

# **SUBMISSION TO THE PORTFOLIO COMMITTEE ON TRADE AND INDUSTRY (COMMITTEE) ON ESKOM'S MULTI-YEAR PRICE DETERMINATION (MYPD 3) APPLICATION**

## **PURPOSE**

Eskom has submitted its MYPD 3 application to the National Energy Regulator of South Africa (Nersa) during October 2012. This has marked the beginning of a process that includes engagement with stakeholders regarding the application.

On the 2 November 2012 Eskom presented the details regarding its MYPD 3 application to the Committee.

A number of issues were raised by the Committee and as requested, Eskom sets out herein its responses to the issues that have been raised.

Before dealing with the specific questions/issues raised, for the purposes of clarity and ease of reference, Eskom has set out below an executive summary extracted from its MYPD 3 application.

## **EXECUTIVE SUMMARY OF ESKOM'S APPLICATION**

### **Introduction**

The current Multi-Year Price Determination, MYPD 2, ends on 31 March 2013. Eskom must submit an application to the National Energy Regulator of South Africa (Nersa), who will determine the country's electricity price adjustment for the next period and tariff structures for 2013/14. In contrast to MYPD 1 and MYPD 2, both of which spanned three years, Eskom is proposing a five-year determination for MYPD 3, running from 1 April 2013 to 31 March 2018. This is to ensure a more gradual and predictable price path for households, businesses, investors and the country as a whole.

Eskom's five-year revenue request translates into average electricity price increases of 13% a year for Eskom's own needs, plus 3% to support the introduction of IPPs, giving a total of 16%. This represents a total price increase from the current 61 cents per kilowatt-hour (c/kWh) in 2012/13 to 128c/kWh in 2017/18. This revenue request includes targeted savings in operating and primary energy costs due to targeted improvements in efficiency over the period.

### **Why are price increases necessary?**

Eskom needs to keep the lights on and this has a cost. For historical reasons, electricity is currently charged at below cost-reflective levels and is not sustainable. Electricity prices need to transition to cost-reflective levels to support a sustainable electricity industry that has the resources to maintain operations and build new generating capacity, guaranteeing future security of supply. Failing to accommodate the country's energy needs would limit investment, which would result in fewer jobs and lower economic output.

Cost-reflective prices minimise economic distortions caused by inadvertently subsidising all consumers of electricity. If prices are not cost reflective, then in effect every unit of electricity supplied is subsidised, either by taxpayers or by future users of electricity.

### **What is the impact of price increases?**

The transition towards cost reflectivity poses several challenges. Eskom believes poor households should be protected from the impact of electricity price increases through

targeted, transparent cross-subsidisation in accordance with a national cross-subsidy framework. Failure to achieve cost-reflective prices sooner will impact on South Africa's economy and its growth prospects.

The MYPD 3 revenue application aims to find an electricity price path that contributes to long-term economic growth and job creation while minimising the short-term effects on vulnerable sectors and offering protection to low-income households. The period over which this transition occurs is key. Gradually phasing in cost reflectivity may give the country time to adjust to higher prices, but there are limits to the extent to which this can be done. The application seeks to find a practical, sustainable path to achieve cost reflectivity over the medium term and predictable price path to the MYPD period following MYPD 3.

### **What is Eskom asking for?**

In keeping with the Electricity Regulation Act (2006), Eskom is allowed to recover its costs, provided that they are efficiently and prudently incurred, and to make a reasonable return. The revenue being requested will cover the following:

- Primary energy: The cost of basic natural resources used to produce electricity – including coal, water, biomass and sorbent (excluding IPPs) – increases by an average of 8.6% per year within the MYPD 3 period and by 11% per year (within the period) with IPPs incorporated. If 2012/13 is included as the base then primary energy costs increase by 10% per year.
- Operating costs: Eskom's operating costs increase by an average of 8% per year within the MYPD 3 period.
- Depreciation: Depreciation increases by just under 10% on average per year over the period (including 2012/13 as the base).
- Return on assets: The return moves from 0.9% in year one of the MYPD 3 period to 7.8% at the end of the period, below the Nersa targeted pre-tax return of 8.16%, as well as Eskom's WACC of 8.31%. However, over the entire MYPD 3 period the return is less than 4% pre-tax.

Eskom's revenue requirement up to 2017/18 translates to price increases of 13% for each of the five years, for Eskom's needs, taking into account the Eskom capacity expansion (returns and depreciation) up to the substantial completion of the Kusile power plant, plus 3% to support the introduction of IPPs, mainly the impact of the DoE Peaker Plant (1020MW) and the inclusion of all three rounds of the renewable energy independent power producer (IPP) bid programme (3725MW), giving a total of 16%. It includes operating costs, primary energy costs, depreciation and a return on assets.

### **Assumptions**

Eskom's application assumes that electricity demand will increase by 1.9% compound annual growth a year over the MYPD 3 period, and that Nersa will approve extending the control period from the current three years to five. It also assumes that:

- With regard to capacity expansion as a minimum, Eskom will only be required to secure financing up to the completion of its current capacity expansion programme, which ends with the commissioning of Kusile power station in 2018/19.
- Provision needs to be made for the 3 725MW renewable energy independent power producer (IPP) programme being undertaken by the Department of Energy (DoE) (in line with the Minister of Energy's Section 34(1) determination in terms of the Electricity Regulation Act) and the 1 020MW DoE peaker plant (comprising two open cycle gas turbine plants).

- There will be single-digit annual average increases in primary energy costs, excluding the IPPs.
- A mandatory Energy Conservation Scheme (ECS) to prompt South Africa's largest energy users to curb their usage will be in place (but only implemented if necessary).

### **Context of application**

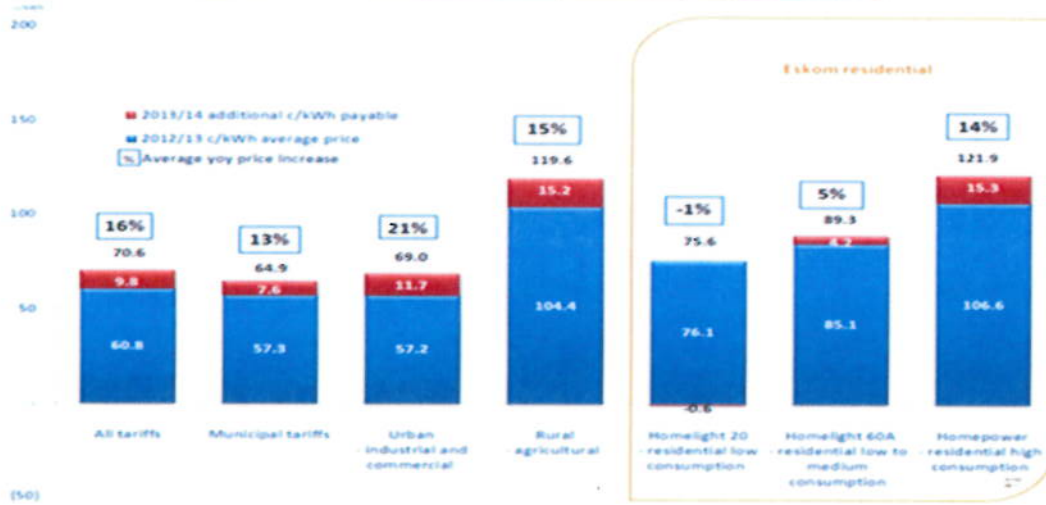
The application is made in the context of some uncertainty about the course of the electricity sector and Eskom's role within it. Long-term decisions regarding who will build South Africa's future generating capacity have yet to be made and this is being addressed by government. With regard to capacity expansion, Eskom's application is based on the new capacity (depreciation and return) up to the significant completion of Kusile power station. It includes the DoE's peaker plant of 1020MW and the renewable energy IPP bid programme, which caters for a total of 3 725MW of renewable capacity, pursuant to the determination by the Minister of Energy. Only determinations up to and including 30 September 2012 have been included in this application.

However, the country needs additional capacity beyond this to ensure future security of supply. It would be irresponsible for Eskom not to highlight the implications of the additional capacity needs. To provide an idea of the potential costs involved, Eskom has modelled the implications of two scenarios – Eskom being tasked with building 65% of the Integrated Resource Plan (IRP) 2010 capacity as well a scenario where Eskom is tasked to build 100% of the IRP 2010 capacity. We believe that these two scenarios will provide a reasonable basis on which to understand the pricing implications of the additional capacity needed. The implication of these scenarios is the need for price increases of 20% per annum for the next five years and 9% per annum for the five years thereafter.

### **Tariffs**

Eskom's revenue requirement results in a single average price increase that is translated into specific tariff increases for each tariff. The summarised impact on the different customer categories is provided below. In addition to the revenue request, Eskom requests that Nersa considers modifications to the existing tariff structure. Residential tariffs should be restructured to simplify understanding and to optimise the protection of the poor, while high-usage residential customers pay more cost-reflective prices. Further tariff restructuring proposals are also made to make the tariff structures more efficient, cost reflective and improve transparency.

## Increases per customer category



### Conclusion

The submission of this MYPD 3 application is the beginning of a public process to address the issues raised in Eskom's application – in particular, sustainability of the electricity industry and security of supply. Nersa is an independent regulator and will follow a process of public consultation prior to making its decision. Stakeholders are encouraged to participate in this process.

Eskom's MYPD 3 application strikes a balance between the possible short-term negative effects of increasing electricity prices, the sustainability of the industry and South Africa's long-term economic and social needs.

## RESPONSE TO QUESTIONS /ISSUES RAISED

The cash flow of Eskom looks healthy and Eskom will be making sufficient profits. Why then are the 16% price increases necessary? Why does Eskom not fund its requirements through debt? Eskom is a monopoly with low risk.

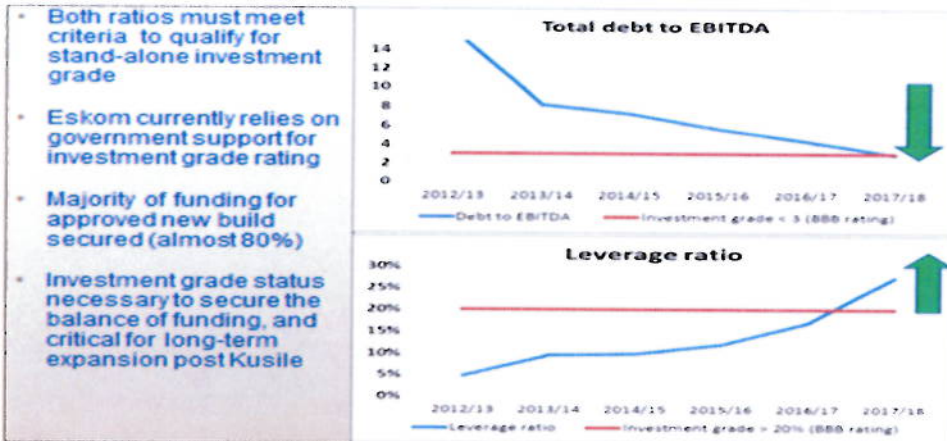
Eskom is funded through a mix of revenue, borrowings and equity. The MYPD 3 application deals with the revenue component. However, it is also important for Eskom's ability to access borrowings and provides the basis upon which lenders will make funds available to Eskom. It is no different to an individual who requires a home loan from a bank. The bank, in considering the extent and terms of the loan, will assess the applicant's creditworthiness by looking at the person's income or salary. Similarly, in accessing borrowings, lenders will look at Eskom's income. Eskom therefore does fund its activities with an appropriate mix of revenue and debt. This is illustrated in the cashflows of the MYPD 3 period below, which show debt peaking at over R360 billion during the period as the build up to Kusile is completed.

### Cash flow



Company Cash Flow	2013/14	2014/15	2015/16	2016/17	2017/18	MYPD3 Total
Revenue	153,935	180,195	213,376	248,963	294,132	1,090,601
Arrear debts	(921)	(1,077)	(1,275)	(1,498)	(1,665)	-6,436
Primary Energy	(67,495)	(78,516)	(87,491)	(95,617)	(103,781)	-432,902
Amortisation (included in Primary Energy)	1,171	1,961	2,580	3,146	3,146	12,005
Working capital changes	976	(1,143)	299	744	744	1,620
Employee benefit	(22,572)	(24,791)	(26,931)	(29,491)	(31,555)	-135,340
Other opex	(23,211)	(25,118)	(28,114)	(30,601)	(31,868)	-138,911
<b>Net from income statement (Cash from operations)</b>	<b>41,884</b>	<b>51,511</b>	<b>72,442</b>	<b>95,646</b>	<b>129,153</b>	<b>390,636</b>
Capex (incl NX future fuel) [B]	(72,107)	(68,016)	(64,935)	(67,098)	(65,000)	(337,156)
<b>Net Borrowing (Requirement)/Surplus [A + B]</b>	<b>(30,223)</b>	<b>(16,504)</b>	<b>7,507</b>	<b>28,548</b>	<b>64,153</b>	<b>53,481</b>
Debt Raised	57,348	52,077	52,546	30,392	9,000	201,362
Debt Repaid	-9,829	-18,715	-30,723	-22,461	-44,972	-126,700
Net Finance Cost	-13,048	-17,213	-26,970	-29,113	-28,844	-115,188
<b>Cash from Funding activity</b>	<b>34,471</b>	<b>16,148</b>	<b>-5,147</b>	<b>-21,183</b>	<b>-64,815</b>	<b>-40,526</b>
<b>Net Cash Movement</b>	<b>4,248</b>	<b>-356</b>	<b>2,360</b>	<b>7,365</b>	<b>-663</b>	<b>12,954</b>
Existing Liquid Assets	17,772	20,352	18,231	19,402	25,565	
<b>Closing Liquid Assets</b>	<b>22,020</b>	<b>19,996</b>	<b>20,591</b>	<b>26,767</b>	<b>24,903</b>	
<b>Balance Sheet</b>						
Debt Securities / Borrowings	287,951	330,617	355,982	366,914	333,011	
<b>Credit metrics</b>						
FFO/Gross debt (target > 20%)	9.54%	9.82%	12.00%	16.90%	27.34%	
Gross debt/EBIDTA (Target < 3)	8.20	7.26	5.65	4.37	2.96	

The cash flows and profits also need to be considered within the context of a longer term view. At the moment Eskom is not achieving the credit ratios required by the rating agencies to achieve a standalone investment grade rating. With the proposed application, Eskom will achieve the necessary thresholds towards the end of the MYPD 3 period, provided that the price increase is allowed. This is illustrated below:



In addition, the returns projected over the five year period is in the region of R186 b against an interest payment obligation of R140b. The balance of the return will be re-invested in Eskom for the benefit of the customer. If the required returns are not earned, Eskom will not achieve the above ratios and could be downgraded, meaning that it may not have access to capital markets to raise debt to fund its activities.

The return that Eskom will be earning moves from 0,9% to 7,8% and averages at a return of less than 4% over the period. This is significantly less than the targeted return allowed by Nersa which is 8,16% and represents an investment into the economy by Government as shareholder in the region of R200b. It is also significantly less than what any private sector entity would accept.

**How is the 8,16% return calculated? The cost of Government debt is lower and Government can guarantee the debt to lower the cost of debt for Eskom – please explain.**

Government already supports Eskom with guarantees in the region of R350b, approximately half of which has been used. The capacity of Government to provide further guarantees is limited as it will have an impact on the national rating.

The cost of debt has been calculated by Eskom, Nersa as well as by KPMG as a consultant on Eskom's behalf. A copy of the letter in this regard from KPMG to Eskom is attached and shows the calculations which confirm that the cost we have included in the MYPD 3 application is appropriate.

**Eskom is a monopoly and should be broken up – why is this not done as this will result in lower prices? Why is Eskom not established as two companies for the existing and new operations?**

The structure and ownership of Eskom is a national policy issue and is therefore not a question that should be directed at Eskom. However, it should be pointed out that during the 1990s when privatisation was being explored, the main impediment was that the low electricity prices were not attractive to investors. In addition, in the short term the unbundling of Eskom and the introduction of private participants would not result in lower prices given the higher returns that would be required.

**Would Eskom be willing to supply certain municipal customers directly? Explain the rationale /process for supplying private sector customers directly? We are led to**

**believe that certain customers including retail outlets can be supplied directly by Eskom within a municipal supplied zone.**

There are three factors that need to be considered in this regard. First there is a constitutional issue in terms of which local authorities have the right to supply electricity within their jurisdictions. Second, there is a technical issue and whether Eskom is able to supply a municipal customer directly depends on where that customer is located on the network. Third, even if these issues were addressed, there would be financial consequences for local authorities that would need to be addressed as a result of the lost revenue.

The approach in this regard will therefore have to be directed by Government policy and will need to provide an integrated solution to all of the above issues.

Currently, when a new customer needs to be connected with the area of supply of a municipality, the municipality has the right to supply the customer. Where the particular municipality does not have sufficient capacity or infrastructure or believes that it may be cost effective for Eskom to supply such a customer, and if permitted by the technical network, Eskom may be required to supply such a customer directly. However, Eskom has no basis to do so without the consent of the municipality.

**Has Eskom taken into account the fact that municipalities add significant demand-side charges to the electricity tariffs, including non-tariff charges and levies?**

The tariff increase proposed for municipalities is 13%. Eskom is aware that municipalities add various costs to the tariff charged to their customers. However, this is not a matter that can be addressed by Eskom and is an area that Nersa will need to consider.

**Is there any moral hazard in the way in which Eskom has calculated the costs of its build programme, which has been used to calculate the MYPD tariff structure?**

The costs of Eskom's build programme has been calculated in accordance with the regulatory rules published by Nersa. It should be pointed out that Eskom does not fund its capacity expansion programme directly through electricity prices. Rather, electricity prices shape its income statement and balance sheet, influencing investor confidence and its credit rating. Price provides the basis for Eskom to raise the debt it needs to finance capital expenditure. Only a return (primarily to cover the interest bill) on invested capital during the build phase is included in the price. Once the units come into operation then the tariff includes a depreciation cost for the units.

The levelised costs of Medupi and Kusile are significantly below the 95c/kWh claimed by the Energy Intensive Users Group in its presentation. Eskom has emphasised that the levelised costs of these projects are well below the average 77c/kWh at which Eskom bought power from independent power producers in the latest financial year.

The costs of Medupi and Kusile are also in line with international benchmarks.

## Project cost benchmarks - overnight cost (\$/kW) benchmarks



Source	Exchange Rate R/US\$	Technology	Overnight cost (\$/kW)	Cost Components	Medupi – Overnight Cost (\$/kW)	Kusile – Overnight Cost (\$/kW)
EPRI (May 2010) Data for IRP2010	7.4	Pulverized Coal with FGD	2,403 - 2,656	Basic cost Contingency	2,210	2,399
		Pulverized Coal without FGD	2,091 - 2,281			
Lazard (June 2009)	8.3*	Super-critical with and without carbon capture	2,800 - 5,925	Basic cost Contingency ODC IDC Transmission	2,785	3,269
IEA (2010 Edition)	8.2	Super-critical from various countries	572 - 2,539	Basic cost Contingency ODC	2,048	2,325

EPRI: Electric Power Research Institute  
 IRP: Integrated Resource Plan  
 FGD: Flue Gas Desulfurization  
 ODC: Owner's Development Cost  
 IDC: Interest During Construction  
 IEA: International Energy Agency

In support of

It should also be noted that Eskom's cost estimates for Medupi and Kusile have not changed since September 2009. At that time we estimated the cost of Medupi (excluding interest during construction) at R98.9 billion and of Kusile (excluding IDC) at R121 billion. These were submitted at the time of our MYPD2 application to the National Energy Regulator, which made its MYPD2 decision in early 2010 based on these figures. They have not changed except that we have now moved transmission expenditure out of the cost of those projects so the cost estimate for Medupi is now R91.2 billion and for Kusile R118.5 billion. Provision for contingencies is built into those costs and we remain comfortable with our estimates of the total cost.

Cost estimates did increase significantly between 2006/2007, before the projects went out to tender, and 2009. It should be remembered that Eskom was given the go ahead by Government to start building when it was already acknowledged that the country had left it too late. The projects were fast-tracked, based initially on 'virtual designs'. Once Eskom started the projects, the costs increased for three main reasons: scope changes, changes in market prices, and project delays, particularly at Kusile where uncertainty about funding caused a delay of almost a year, until October 2010 when Eskom put a funding plan in place for the build programme with government support.

**As Medupi and Kusile units are brought into service over the next 2-3 years, it appears that supply may move into significant surplus. What impact will this have on Eskom's electricity pricing approach, and what impact will such a surplus have on the increased cost base that will be recovered from the overall customer base?**

Eskom has indicated in its state of the system briefings that the period until the first unit of Medupi is commissioned in 2013 will continue to see a tight balance between electricity supply demand. This is due to the need to maintain our aging generation fleet to ensure long term sustainability while meeting the demand for electricity. Eskom has identified several supply and demand side interventions such as short term IPP procurement programmes and a residential demand side management programme to assist during this period. We have also called on the country to partner with us to use electricity efficiently through the 49m campaign. It is imperative that these initiatives are pursued to ensure security of supply in the next 2 years.

As the first units of Medupi and Kusile are commissioned, it is anticipated that the supply will meet demand assuming the demand projections contained in the MYPD3 submission. Higher growth rates may result in tight power system once again. This also assumes a



certain timing for the introduction of IPPs through the DoE Peaker Project and the DoE Renewable Energy programme.

The MYPD3 submission calls for a mandatory energy conservation scheme to provide a “safety net” and to manage demand to the levels assumed in the MYPD3 submission.

The growth rates in the MYPD3 submissions are lower than that required in the New Growth Path and the National Development Plan.

There may be a short period of adequate reserve margin but that will disappear very quickly if new generation capacity is not brought on line after Kusile and the economy grows. It is important to plan for a successful economy and build the infrastructure that will support it. The additional capacity will ensure that adequate maintenance can be carried out and also provides the basis to support renewables.

Eskom has pointed out in its application that Eskom’s committed build programme does not address all of the capacity needs of South Africa into the future. Therefore, assuming economic growth the country will very quickly need to build additional capacity or again face a security of supply challenge. Given the importance of electricity for the economy, having a safety net in terms of system adequacy is crucial to economic growth.

**Has Eskom taken into account the very real possibility that a number of energy intensive manufacturing sectors contain an electricity price tipping point in calculating its MYPD tariffs? Specifically in its latest MYPD 3 application?**

In compiling its MYPD 3 application the impact of prices increases on the economy has been an important consideration. Eskom has also been guided by the State of the Nation address in which the President requested Eskom to consider a “price path which will ensure that Eskom and the industry remain financially viable and sustainable, but which remains affordable especially for the poor.”

The choices that need to be made are difficult, but Eskom believes that its application achieves an appropriate balance in this regard. Eskom has proposed a longer migration path to cost reflective levels and has lowered the rate of return significantly. There is a threshold at which Eskom will also face a tipping point if prices are too low.

Electricity is crucial to our economy and there is a cost to operate the current plant and also to invest in future capacity. If prices are not cost reflective, that is, the price does not recover the full cost of supply, the shortfall will have to be paid for in another way. Therefore, if the prices are lowered and are not cost reflective, the shortfall may have to be paid for by Government, which in turn affects the taxpayer through additional taxes.

Prices that are not cost reflective are in essence subsidies and the beneficiaries are those that use the most power. There is also no price signal to ensure efficient use of electricity. South Africa has enjoyed the lowest electricity prices in the world for the last decade and over this period the energy intensity of the economy has almost doubled.

Targeted interventions by Government to protect vulnerable sectors is therefore more efficient and would lead to better economic outcomes. This approach is supported by National Treasury and an example of this approach is set out in IPAP (the Manufacturing Competitiveness Enhancement Programme). Eskom is of the view that, if there is a case to be made for support for particular economic sectors, this is a decision for government to make in terms of its industrial policy framework.

Eskom has in its application set out additional information regarding the studies that were commissioned to guide its approach regarding this crucial issue. An extract of the relevant section is set out in appendix 1 attached hereto.

In some of the work done by Eskom it emerged that most of the manufacturing and foundaries were situated within the municipal boundaries. Therefore, the issue of pricing for them is related to the pricing by municipalities rather than the Eskom price to its customers.

It is also important to consider that there may be broader issues beyond electricity pricing that may need to be considered in order to assist in stimulating economic growth and job creation. We need to consider whether addressing electricity prices by themselves will address the problems that are being faced. Are there any other issues that need to be addressed? Further, are the relevant companies as efficient as they can be and competitive on a global scale? Have they been creating jobs? How do they compare to their peers in terms of efficiency and energy intensity?

**The Energy Intensive Users Group claims that Eskom's costs of maintenance are higher than they should be because unplanned outages are running at over 14% of capacity, and it is more costly to do unplanned than planned maintenance. Is that the case?**

Their figures are not accurate. The unplanned outage ratio for the year to date is 10.47%. This is above our own target but well below the 14% shown in the EIUG's Slide 21. The EIUG also suggests that Eskom targets a ratio of 90:7:3 for its generation fleet, that is, 90% availability, with an average of 7% planned maintenance and 3% unplanned outages. This is an aspirational target which was achieved during the 1990s, when Eskom's power stations were a lot younger with low load factors. It is not appropriate for the current environment.

As already explained, the tight power system does not allow sufficient opportunity for philosophy based maintenance and this is the balance Eskom therefore needs to strike in keeping the lights on within a constrained system.

**It is not clear from the MYPD 3 application whether Eskom has included the 600 mw that is associated with the out of service Duvha unit that suffered damage recently. This unit is scheduled to come back into service but is not shown on the table which refers to capacity additions.**

The Duvha unit is regarded as a part of the existing capacity and is therefore not reflected under capacity additions, which refer to new build projects. The Duvha unit capacity is therefore included as a part of Eskom's existing capacity.

## **CONCLUSION**

The engagement with the Committee has been constructive and useful.

Eskom would like to extend its appreciation to the Honourable Members for the engagement and the interest shown in the MYPD 3 application.

We trust that we have addressed all of the issues raised by the Committee. Should any further information be required, please feel free to contact Eskom.

**DATED THE 13 NOVEMBER 2012**

**ESKOM**

## APPENDIX 1

### Key points

- Cost-reflective prices represent the true cost of generating, transmitting and distributing electricity. Eskom's prices are currently not cost reflective. The application proposes a five-year price path towards cost-reflective prices.
- The revenue request consists of four components: primary energy costs, operational costs, depreciation and return on assets (both calculated using depreciated replacement value). Nersa's approved prices should cover the costs of all these components, provided they have been prudently incurred.
- Cost-reflective prices support the financial viability of Eskom and the energy industry. This in turn improves security of supply by enabling Eskom to continue with its operations and obtain optimum financing for capacity expansion, as well as providing the correct price signals to encourage users to use electricity efficiently.
- Economic modelling shows that one alternative to cost-reflective prices – increased taxes – would have undesirable consequences for the economy. The key issue is finding an optimal migration path to reach cost-reflective prices.
- Electricity prices have a direct influence on Eskom's credit rating. The longer prices take to achieve cost reflectivity, the longer Eskom will have to rely on government guarantees to secure financing.
- Electricity prices also have a direct impact on Eskom's ability to service existing debt, which was secured with the help of government guarantees to the value of R350 billion. Eskom's ability to service its debt is therefore as important for South Africa as it is for the company.
- An appropriate price trajectory can support investment in IPPs. It can also give electricity consumers who have the ability to generate or co-generate their own electricity the correct price signals to do so.

Many electricity utilities, particularly in developing countries, are expanding to meet growing demand. The International Energy Agency projects that global electricity demand will increase from 17.2 million GWh in 2009 to more than 31.7 million GWh in 2035. The large infrastructure investments required to meet this demand can either be recovered over time from customers, through prices that reflect some or all of the cost of supply (including appropriate returns), or by governments, which recoup the costs through taxes or subsidies, or a combination of the two. In the former case, payment is mainly made by the electricity customer and is closer to "cost reflectivity", whereas in the latter case the burden is ultimately borne by the taxpayer and may not be optimal from an economic perspective.

Eskom believes cost-reflective prices are optimal for the South African economy and the electricity industry, because they encourage efficient use of a scarce resource (energy) and do not unduly burden present or future taxpayers with the costs of infrastructure investment.

From the 1980s to the early 2000s, the price of electricity declined in real terms (taking inflation into account) to levels below the cost of production and lower than those required to support investment in electricity infrastructure. South Africa now finds itself in a catch-up phase, with electricity prices increasing to align with cost-reflective levels.

The government has highlighted the need to expand infrastructure to meet demand for electricity and provide the basis for economic growth, job creation and universal access to electricity. If electricity pricing does not reflect the cost of producing and supplying electricity, the resulting poor financial performance and probable downgrade in Eskom's credit rating will make it difficult to raise capital to finance this expansion.

Nersa rules require that Eskom's costs be represented in terms of four building blocks: primary energy costs, operating costs, depreciation and return on assets (both calculated using depreciated replacement value). The first two of these blocks relate to annual running costs, while the latter two relate to the costs of financing investment in new capacity in a sustainable way. A cost-reflective price is one that covers all these costs in full, provided that they are efficiently or prudently incurred.

The EPP calls for cost-reflective prices by 2014/15. There is general consensus that meeting this deadline would require price increases that are too steep for South African households and businesses to reasonably bear. Eskom is therefore proposing a price path that will lead South Africa towards cost reflectivity over the MYPD period.

## **1.1 Advantages of cost-reflective prices**

### **1.1.1 Supporting a sustainable energy industry**

Prices that cover the costs of operations and include reasonable returns will create a financially viable energy industry that is attractive to investors. Financial sustainability of the energy industry is one of the goals underpinning the MYPD 3 revenue application.

### **1.1.2 Best option available**

If cost-reflective prices are not achieved, Eskom will have to find another source of revenue to pay for its operations and capacity expansion projects. One option would be to approach the government, as its sole shareholder, to add to the taxes already paid on goods and services (VAT), labour (income tax) and capital. If an IPP's price is not appropriately recovered by Eskom or the relevant buyer of that power, the shortfall will also need to be funded through alternative means.

A University of Pretoria study (Bohlmann and Van Heerden, 2012) modelled the impact of such tax increases. The study found that increasing taxes would negatively affect consumers' disposable income, resulting in reduced consumer spending (including on electricity, which would reduce Eskom's revenue) and lower domestic output. Similarly, high taxes on capital would discourage investment in businesses and reduce job creation, while increasing taxes on goods and services would affect the poor the most, undermining the country's developmental goals.

A similar study by Enerweb, specifically on the effect of additional taxes on households, also found that tariff increases were preferable to income tax or VAT increases. This was because households pay 56% of total national income tax but only 26.4% of the national electricity bill. If income taxes were used to finance electricity infrastructure, households would therefore be responsible for a far greater portion of the required revenue (56% rather than 26.4%) than if the revenue was acquired through tariffs. An increase in VAT would negatively impact on household consumption, with poorer households contributing a larger portion relative to their lower levels of income.

In summary, the research found that using taxes to fund the gap would have a severely negative impact on the economy and that, regardless of the price path adopted in principle, the effect on the economy of using state resources (in the form of taxes) was unpalatable.

### **1.1.3 Users pay for what they consume**

Cost-reflective prices minimise economic distortions caused by inadvertently subsidising larger consumers of electricity. If prices are not cost reflective, then in effect every unit of electricity supplied is subsidised, either by taxpayers or by future users of electricity. In addition, there are also inter-tariff subsidies. Currently, energy-intensive industries and affluent customers contribute the largest subsidies.

### **1.1.4 Improved energy efficiency and reduced environmental impact**

The University of Pretoria study cited earlier also found that non-cost-reflective prices failed to give customers an incentive to be energy-efficient. “Cheap” electricity would therefore result in increased energy demand, which would in turn put more pressure on generation capacity and require accelerated infrastructure expansion for little or no additional economic output.

Cost-reflective prices send the right price signals to motivate electricity users, particularly larger customers, to invest in energy-efficient technologies and processes. Such user behaviour has the potential to curb demand growth, helping to reduce environmental emissions from power generation and alleviating the need for purchasing additional costly primary energy and investment in generating infrastructure.

### **1.1.5 Improved security of supply**

Cost-reflective prices improve security of supply in two ways:

- They improve Eskom’s creditworthiness, helping it to secure finance for future capacity expansion.
- They encourage customers to use electricity efficiently, contributing to a supply/demand balance that allows Eskom to do essential plant maintenance, extending the useful life of generation, and transmission and distribution infrastructure.

## **1.2 Disadvantages of cost-reflective prices**

### **1.2.1 Steep price increases**

Transitioning to cost-reflective prices too quickly may require price increases that some customers, especially energy-intensive and low-margin businesses affected by the global economic downturn, may find difficult to adjust to. Eskom realises this and has proposed an extended period of price adjustment to smooth the impact of these increases.

### **1.2.2 Potential conflict with cross-subsidisation**

If poorly implemented, cost-reflective prices have the potential to add to the financial burdens of South Africa’s poorest households. A truly cost-reflective price, applied uniformly to all Eskom’s customers, would effectively erase cross-subsidisation and run counter to the government’s socioeconomic goal of protecting the most vulnerable. Eskom is working to ensure that cross-subsidies continue to be applied in parallel with the move towards cost-reflective prices. For more on cross-subsidisation see Protection for the poor in the Balancing the economic effects chapter.

### **1.2.3 Electricity theft and late payment**

The perception that cost-reflective tariffs are too high may result in an increase in electricity theft, which is undesirable both because it poses a danger to the public and because of lost revenue to Eskom. Late payment and default on payment may also increase.

### **1.2.4 Possible disincentive to investment**

Price increases may make South Africa seem less appealing for investment, particularly in the short term, because these price increases add to the basic costs involved in running or expanding a business.

## **1.3 Analysis of advantages and disadvantages**

On balance, the advantages of cost-reflective prices and the better economic outcome over the long term outweigh any economic disadvantages, so the need to move towards cost reflectivity is necessary. Most of the identified disadvantages can be minimised by adopting an optimal migration path and employing targeted interventions using other mechanisms for those customers that require assistance.