

# Comment on Eskom’s Proposal for Price Increase in 2008/9

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## **Background documents:**

“Eskom’s Draft Application for Price Increase in 2008/9”, dated 17 March 2008

“Nersa Draft Consultation Paper on Eskom’s Application for a Price Increase for 2008/9 financial year”, dated April 2008

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# 1. Background/Exec Summary

Eskom has made a request to NERSA for a price increase, above the 14.2%<sup>1</sup> already approved. It says that it seeks a 100% real price increase over 2 years. It provides 5 scenarios, but recommends the scenario with a 53% real price increase in 2008/9 and 43% in 2009/10, and then 'marginally above inflation' thereafter. Its financial analysis already incorporates government's R 60 bn loan.

Its stated objective is to:

1. Cover cost of its expansion programme
2. Cover the rising primary energy costs, coal and liquid fuel in particular
3. Cover the cost of its demand side management and power conservation programmes
4. Ensure financial sustainability in light of S&P' having put it on 'credit watch'

The HSRC has prepared a study which was funded by TIPS/Commark on the request of the Sector Strategies Co-ordinator in the Presidency. The study investigates the potential economic impact of differently distributed pricing or rationing options aimed at reducing peak electricity usage and electricity consumption. The study also considers the potential impact of different pricing proposals on Eskom itself<sup>2</sup>. This submission to Nersa summarises our findings in respect of this latter aspect. Please note that the views contained in this submission are that of the authors only, and do not represent the views of TIPS/Commark or the Presidency. They are shared with the intention of offering an independent technical view on Eskom's pricing proposal.

It is important to note that our initial estimates relied on public information, and that they may not have the precision possible with the use of information available internally to Eskom. We have made our spreadsheets available to the Eskom board and to the CFO for review and comment. We did receive detailed comment from Eskom, and have substantially revised our submission on this basis. It should be noted that the value of the exercise will not be in the precision, but rather to offer a technical framework upon which to judge Eskom's application.

The central arguments made in this document include:

1. We consider 4 scenarios in our modelling: the 53/43 split proposed by Eskom (which amounts to a 119% compound increase), a 3 year introduction of 100% compound price increase (26/26/26), 4 year introduction of 100% increase (19/19/19/19) and a five year introduction of 100% compound price increase (14.85/14.85/14.85/14.85/14.85).
2. We believe that the Eskom's proposed price increases enable an unnecessarily fast repayment of loan finance and exceed what is required to maintain credibility with its creditors. If no additional equity injections are made by the shareholder (other than that already committed), and if DSM is stripped out, we

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<sup>1</sup> The nominal price increase already approved is 14.2%. Eskom refers to this as equivalent to a 9% real increase. It is unclear why they are assuming an inflation rate of only 5.2%. Note that the modelling used for this submission assumes an inflation rate of 7% in 2008/9 and an average of 8% pa in subsequent years.

<sup>2</sup> The HSRC study was prepared with the support of WSP Energy Management Consulting. The study involved economy-wide modelling to assess the economic impacts of differently distributed price increases and rationing approaches, sector research to identify potential energy savings and associated timing and cost, plus financial modelling to assess the impact of pricing decisions on Eskom's financial position. A fuller study will be made available in June 2008.

estimate that raising the real price by 100% over 4 years (19% pa) would be sufficient to cover the cost of investment, provide adequate debt/equity ratios and support needed cash flow and interest cover. This includes primary energy costs forecasted by Eskom for 2008/9, subsequently rising by inflation in subsequent years. The interest cover in 2008/9 is tight: this could be remedied with a slightly larger upfront loading of the state's R 60bn injection in 2008/9. Currently these injections are loaded in later years: weak cash flow could be remedied if the state instead loaded this funding into the earlier years, for example by shifting R 3 to 4 billion into 2008/9 and 2009/10.

3. Price determination must be made with new levy in mind (R0.02/kW). This would add a further 10% to the average price. It is not an appropriate year to introduce this tax. It is recommended that it not be introduced in next 2 years. If Treasury does go ahead, we recommend that the earnings be retained by Eskom for one year at least, and that the price determination be reduced by the same amount.
4. More coordination is needed in the decision making process: while we make recommendations in respect of the proposed levy or the slightly higher up-front loading in the state's capital injection, these are not within the ambit of the current decision making process by Nersa.
5. The price of coal and liquid fuel is uncertain, and therefore the associated price changes should be considered separately to other costs from 2009/10. We concur with Eskom's recommendation for a rule change in respect of primary energy costs as laid out on page 27 of their proposal. Should primary energy costs rise faster than 8% pa after 2008/9, the price may need to rise by more than 19% pa.
6. Energy saving support measures (DSM) should be costed and paid for separately from this application. DSM objectives would be more appropriately handled through government's existing investment incentive programmes, such as the accelerated depreciation allowances or the dti's cash incentive programmes. We show the financial ratios with DSM included and excluded.
7. Considerable savings could be made in energy use by businesses, but this would require new investments. This takes time. Our research shows that with the appropriate incentives, firms could substantially reduce consumption over 6 to 18 months. Incentives are more likely to promote output enhancing investments, while rapid price increases may reduce output in the process of reducing energy use. A price increase that is introduced too rapidly will have a disproportionate effect on reducing output. There are quite a number of other challenges currently facing the economy, including inflation and dampening growth. It is essential that where possible, the electricity price not introduce an additional challenge.
8. We model the impact of introducing a sudden 72% and a 27% price increase. While this is not precisely that being considered, it does give a sense of the economic impact. The effects of this are not proportionate.
  - a. A 72% price increase would lead to 2.5% rise in inflation, a fall in GDP by 0.3% (or about R 67 bn) and a reduction in low skill employment by 1.4% (about 55,000 jobs).
  - b. If the electricity price increases by 27%, inflation rises by 0.9%, GDP falls by 0.1% and low skill jobs shrink by 0.3%.
9. It is worth noting that there are other reasons to raise the price of electricity. One purpose may be to reduce peak usage and/or to reduce overall consumption. This is not reflected in Eskom's document, nor is it the purpose of its proposal. Nevertheless, it is an important consideration, as any price

increase should be implemented in a way that maximises its combined impact on both peak usage and consumption. It is also worth noting that a 54% increase introduced over 2 years would likely reduce consumption by the sought-after 10%, *if there were no other incentives in place*. It has been noted that other factors will also encourage reduced consumption – such as fear of rationing and load-shedding, or positive incentives to introduce energy efficient technologies. Hence, the 100% increase is needed to cover costs only, and is more than that needed to reduce consumption by the desired amount.

10. We have concern that this price determination could be made in isolation of other important related decisions that do not necessarily fall within Nersa's ambit. As examples, we refer in this document to the location of DSM, the introduction of the new levy, and the timing of the state's injection.

This submission to NERSA reflects on:

1. the financial implications of alternative pricing scenarios
2. the implications of Eskom's proposals for the economy – for firms, and for growth, inflation and employment more generally.
3. comments on the approach to a price increase given multiple objectives

This document is a revised version of that submitted in April 2008. The initial document and the underlying spreadsheets were shared with Eskom, Nersa, the Presidency and Treasury, as well as a number of experts and stakeholders. We particularly received invaluable detailed comments from Eskom. Feedback received and revisions made to this document are summarised in the appendix.

## **2. Financial implications for alternate pricing scenarios**

Eskom has made a request to NERSA for a price increase. NERSA had already approved a nominal 14.2% price increase. Eskom says that it seeks a 100% real price increase over 2 years. It provide 5 scenarios, but recommends the scenario with a 53% real price increase in 2008/9 and 43% in 2009/10, and then 'marginally above inflation' thereafter (we call this "Scenario A"). Its financial analysis already incorporates government's R 60 bn loan. It is worth noting that this results in a 118.8% compound price increase.

We evaluate the Eskom proposal against three others. This includes a second scenario ("Scenario B") that introduces a real price increase of 100% over 3 years (26/26/26), and a third scenario ("Scenario C") that introduces a real 100% compound price increase over 4 years (19/18/19/19). The fourth scenario ("Scenario D") introduces a real 100% compound price increase over 5 years (14.85/14.85/14.85/14.85/14.85)

### **2.1. Financial objectives**

Eskom's stated objective is to:

1. Cover cost of its expansion programme
2. Cover the rising primary energy costs, coal and liquid fuel in particular
3. Cover the cost of its demand side management and power conservation programmes

#### 4. Ensure financial sustainability in light of S&P having put it on 'credit watch'

The financial viability of Eskom needs to be assured in order to successfully undertake and finance the generating expansion. It is recognised that the electricity price has been kept artificially low, and as a result, Eskom has not accumulated cash and resources ahead of the anticipated expansion projects. Moreover, the costs of the capital investment and of primary energy inputs have risen faster than anticipated. It is therefore recognised that above-inflation price increases are needed, as are special shareholder injections to support the financial position of the company. For any entity to undertake an expansion of the size of that which Eskom is envisaging would require a substantial shareholder contribution.

Government's approach to state owned enterprise finance is that it should work on the basis of cost recovery. In this special case, Government has made available R 60 billion in the form of semi-equity, which National Treasury has informed us would be treated by financial institutions as an equity injection.

The importance of meeting all of these objectives is recognised. Two central questions must be answered:

1. what is the required quantum and time span over which these increases are introduced in order to ensure that these objectives are met?
2. is it appropriate that the price increase incorporate DSM?

Our modelling focused on identifying the potential impact of 4 difference scenarios on: profitability; interest cover; and debt/equity ratios. We have received information from Eskom in respect of their view on performance required to maintain its credit rating. It should be noted that the targets identified by Eskom are also those appropriate for a public listed company. If Eskom is able to achieve these financial ratios, they should be seen as more than adequate for a state owned monopoly with virtually guaranteed demand. In this case, we focused on the following financial targets:

- o that Eskom would earn a net profit in the majority of years over the course of its expansion. It is not unusual for a private company to earn very low profitability in some years over which it is embarking on a major investment or expansion. We did not seek to achieve the profit rate allowed by Nersa.
- o Eskom's CFO has confirmed that Eskom is targeting an interest cover (which is the ratio used to determine how easily a company can pay interest on outstanding debt) of 3.0 in its effort to maintain its credit rating.<sup>3</sup>
- o Eskom's CFO has confirmed that Eskom is targeting a debt/equity ratio that is below 200% in most years.

We make the following assumptions in respect of Eskom's costs (also see notes in the appendix):

- o Some R10bn of the requested additional revenue (a 25% price increase in itself over end March 2007 figures) will be expended on securing coal at the new higher prices, and the cost of running Open Gas Cycle Turbine generation plants for extended periods. To be financially prudent all primary energy costs should be a pass through and should be

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<sup>3</sup> Interest cover is the ratio used to determine how easily a company can pay interest on outstanding debt. The interest coverage ratio is calculated by dividing a company's earnings before interest and taxes (EBIT) of one period by the company's interest expenses of the same period: The lower the ratio, the more the company is burdened by debt expense. A public or listed company might seek an interest cover of 3.0 to 5.0 or more. When a company's interest coverage ratio is 1.5 or lower, its ability to meet interest expenses may be questionable. An interest coverage ratio below 1 indicates the company is not generating sufficient revenues to satisfy interest expenses. A state owned monopoly might set a lower target than a listed company.

recovered in price increases. We sourced these energy costs from Eskom's proposal, where its primary energy costs rise from R 13 bn in 2006/7 to R 23 bn in 2008/9. In subsequent years, we assume that primary energy costs rise by inflation (estimated at 8%).

- We show the financial results if Government's R 60 bn contribution over the MTEF is treated as equity. We were assured by Treasury that financial institutions would treat it as equity, and that the contribution would be interest-free over the period under consideration. This will impact favourably on Eskom's debt/equity ratio.
- We consider the possibility of rising cost of finance. Provision is made for an adjustment of interest rates at above inflation and to reflect the premium which might be charged if the debt/equity (d/e) ratio exceeds 1.0 and then again 2.0. The premium has been set at 10% if d/e ratio is over 1.0 and 20% if the d/e ratio is over 2.0.
- We look at alternatives with DSM included or excluded
- Eskom informed us that their calculations in respect of their price proposal included losses from derivatives valued at R 3.8 bn. Our calculations do not include this item in our scenarios: these revenues are uncertain as evidenced by the large earnings in the previous 2 years.

## 2.2. Alternate pricing scenarios considered

We review the financial impact of the four pricing scenarios.

**Scenario A** shows Eskom's recommendation that the electricity price be increased by 53% in 2008/9 and then 43% in 2009/10, amounting to a 119% real price increase. Prices are increased by 1% above inflation thereafter.

**Scenario B** reviews the impact on Eskom of a 26% pa real price increase implemented for three years. This amounts to a 100% compound increase.

**Scenario C** reviews the impact on Eskom of a 19% pa real price increase, implemented for four years. This amounts to a 100% compound price increase.

**Scenario D** reviews the impact on Eskom of a 14.85% pa real price increase, implemented for five years. This amounts to a 100% compound price increase.

The four scenarios are summarised in the table below.

The Eskom application price increase (**Scenario A**) is intended to achieve a turn-around of the Eskom finances in a short period of time. Eskom will make an estimated R 27.4 billion profit (after taxes and interest) in 2009/10 rising to R 48.5 bn in 2012/13. Net profit before tax to total assets rises from 5.2% in 2009/10 to 15.9% in 2012/13. The debt/equity ratio falls below 200% in all years. Interest cover (calculated as operating profit divided by interest) is also in excess of what the market would require, where in most years it exceeds 5.

**Scenario B** shows what would happen if the real price increases by 26% pa for three years, amounting to a total compound increase of 100%. This price increase would enable Eskom to achieve profitability in every year, rising from R 1.3 bn in 2008/9 to R 24.1 bn in 2012/3. Interest cover is low in 2008/9 but then recovers. If DSM is stripped out, interest cover is 2.0 in 2008/9 and then well above 3.0 in every other year.

**Scenario C** shows what would happen if the price were raised by 100% over five years, with the real price rising by 14.85% pa. This price increase would result in a loss of 0.8 bn in 2008/9. However, this would recover from 2009/10, rising from R 7.0 bn to R 12.3 bn in 2012/3. Interest cover is extremely low in 2008/9, but returns to acceptable levels by 2010/11. If DSM

is excluded, interest cover is low in 2008/9, but then sufficient (although tight) in subsequent years.

**Scenario D** shows what would happen if the price were raised by 100% over five years, with the real price rising by 14.85% pa. This price increase would result in a loss of R 2 bn in 2008/9. However, this would recover from 2009/10, rising from R 0.9 bn to R 1.6 bn in 2012/3. Interest cover is extremely low for 3 years, and returns to acceptable levels by 2012/3. If DSM is excluded, Eskom breaks even in 2008/9, and profitability rises thereafter. Interest cover is very low in 2008/9, but then recovers to 1.9 in 2009/10 and improves in subsequent years.

As a reminder, we have identified financial ratios as indicated by Eskom which are also appropriate to public and listed companies. It is presumed that credit rating agencies and creditors would apply less onerous requirements to a state-owned monopoly with a guaranteed consumer base. This needs to be established.

From this we find that Eskom's proposed price increases enable an unnecessarily fast repayment of loan finance and exceed what is required to maintain credibility with its creditors. If no further equity injections are made by the shareholder, and if DSM is stripped out, we estimate that raising the real price by 100% over 4 years (19% pa) would be sufficient to cover the cost of investment, provide adequate debt/equity ratios and support needed cash flow and interest cover. This includes primary energy costs forecasted by Eskom for 2008/9, and then rising by inflation in subsequent years. While cash flow would be tight in 2008/9, this could be remedied with a slightly larger price increase in the first year, or a slightly larger upfront loading of the state's R 60bn injection in 2008/9. For example, raising the first year injection from R 6bn to approx R 9bn or R 10bn would make a big difference.

Eskom's recommendation for a rule change in respect of primary energy costs (pg 27 of Eskom's pricing proposal) seems sensible and fair.

The price determination must be made with new levy in mind (R0.02/kW). This would add a further 10% to the average price. It is not an appropriate year to introduce this tax. It is recommended that it not be introduced in next 2 years. If Treasury does go ahead, we recommend that the earnings be retained by Eskom for one year at least.

More coordination is needed in the decision making process: while we make recommendations in respect of the proposed levy or the slightly higher up-front loading in the state's capital injection, these are not within the ambit of the current decision making process by Nersa.

**Table 1 – Three pricing scenarios compared**

<i>Year ending .....</i>	<b>Mar.07</b>	<b>Mar.08</b>	<b>Mar.09</b>	<b>Mar.10</b>	<b>Mar.11</b>	<b>Mar.12</b>	<b>Mar.13</b>
<b>Scenario A - Eskom application</b>							
Application - real unit price increase (%)			53.0	43.0	1.0	1.0	1.0
Net profit after tax and interest (Rbn)	3.2	-0.8	6.7	27.4	35.3	42.2	48.5
Net profit before tax to Turnover	12.8	-1.9	15.1	38.0	37.7	40.2	40.3
Net profit before tax to Total Assets	5.7	-0.7	5.2	15.3	15.5	15.7	15.9
Increased borrowings (R bn)	-8.4	-30.9	-53	-36	-16	4	-5
Interest cover by profit before tax & interest	3.4	0.5	3.5	5.7	5.6	5.0	6.1
% Interest bearing debt over equity	58.3	114.4	196.3	189.5	165.2	134.2	106.2
<b>Scenario B - Double price over 3 years</b>							
Real unit price increase (%)			26.0	26.0	26.0	0.0	0.0
Net profit after tax and interest (Rbn)	3.2	-0.8	1.3	13.6	17.5	20.9	24.1
Net profit before tax to Turnover	14.3	-1.9	2.4	17.2	15.6	15.6	15.7
Net profit before tax to Total Assets	6.3	-0.7	0.7	5.2	5.3	5.3	5.4
Increased borrowings (Rbn)	-8.4	-30.9	-58.3	-49.4	-34.2	-17.0	-29.1
Interest cover by profit before tax & interest	3.4	0.5	1.3	2.5	3.3	3.2	3.5
Interest cover if no DSM	4.8	0.5	2.0	3.3	4.0	3.9	4.5
% Int. debt over equity	58.3	114.4	193.2	193.2	162.9	131.6	130.3
<b>Scenario C - Double price over 4 years</b>							
Real unit price increase (%)			19.0	19.0	19.0	19.0	0.0
Net profit after tax and interest (Rbn)	3.2	-0.8	-0.8	7.0	9.0	10.7	12.3
Net profit before tax to Turnover	14.3	-1.9	-1.4	9.7	9.3	8.5	8.1
Net profit before tax to Total Assets	6.3	-0.7	-0.4	2.7	2.7	2.7	2.8
Increased borrowings (Rbn)	-8.4	-30.9	-60.4	-56.0	-42.7	-27.2	-40.8
Interest cover by profit before tax & interest	3.4	0.5	0.8	1.7	2.1	2.8	3.3
Interest cover if no DSM	4.8	0.5	1.4	2.4	2.8	3.2	3.9
% Int. debt over equity	58.3	114.4	203.3	225.1	204.5	176.5	188.9
<b>Scenario D - Double price over 5 years</b>							
Real unit price increase (%)			14.9	14.9	14.9	14.9	14.9
Net profit after tax and interest (Rbn)	3.2	-0.8	-2.0	0.9	1.2	1.4	1.6
Net profit before tax to Turnover	14.3	-1.9	-3.8	1.4	1.3	1.3	1.1
Net profit before tax to Total Assets	6.3	-0.7	-1.1	0.4	0.4	0.4	0.4
Increased borrowings (Rbn)	-8.4	-30.9	-61.6	-62.1	-50.5	-36.5	-51.6
Interest cover by profit before tax & interest	3.4	0.5	0.5	1.1	1.4	1.8	2.5
Interest cover if no DSM	4.8	0.5	1.1	1.9	1.9	2.4	3.3
% Int. debt over equity	58.3	114.4	209.6	257.6	253.3	233.9	273.9



### **Notes:**

1. The Eskom CFO says that credit rating could fall if debt/equity rises above 200% or interest cover below 3.0.
  2. Government injection is treated as equity by financial institutions, and is interest-free over this period
  3. Borrowing costs are assumed to be 2% above inflation and have the following premiums depending on debt/equity ratios: 20% premium if D/E higher than 100%; 40% if D/E greater than 200%, but with an average rate which is never greater than the average rate of inflation.
  4. DSM costs are assumed to rise from R 2.5bn in 2008/9, to R 2.8bn in 2009/10, R3.2bn in 2010/1 and R 3.5bn from 2011/2.
  5. Inflation is 7% in 2008/9 and average of 8% in other years: this is much higher than the one used by Eskom. It has the impact of raising costs of borrowing relative to Eskom.
  6. Primary energy costs included in 2008/9, as estimated by Eskom; thereafter increases by inflation
  7. We assume that on average, each day 77% of projected usable generating capacity does produce energy, all of which is sold. (In 2008/9, this results in a 5% reduction in real sales, which is approx what Eskom has suggested to us.
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### **2.3. DSM**

In Eskom's application, it notes that it requires a 6% real price increase to cover the R 2.5 bn cost of DSM in 2008/9. It is noted that DSM is unlike investment costs, as it should ideally be recovered in the year expended.

Eskom currently budgets to pay approximately R 3000/kW for savings. We believe that this may be sufficient to cover the cost of the easier savings, but will not be sufficient to cover the next round of savings. New investments may well need more generous support, perhaps double that currently paid by Eskom.

We recommend that DSM should ideally be stripped from the calculation of Eskom's pricing. There are three main reasons for this:

- DSM is not core to Eskom's business and should rather be implemented by agencies set up for this purpose
- Eskom's approach barely grazes what is possible on industrial side over medium term. The HSRC is producing a study that reviews potential savings in different industries and that indicates how a change in price or the provision of incentives might encourage their adoption.
- The inclusion of DSM complicates the financial picture

It is recommended that DSM incentives be aligned to existing industrial cash and tax incentives available to firms and consumers. Examples of these programmes include the accelerated depreciation allowances on manufacturing equipment, mining, bio-waste and small-medium enterprises. These typically run over 3 to 4 years. They don't necessarily apply to the required investments. They could be made relevant for a given period on a more accelerated basis (eg 2 years) in order to offer a meaningful incentive to firms to adjust more quickly.

In addition, the dti's Small, Medium Enterprise Development Programme (SMEDP) subsidises the capital investment of new and expanding firms in a range of sectors. Only small changes to their specifications would be required to enable them to cover the kinds of investments aimed at saving energy in the production process.

The dti's Critical Infrastructure Programme (CIP) is a non-refundable, cash grant that is available to the approved beneficiary upon the completion of an infrastructure project that can be shown to underpin a group of further investments in a location. The scheme covers between 10% and 30% of the total development costs of the qualifying infrastructure.

A defined managed programme is not necessary to effectively implement these incentives. A programme simply needs clear guidelines and rules against which the firms accounts can be audited, or, in the case of cash incentives, against which applications can be approved.

The proposed revisions to building codes should have an impact on new buildings. For low cost building programmes, Government could build energy saving requirements into their procurement requirements, with some top-up in contract amounts for additional costs associated with energy saving additions.

We analysed the impact on Eskom's financial position if DSM were taken out from 2009/10, simply because we are concerned that the implementation of any alternative may take time. However, if Government were able to fast-track small extensions to existing programmes then it is recommended that DSM be removed in 2008/9. Eskom has verbally noted that, aside from the distribution of light bulbs, it has curtailed its DSM programme due to lack of funding.

### **3. Impact on the economy**

Eskom's proposal says that it would be preferable to implement the required price increases rapidly as consumers will adjust their behaviour in response to being charged the true economic costs. It may be that households can adjust fairly quickly, with limited impact on the economy. This is not the case for firms. There are some immediate savings that are possible, but the larger electricity savings generally require the installation of new equipment. This can require six to eighteen months to implement. If the price is increased faster than firms can adjust, it will result in falling output.

Therefore a slow introduction of a price increase is preferable to a faster one. Our modelling shows that:

1. We compared a one-year 27% price increase to a 72% price increase. The effects of this are not proportionate. A 72% price increase would lead to 2.5% rise in inflation, a fall in GDP by 0.3% (or about R 67 bn) and a reduction in low skill employment by 1.4% (about 55,000 jobs). If the electricity price increases by 27%, inflation rises by 0.9%, GDP falls by 0.1% and low skill jobs shrink by 0.3%.
2. Note that a 27% price increase could cause electricity consumption to fall by 5%, whereas the 72% price increase would be required to reduce consumption by 10%. This assumes that price is the only consideration, and that there are no incentives. This shows how difficult it can be to rapidly reduce consumption past the first phase of 'low hanging fruit'.

### **4. Approach to price increases given multiple objectives**

It must be remembered that there are currently four main concerns that need consideration when raising the price. These include:

1. The aim of covering the cost of opex and capex, in a way that maintains Eskom's credit rating
2. The aim of reducing energy consumption

3. The aim of reducing peak demand usage
4. The impact on the economy – inflation, production and employment

Ideally, any price increase will be introduced in a way that optimises the overlap between the solutions to these four problems, while also seeking to minimize damage to the economy.

1. Eskom says it needs a 100% increase in the electricity price to cover its costs. We find this to be more than adequate if spread over five years, with some adjustment for future primary energy costs if needed.
2. Eskom seeks to reduce consumption, although it has not specified by how much. As noted, a 72% price increase in one year, or a 54% price increase implemented over 2 years would reduce consumption by 10%. Eskom has not communicated or justified precisely what consumption savings are needed over what time frame. It should be noted that the consumption problem is directly linked to the availability of coal.
3. Eskom seeks to reduce peak usage by 10%, and has recently reported that there has already been a 7% savings. It is worth noting that a general price increase does not necessarily reduce peak usage, since savings might be made at other times of the day.
4. In industry, the major energy savings can not be implemented within very short periods of time. New equipment and machinery must be identified, then ordered either locally or overseas, then delivered, then installed. We estimate that substantial savings in both peak usage and consumption could be made in a wide range of sectors if the right incentives are put in place. However, the minimum period of adjustment is approximately 6 to 18 months. Therefore, large sudden price can result in falling consumption, as a result of a contraction in output rather than as a result of productivity improvements.

To achieve these three goals, tariffs need to be structured in a way that offers the right incentives and disincentives. For example, maximum demand prices would encourage reduced consumption, whereas time of use tariffs would reduce peak demand.

We have modelled the impact of price increases on consumption, assuming no positive investment incentives to encourage changed behaviour. We find that substantial energy savings could be possible over a two year period, and that many firms have not implemented them due to cost of investment. Two factors will impact on this decision making framework. First, a rise in price will raise the return on these new investments. Second, the application of investment incentives to the relevant category of investments could halve the amortisation period.

## **5. Appendix: Comments received on the HSRC modelling and revisions made to April draft**

### **5.1. Handling of government injection**

In the initial document, the modelling presented mainly reflected results when Government's R 60 bn injection was treated as a loan. However, it was confirmed that this injection would be seen as equity by financial institutions, and that it would be interest free over the period. We now use this as a standard way of measuring Government's injection in all the scenarios.

### **5.2. The price increases reviewed**

In the previous draft, Scenario B and C had price increases of 28% pa x 3 years, and 14.85% pa x 5 years. This draft shows a price increase of 26% pa x 3 years so that it compares directly with the 100% real compound price increase in Scenarios C and D.

In the previous draft, Scenario C had a price increase of 100% over 5 years. In this draft, Scenario C shows the impact of a price increase of 100% over 4 years, and Scenario D of 100% over 5 years.

### **5.3. Financial ratios and Eskom's credit rating**

The Eskom CFO has noted that it is targeting debt-equity ratios below 200% and interest cover of 3.0 or more, in an effort to maintain its credit rating. We spoke to a range of financial institutions to obtain their views. These views were widely divergent and inconclusive. This is also reflective of the S&P report on Eskom: this report compares Eskom to other similar institutions in SA and abroad. From that comparison it appears that the general health of the company is sought, and not specific ratios.

One leading bank economist noted:

“.....numbers from our bankers on other planned projects in SA:

For an accommodation PPP with a government underpin:

Gearing ratio of approx. 85%  
Minimum Senior Interest Cover Ratio of approx. 1.5x to 2x  
Average Profit before tax/revenue of about 30% - 40% over a 25 year project

For a toll road with recourse to SANRAL:

Gearing ratio of approx. 70% to 85%  
Minimum Senior Interest Cover Ratio of approx. 1.5x to 2.3x  
Average Profit before tax/revenue of about 44% over a 30 year project

## **5.4. Eskom's comments**

### **5.4.1 Energy consumption**

“Our revenue assumes a reduction of 10% in consumption of energy. This is based on the power conservation programme (PCP) that was initiated by Eskom and Government to reduce consumption. After taking into account the growth in 2008/9, the net reduction approximates 5%.”

In the HSRC report, we assume that on average, each day 77% of projected usable generating capacity does produce energy, all of which is sold. In 2008/9, this results in a 5% reduction in real sales, which is approximately what Eskom has suggested to us.

### **5.4.2 Inflation**

The Eskom figures account for a very low inflation rate in the region of 4 or 5%. We assume inflation rate of 7% in 2008/9 and 8% in subsequent years. Inflation will probably be higher in 2008/9 than the HSRC's estimate. The inflation path over the next 5 years is uncertain. However, the rate used by Eskom in their pricing proposal does seem very low.

### **5.4.3 Cost of borrowing**

“The finance charges in our model exceed those in the “Base” (HSRC) model by approximately R2bn. We assumed finance charges of approximately 9% over the five year planning window.”

We have revised our estimates for cost of finance so that it rises by 2% more than inflation. The average borrowing cost is negatively affected by Eskom's entry into financial markets now, as the cost of capital has risen. It should be noted that the HSRC estimates have higher finance charges than does the Eskom model, as we use higher inflation rates. Naturally, this also affects other estimates, most notably revenue.

It is also worth noting that Eskom is working to an annual R 30 bn borrowing limit, which is what it believes it can realistically be raised in the market. We have adjusted accordingly.

### **5.4.4 Depreciation**

“Over the period 2008/9 to 20012/13, the depreciation differential is approximately R47bn with Eskom reflecting the lower cost. This represents additional cash resources as depreciation is added back in the determination of cash flows. The higher depreciation is as a result assuming all capital expenditure is depreciated. The following table shows the amount qualifying for this calculation.”

We have revised our depreciation figures to be in line with Eskom's. We had originally calculated depreciation to cover capital investment as it happened, but the revision means depreciation is now calculated from the time that the capital investment once the plant is complete and operational.

### **5.4.5 Items included in revenue calculation**

“The Eskom revenue consists of sales from standard customers, revenue from exports and revenue generated from special pricing agreements (SPAs), also referred to as Commodity Linked Agreements. The revenue from exports and SPAs is contractually based and is not regulated by

National Electricity Regulator of South Africa (NERSA). Therefore applying the general price increases would be incorrect for these two categories of revenue.....

.....We recommend that for modelling purposes the above growth on standard energy sold is used and add the other revenue categories to get to the total revenue for Eskom. The 2008 standard revenue is R39,928 million.”

Eskom’s total revenue was R 43 bn in 2007/8 and the HSRC uses this as the revenue base for its 2008/9 calculations. It would only be appropriate to cut revenue for non-regulated sales if it were possible to also cut associated costs. However, at the moment, this is not possible.

#### **5.4.6 Derivatives**

Eskom’s calculations “takes into consideration an embedded derivative cost of R3.8bn.” We excluded this from our scenarios, since this income is inherently uncertain.

Eskom earned R12.3 bn from derivatives in 2006/7 and 2007/8, and project a loss of R3.8 bn in 2008/9. Thereafter, it expects little impact on its balance sheet.

However, earnings on derivatives are uncertain. There is a probable inverse relationship between Eskom’s earnings on derivatives and the electricity price increase, and also some relationship to the price of aluminium. Eskom’s projection might be seen as the highest potential once-off loss from derivatives associated with a very large price increase. A lower price increase may result in much smaller losses or even a neutral impact.

#### **5.4.7 Deferred tax**

“The application of deferred tax is not shown in tax computation of the “Base” (HSRC) scenario”. In Eskom’s calculation, this adds + R 3.3 billion to their balance sheet. We do not include this as it is a deferred tax credit and a non-cash item. However, if we had added it, it would have improved the financial ratios shown in the HSRC modelling.

#### **5.4.8 Operating Costs**

“Operating costs calculated in the Eskom scenario exceed those calculated in the “Base” (HSRC) scenario by R2.4bn. These costs are based on the sum of operating costs submitted by the various divisions within Eskom based on their plans.”

The HSRC calculations use a reconciliation of the disclosed operating cost figures available at the time. Our revisions as explained above and based on Eskom’s comments, bring our opex estimates closer to Eskom’s estimates.