fully identified.

Cost-reflective tariffs for agricultural sectors shall be phased in over an extended period of time as determined by the NER.

Top up subsidies should be provided outside the electricity tariffs framework.

As the electricity industry based subsidies are reduced for the agriculture industry, equivalent top-up subsidies should be sourced from relevant government department's(s) in respect of all agricultural activities³.

4.3.3.5. Domestic customers

The current costs of metering domestic customers on time of use are too high relative to their consumptions. This is one of the reasons why domestic tariffs are generally structured on a single energy rate, or a fixed charge and single energy rate, independent of time of use. The domestic tariffs are generally simply structured with all the costs averaged.

Domestic tariffs will be restructured towards better-cost-reflectivity in due course.

4.3.3.6. Electrification customers

Electrification customers connected through the Integrated National Electrification Programme are further subsidised since such customers cannot afford to pay for both capital, operational and maintenance cost of the electricity infrastructure provided to them. Operational subsidies for electrification customers are generally provided by the industrial sectors and will be phased out as determined by social objectives.

Subsidies to electrification customers will be reviewed by the NER in line with Government policies from time to time, with the view of moving towards cost-reflectivity.

4.3.4. Support to other classes of consumers

4.3.4.1. Free Basic Electricity (FBE) in context

Free Basic Electricity (FBE) allocation of 50kWh per month per qualifying grid-connected household was introduced in order to be in line with the principle of universal access to electricity as embodied in the EWP. This amount of electricity is partially funded through the fiscus and any amount consumed beyond 50kWh will be purchased at the ruling municipal or Eskom tariffs. This is done to reduce further cross-subsidies in the electricity industry.

The Department of Provincial and Local Government (DPLG) will monitor the implementation of FBE and the Department of Minerals and Energy will advise accordingly if a need arise for the tariff adjustment.

The NER shall in consultation with the relevant stakeholders advise the DME on the FBE tariff level and any proposed adjustments, for approval and implementation by the distributors.

³ Diesel; seeds; electricity; infrastructure; maintenance; water supply, etc.

4.3.4.2. Special customers categories

This category of customers includes institutions like government buildings (schools, hospitals and clinics), community centres, government departments, non-governmental organizations (NGOs) and Community-based Organizations (CBOs). The electricity demand of these institutions varies and it is for this reason that distributors classify them differently, either as commercial or domestic consumers.

Many non-profit institutions have approached the Department of Minerals and Energy to request consideration for special tariffs. The restructuring of the EDI as proposed in the EWP, necessitates a move away from subsidies in the EDI, and thus any special tariffs. Notwithstanding the above, the cost-reflectivity approach reduces price distortions thereby preparing consumers for the introduction of competition in the electricity sector.

There shall be no special subsidies for Government or Government funded institutions in terms of electricity pricing. Government institutions shall be required to budget for the full cost of electricity services anticipated in the financial year in question. Any subsidies must be procured through the inter-governmental transfers⁴.

4.3.5. Time frame

A Framework for Managing Retail Electricity Pricing shall be implemented simultaneously with the implementation of the REDs.

The NER shall ensure the implementation of policy principles contained herein over a period of 10 years through licensing conditions.

4.3.6. Levies and Taxes

Invisible levies have in the past been imposed on purchases of electricity of large consumer categories in order to cross-subsidise other categories of end-user customers for whom electricity may be unaffordable. Respectively, levies have also been imposed in order to subsidise the electrification programmes in South Africa in the past.

In terms of prevailing municipal legislation, municipalities can impose levies on electricity consumers supplied by them, for the purpose of subsidizing other services. While

municipalities have a constitutional prerogative over the provision of basic services in their jurisdictions, the issues of tariff determination and approvals fall under the jurisdiction of electricity legislations, hence under the directives of the Department of Minerals and Energy and the NER tariff approval process.

The principles of cost-reflectivity and transparency should apply similarly in municipal levies setting processes.

It will be the large customers and hence current contributors to levies that will gain access to wholesale electricity pricing future competitive markets. This introduces the possibility of these customers escaping their contribution to levies unless mechanisms are introduced to manage that.

Quantifiable contributions to subsidies have been calculated and will be recovered from wholesale electricity customers as transparent levies. Non-quantifiable contributions to cross-subsidies are recovered by way of a transparent surcharge, determined as the difference between revenue at the retail and wholesale tariffs, using the historic load profile as reference.

Since a tariff change from a retail tariff to wholesale will not change the costs and hence revenue requirement of distribution businesses to any significant degree, levies can only be reduced if alternative central funding mechanisms have been determined. Industry restructuring will therefore not change the underlying costs or the need for cross-subsidisation. It is only mechanisms to collect and disburse levies and subsidies that could be changed.

It is important to note that any levies to be imposed on qualifying wholesale customers (those customers that will qualify to purchase energy in the Wholesale Market) are recovered at the level of end consumption. Until the current EDI is changed, wholesale customers will be billed by the distribution sector. The EDI will retain the revenue from the levies within the business and apply it to continue subsidising other customers within its jurisdiction.

⁴ Electricity infrastructure, maintenance and energy and service costs must be budgeted for through relevant government departments through the MTEF.

In a case of intensive energy users on wholesale not paying levies to a distributor/RED but to another supplier (transmitter), mechanisms must be set up and approved by the NER to ensure the transfer of the equivalent of such levies to the appropriate distributor /RED. These levies will apply after the electricity surge charge has been phased out.

With the introduction of restructured markets (REDs and multi-market) this becomes more complex and is discussed below.

All levies, subsidies and cross-subsidies shall be made transparent, while moving towards cost-reflective and transparent tariffs in the electricity industry.

The collection and distribution of funds for cross-subsidies shall be regulated by the NER in collaboration with the DME and the National Treasury until these have been completely phased out. The provision of external subsidies shall be a responsibility of National Treasury working closely with DME and DPLG.

4.3.7. Institutional Arrangements

The economic component framework of the electricity pricing in the retail sector shall be implemented and monitored by the NER in line with the prevailing electricity legislation. The line function Government departments will administer their respective external subsidies.

The framework for the social component of the electricity pricing will be implemented and monitored by the Department of Minerals and Energy in consultation with the National Treasury and other relevant government departments or agencies.

CHAPTER 5

5.1. CONCLUSION

Within the existing structures, the ESI is well positioned to implement wholesale electricity pricing and to deal with cross-subsidisation issues. However, restructuring of the EDI and ESI will need a fundamental review and redesign of this important aspect of the industry.

The issue of cross-subsidisation is by and large not an ESI/EDI restructuring issue only. Implications of cross-subsidisation should be dealt within a policy framework and market design. It should be noted that the revenue requirement from levies in order to subsidise certain customers will not immediately change, particularly in the local sphere of Government. At present, only the mechanisms for collecting and disbursing funds will change. Over time, the subsidies will be phased out in order to achieve full cost-reflectivity and affect competitive pricing in the electricity multi markets.

Levies and taxes will remain outside the realm of the DME and will be determined by the National Treasury.

REFERENCES

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- c) *WEPS Working Group, (2000); Wholesale Electricity Pricing System*
- d) *Electricity Act 1987, (Act No 41 of 1987) as Amended.*
- e) *White Paper on Renewable Energy 2003, DME*
- f) *World Bank Standard Documents on Energy Subsidies.*
- g) *Eskom Pricing Plan / Structural Changes for 2003*