Comment on Eskom's MYPD 2 Proposal

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Policy documents:
Eskom's "Revenue Application – Multi-year Price Determination 2010/11 – 2012/13 (MYPD 2)", dated 30 September 2009.

Eskom's "Revenue Application – Multi-year Price Determination 2010/11 – 2012/13 (MYPD 2)", dated 30 November 2009.

NERSA "Issues Paper - Eskom Revenue Application Multi-year Price Determination 2010/11 – 2012/13 (MYPD 2)", dated 30 October 2009

Altman, M et al, 2008. The Impact of Electricity Price Increases and Rationing on the South African Economy. Final Report to the National Electricity Response Team (NERT) Economic Impact Task Team, HSRC, July 2008.

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1. Background and Summary of Key Findings

Eskom has applied to NERSA in respect of the second round of a three year Multi-Year Price Determination (MYPD 2), over the period from 2010/11 to 2012/13. Its initial submission in September 2009, Eskom requested a 45% nominal increase in each of the three years. A revised application was submitted in November 2009, reducing this request to 35% per annum for three years, then rising by 13% pa for 2 years, based on revised assumptions.

The central cost drivers in the first application included:

- Increasing primary energy costs, especially in respect of coal
- A revaluation of assets, as per the Government Notice No 1398: Electricity Pricing Policy, Government Gazette No 31741 of 19 December 2008. It is well known that historically low prices and poor historic coverage of depreciation have resulted in limited reserves to cover cost of replacement and growth. Eskom's applications are calculated on the basis of a 'like-for-like' asset valuation on the basis of Modern Equivalent Assets (MEA) approach. The previous applications were based on inflation-indexed historic asset valuations.
- An increased requirement for electricity generation, currently expected to be produced by Eskom, thereby inducing a substantial capital expenditure programme
- An assumption that equity and loan finance would be limited, requiring high reliance on funding capex from tariffs

Eskom's revised application is based on an altered set of assumptions, putting forth a scenario based on the following being implemented:

- An assumption of reduced sales arising from DSM induced savings of 8.5 TWh over five years as well as the diffusion of solar water heating.
- The building of Kusile is delayed and certain expenditures that had been expected are removed in relation to initiating coal fired power station (coal 3), nuclear power, and IPP expenditures, amongst others.
- Cost reductions were found in operating expenditure, especially to reflect reduced sales as a result of DSM initiatives as well as efficiency improvements.
- The provision for road maintenance and repair is removed after 2010/11, with the understanding that the maintenance would be undertaken by the provincial government or the SA Roads Agency Ltd (SANRAL) with Eskom paying "shadow toll fees".
- An assumption is made of additional borrowing by R 8.5 bn, and of R 20 bn in equity, sourced from the private sector.

In 2008, the HSRC prepared a study which was funded by TIPS/Commark on the request of the Sector Strategies Co-ordinator in the Presidency. The study investigated the potential economic impact of differently distributed pricing or rationing options aimed at reducing peak electricity usage and electricity consumption. The study also considered the potential impact of different pricing proposals on Eskom itself[1]. A submission was made to NERSA in 2008 on this basis, and we recommend that report be read in conjunction with this one.

This submission to NERSA updates our work, and reflects on Eskom's 2009 submissions. More specifically, we reflect on:

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[1] 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.

- The financial implications of alternative pricing scenarios: with the support of WSP, we have revised the financial modelling prepared in 2008. The modelling has been updated to take account of revised economic forecasts as well as Eskom's initial and revised applications. The underlying spreadsheets used for this submission 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.

- The implications of Eskom's proposals for the economy – for firms, and for growth, inflation and employment more generally.

The central arguments made in this document include:

- In this submission, we present one alternative scenario to Eskom's revised application. However, we can share the financial model with NERSA to explore alternatives. In this scenario, we assume that the price rises by 32/31/30/13/13 over the period from 2010/11 to 2014/15. The HSRC scenario assumes that Eskom retains the 2c levy, and that it identifies an additional 3% improvement in operating expenditure in every year to 2014/15. In the HSRC scenario, Eskom must borrow an additional R 50bn over the five years. Under these conditions, Eskom is able to achieve an interest cover above 2 by 2012/13, a price of about 80c/kWh by 2014/15 (in 2009/10 Rand) and a net profit to total assets of 13% by 2012/13.

- We model the impact of introducing a sudden nominal 35% price increase. A 35% price increase would lead to CPI rising by 1.2%, a fall in GDP by 0.1% and a reduction in low and semi skill employment by up to 25,000 to 50,000 (or a fall in total employment by about 0.25% to 0.60%), all things being equal. The rise in prices affects poor households disproportionately, especially through indirect impacts. This means that a large portion of the inflation impact arises as a result of firms passing on the electricity price to consumers. This raises the importance of urgently introducing energy saving measures and investments.

- On this basis, we find that the HSRC pricing scenario could be a viable alternative to the one proposed by Eskom. It benefits the economy with a reduced price increase. However its drawbacks are that Eskom must raise its borrowing by R50bn over five years, and that the fiscus is reduced by the value of the levy (R26.2 bn or just over R 5bn pa).

A number of other points are critical to the thinking on the price determination, although they fall outside the regulatory domain and therefore the current decision by NERSA.

- Energy saving support measures (DSM) should ideally 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.

- 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, inducing inflation and dampening growth. It is essential that where possible, the electricity price not introduce an additional challenge.

- 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. Eskom raises many of these in its revised application. More coordination is needed in the decision making process: while we make recommendations in respect of the proposed levy, this is not within the ambit of the current decision making process by NERSA.

2. Financial implications for alternate pricing scenarios

Below we compare Eskom's revised November 2009 submission to NERSA with an alternative HSRC pricing scenario. This is meant to illustrate alternatives in respect of both revenue and expenditure sides. We have prepared a simple financial model for this purpose.

2.1. Eskom's financial objectives

The financial viability of Eskom needs to be assured in order to successfully undertake and finance the expansion in generation. 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.

Our modelling focused on identifying the potential impact of different scenarios on: profitability, interest cover, borrowing, the weighted cost of capital, debt/equity ratios, and the achievement of what is said to be a target electricity price to encourage investment. In 2008, Eskom's financial director expressed views on performance required to maintain its credit rating. We compare these to targets that are appropriate for a public listed company. His view was that Eskom's interest cover of 3.0 was required. [2] At that time, Eskom's CFO also confirmed that Eskom was targeting a debt/equity ratio that below 200% in most years. Eskom's revised submission (pg 90) says that it seeks a debt to equity ratio of 150% and an interest cover of 3.0, "or better".

Box – A note on Eskom's financial objectives

For the HSRC study prepared in 2008 (Altman et al 2008), we spoke to a range of financial institutions to obtain their views on financial ratios needed by Eskom. These views were widely divergent and inconclusive. This is also reflective of the S&P's 2008 report on Eskom comparing 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.

However, one leading bank economist noted:

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

[2] 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.

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

We presume that the ratings agencies and financial markets would apply less onerous objectives to Eskom as it is a state owned monopoly with virtually guaranteed demand. We expect that a pricing schedule that gives reasonable certainty of recovery and repayment would be required. In this case, we focused on the following financial targets:

- 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.
- That Eskom reach an interest cover of 2.0 as a minimum, and 3.0 within a reasonable period, certainly within the coming five years.
- We did not target the debt-equity ratio, although none of our scenarios exceeded Eskom's debt equity ratio target.

2.2. Comparing Eskom's Application to the HSRC's Pricing Scenario

We compare Eskom's revised submission to one alternative scenario. [3] However, we can model other alternatives and would look forward to assisting NERSA in its deliberations should that be deemed helpful.

Eskom's revised application for a price increase of 35/35/35/13/13 is intended to achieve a turn-around of the Eskom finances in a short period of time. This is a real compound price increase of 370.1%. Eskom will make an estimated R 26 billion profit (after taxes and interest) in 2011/12 rising to R 90 bn in 2014/15. Net profit before tax to total assets rises from 7% in 2011/12 to 13% in 2014/15. The debt/equity ratio falls below the targeted 150% in all years. Interest cover (calculated as operating profit divided by interest) rises above 2 in 2012/13, and exceeds 3 in the following year.

The HSRC scenario shows what would happen if the price increases by 32/31/30/13/13 between 2010/11 and 2014/15, amounting to a total real compound increase of 333.6%. In this scenario, we also assume the following:

- We have used the inflation indexed historic cost valuation, rather than the 'like-for-like' valuation on the basis of Modern Equivalent Assets (MEA). It is recognised that MEA is a more appropriate approach to asset valuation. However, the approach to asset valuation is still under review. In our submission, we wanted to determine Eskom's cash position under different conditions. There is little doubt that Eskom's accounting practices should better

[3] Our figures do not precisely match those in Eskom's revised submission, as we have reconstructed Eskom accounts. We have included some explanation of our approach. It is important to note that we use the inflation indexed historic asset valuation method in both the Eskom and HSRC pricing scenarios.

reflect replacement costs and future expansion. However, Eskom is already building in substantial costing for maintenance and investment over the coming years. Hence, it may be advisable to delay the introduction of the MEA approach.

- The macroeconomic assumptions are revised to reflect those put forward by the National Treasury and also provided by RMB. We had concerns with the internal consistency of Eskom's macroeconomic projections. A comparison of Eskom's and our macroeconomic assumptions are presented in table 2. A critical difference lies in the economic growth projections. Eskom's projections seemed high in the first years, and low in the medium term. This has a substantial impact on both electricity consumption, and on cost recovery, necessitating a higher price in the HSRC scenarios than would otherwise be needed in the earlier years. We also envision a higher inflation rate in 2011/12, and a more depreciated Rand exchange rate.

- As suggested in our 2008 submission, we recommend that Eskom retain the R 0.02/kW levy for 5 years (from 2010/11 to 2014/15). Eskom estimates that the levy will raise about R 26.2 bn over this period or just over R 5bn pa. This would benefit Eskom, but the fiscus would be diminished by this amount. There are trade-offs should there have been some intention of applying these funds to energy saving measures.

- We do not apply the cap set on borrowing by Eskom, nor do we limit borrowing to Government's current level of guarantees. The level of borrowing in our model is set as a residual. This is calculated as a sum of the cash generated from sales plus shareholder injection, less capital expenditure, interest payments, provisions and other operating expenses in any year. In informal discussions with Treasury and financial experts, it is our understanding that Eskom could potentially borrow an additional average of R 10 billion per annum, if government guarantees were raised by R 27 bn, from R 176 bn to R238 bn, *over the five year* period to 2014/15. We therefore identified a price that led to this level of borrowing. If it was believed that more could be raised through borrowing, the price could rise more slowly, with the converse also being true.

- We assume that Eskom could identify a minimum improvement in its total operating expenses by 3% per annum, starting from 2010/11, through to 2014/15. The impact of this improvement is shown in table 6.

- As in Eskom's revised application, we assume that R 10 billion equity is raised in 2010/11 and in 2011/12.

- 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.

- In our scenario, we have included provisions for deferred tax. As we recommend a lower price, this provision is adjusted accordingly.

Other aspects of Eskom expenses could be scrutinised. For example:

- Eskom disaggregates revenue forecasts for tariff customers and for 'special pricing agreements' or 'commodity linked agreements' (SPAs) and exports. The revenue from exports and SPAs is contractually based and is not regulated by NERSA. As we understand it, the returns calculated for the purpose of the tariff application reflect only tariff customers. However, Eskom does not specify whether or how it reduced expenditure associated with supplying SPAs and exports. This is a falling, but nevertheless substantial share of its revenue. SPAs and exports together account for about 10% of sales. However, they account for 5.6% (R5.7 bn) of revenue in 2010/11 and 3.2% (R 7.7 bn) in 2014/15. With improved information we could revise our modelling. ***The lack of specification is a very important information gap and could potentially have an important impact on the outcome.***

- Eskom revises its budgeting for road maintenance, so that instead of paying about R 10 bn directly, it proposes that provincial government or SANRAL build the road and Eskom partially pay in toll fees. This reduces its expenditure on road maintenance to R 6.2 bn between 2010/11 to 2014/15. If the state absorbed this cost, we found that it would not make a substantial difference to the financial outcome or pricing.
- Eskom's DSM budget is approximately half that initially envisaged in its proposals in 2008 (that is, approximately R 3.2 bn between 2009/10 to 2011/12, instead of about R 7.5 bn). Between 2010/11 and 2014/15, Eskom proposes a DSM expenditure of R13.4 billion. If DSM were stripped out of the Eskom budget, the impact would mainly be felt in the later years, as the DSM budget is primarily loaded into 2012/13 to 2014/15.

The HSRC scenario would enable Eskom to achieve profitability in every year, rising from R 2.6 bn in 2010/11 to R 69.4 bn in 2014/15. Interest cover is low until 2011/12 but then recovers. In the Eskom revised submission, interest cover exceeds 2.0 in 2011/12, whereas it reaches the same target in the HSRC scenario a year later. R 50 billion more is borrowed than stated in Eskom's revised application, but the debt-equity ratio still falls below 150% in every year, and below 100% by 2014/15.

There is a view that the electricity price should reach 80c per kWh over this period. Table 3 compares the Eskom revised application and the HSRC scenario in respect of electricity price achieved. In real terms, using 2009/10 Rand, the 80c mark is reached in the Eskom application by 2013/14 and a year later in the HSRC scenario.

From this we find that the HSRC's pricing scenario is a plausible one. It has the benefit of a lower price increase and higher efficiency, but the draw back of higher borrowing and less funding to the fiscus.

Table 1 – MYPD 2 pricing proposals compared

Year ending …..	Mar-09	Mar-10	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15
Eskom MYPD 2 revised application							
Application - nominal price increase (%)	29.4	31.3	35.0	35.0	35.0	13.0	13.0
Real compounded price increase (%) - Eskom	119.4	148.2	191.7	250.0	323.3	345.9	370.1
Net profit after tax and interest (Rbn)	-3.8	4.3	4.2	26.1	58.5	65.5	80.8
Net profit before tax to Turnover %	-6.7	8.5	4.5	21.9	35.7	32.1	34.4
Net profit before tax to Total Assets	-2.6	3.1	1.5	7.3	13.3	12.0	12.8
Borrowings (R bn) Eskom	70.9	102.1	154.0	213.9	244.5	249.5	255.3
Interest covered by cash flow	-2.3	2.3	1.3	2.2	3.2	3.3	4.0
Weighted Average Cost of Capital	5.6	-2.4	3.8	2.4	8.2	14.3	14.3
Debt /Equity ratio	105.3	100.6	113.4	124.4	106.1	84.3	67.8
HSRC scenario							
Application - nominal price increase (%)	29.4	31.3	32.0	31.0	30.0	13.0	13.0
Real compounded price increase (%)	119.4	148.2	187.1	233.9	290.0	310.4	333.6
Net profit after tax and interest (Rbn)	-1.8	-2.9	2.6	17.0	42.2	53.6	69.4
Net profit before tax to Turnover	-3.0	-4.8	3.1	14.8	26.9	29.2	32.5
Net profit before tax to Total Assets	-1.1	-1.4	0.9	4.4	8.8	9.8	10.9
Borrowings (R bn)	70.9	109.3	162.8	231.8	278.8	296.0	313.5
Interest covered by cash flow	-1.8	1.2	1.1	1.5	2.3	2.6	3.3
Weighted Average Cost of Capital	5.6	-0.9	-0.5	2.3	5.9	10.5	11.5
Interest bearing debt over equity	102.3	113.5	126.3	148.6	140.7	117.6	97.6

Notes:

1. Government injection is treated as equity by financial institutions, and is interest-free over this period. Eskom assumes new private shareholder injection of R 10 billion per annum in 2010/11 and 2011/12. The HSRC scenario also includes this new injection.

2. 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.

3. DSM costs are as stated in Eskom's revised application

4. The macro-economic assumptions in HSRC's scenario differ from Eskom's and are presented in table 2 below.

5. Eskom's revised application calculates depreciation on the basis of MEA. In our calculations, we have compared different outcomes using the an asset valuation based on historic costs for both the Eskom and HSRC Scenario.

6. We have calculated these figures on the basis of volumes excluding exports and SPAs. However, Eskom does not make explicit the cost of producing for exports and SPAs and this requires investigation.

Table 2 - Macro-economic assumptions

Year ending		Mar - 10	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15
Eskom application							
USA inflation rate average for the year	%	6.0	5.0	4.0	4.0	4.0	4.0
RSA Inflation rate average for year	%	7.2	5.6	4.6	5.7	6	6
Average prime rate for year		11	11	12	13	13.5	14.5
Average borrowing cost		7.31	9.37	9.58	10	10.16	10.16
Average Forex rate Rand/Dollar	R/$	8.3	8.5	9.5	10	10	10
GDP growth rates	%	-1.5	2.3	4.0	3.5	3.5	3.5
HSRC scenario							
USA inflation rate average for the year	%	-0.4	1.7	1.8	2.2	2.3	2.2
RSA Inflation rate average for year	%	7.2	5.7	6	6	6	5.5
Long term interest rate	%	11.2	9.7	10	10	10	9.5
Average Forex rate Rand/Dollar	R/$	8.5	9	9.96	10.65	11.12	11.59
GDP growth rates	%	-2.2	1.5	3.2	4.5	4.5	4.5

Sources: the HSRC scenario macroeconomic assumptions are sourced as follows: GDP figures are from National Treasury/IMF. The other figures are sourced from Rand Merchant Bank.

Table 3 - Unit electricity price (R/kWh), excl levy

	Mar - 10	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15
Nominal						
Eskom	0.34	0.45	0.61	0.82	0.93	1.05
HSRC scenario	0.34	0.44	0.59	0.77	0.87	0.98
Real - 2009/10						
Eskom	0.34	0.44	0.57	0.74	0.79	0.84
HSRC scenario	0.34	0.44	0.55	0.69	0.73	0.79

Table 4 - Levy Retention (R bn)

Mar-11	Mar-12	Mar-13	Mar-14	Mar-15	Total
R 5.1	R 5.2	R 5.3	R 5.3	R 5.4	R 26.2 bn

Source: Eskom revised application, November 2009

Table 5 – Additional Borrowing Needed (Rbn)

	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15	Comments
Eskom revised application	**51.9**	**59.8**	**30.7**	**5.0**	**5.8**	Lower in 2014 and 2015 with delay in Kusile, plus new shareholder injection of R 20bn assumed in 2011 and 2012
HSRC Scenario	53.3	68.8	46.9	17.1	17.2	Borrowing is residual
Additional borrowing in HSRC scenario	1.4	9.0	16.2	12.1	11.5	Additional R 50 bn borrowing over five years. Government guarantee would need to be increased by R 27 bn

Table 6 - Operating expenses compared

	Mar.10	Mar.11	Mar.12	Mar.13	Mar.14	Mar.15
Eskom revised application						
Revenue, excl SPA, exports, levy	73.6	92.5	128.3	177.0	204.2	234.9
Operating expenses before interest	65.8	85.6	96.7	109.2	126.0	142.3
Depreciation - historic cost	6.2	7.9	9.2	11.3	14.3	17.9
Net interest expense	1.5	2.7	3.6	4.6	12.6	11.9
Normal tariff sales volumes, excl SPA and exports		204.6	210.2	214.7	219.2	223.2
HSRC scenario						
Revenue - excl SPAs + exports	62.0	82.8	114.5	157.1	183.7	214.5
Operating expenses before interest	61.8	75.8	91.4	107.2	120.6	135.0
Depreciation - historic cost	6.2	7.9	9.2	11.3	14.3	17.9
Net interest expense	1.9	4.2	6.0	7.7	9.3	9.8
Normal tariff sales volumes, excl SPA and exports		198.8	204.5	211.8	217.5	223.3

3. Impact on the economy

Eskom has made it clear that its preference would be to implement a rapid increase in the electricity price, to generate certainty and enable it to cover costs and investments. An increase in the price can also be expected to impact on behaviour, inducing households and firms to introduce energy saving measures. 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. These issues are outlined in the Altman et al (2008)[4].

Therefore a slow introduction of a price increase is preferable to a faster one. Our modelling in 2008 showed 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'.

We also reviewed the potential economic impact of a once-off price rise of 35%. The effects included:

- CPI would rise by 1.2% more than it would otherwise. Half the inflationary impact stems from the direct impact on electricity costs for consumers, and half from the indirect knock-on effects on the cost of other goods in the CPI.
- Low income households are disproportionately affected. The CPI for poor households rises by 1.6%, as opposed to 1.1% for rich households.
- Even if poor households received free electricity, their costs would rise by 0.7% as a result of the indirect effects of the 35% electricity price increase.
- The PPI would rise by 1.3 % more than it would otherwise, and this would raise the cost of a representative basket of SA exports by 0.9%.
- As noted above, the impact on GDP would be very small, approximately -0.1%.
- The impact on employment depends on how companies respond. If we assumed that high skill employment is reduced, then the impact on total employment is noticeable. However, in the context of a skills shortage, we do not believe that this would be a likely result. We therefore estimate that total employment might fall by between 0.24% and 0.60%. This amount to about 25,000 to 50,000 jobs, mostly expected to be lost by lower skill workers.

[4] Altman et al, The Impact of Electricity Price Increases and Rationing on the South African Economy. Final Report to the National Electricity Response Team (NERT) Economic Impact Task Team, HSRC, July 2008.

When thinking about the impacts, it should be remembered that electricity accounts for approximately 1.1% of all costs in services and manufacturing. Electricity accounts for 1% or less of total costs in 55 out of 94 sectors and less than 2% in 72 sectors. The sectors that are particularly affected (accounting for more than 4% of costs) are shown in table 7. On average, electricity accounts for 1.7% of household expenditure.

Table 7 - Sectors that are significant electricity users

Sector	% of total costs
Non-ferrous metals	11.1
General hardware	6.8
Knitting mills	6.1
Other textiles	5.5
Tyres	5.3
Water	4.9
Electricity	4.9
Gold	4.8
Soap	4.1
Pharmaceuticals	4.0
Accommodation	4.0

Source: Altman et al, 2008.

4. A note on DSM

In Eskom's revised application, R 13.4 bn is allocated to the cost of DSM over five years. Energy efficiency in existing and new operations will be an essential ingredient in addressing the challenge of electricity supply and pricing. For example, more than half of the inflation impact is caused by slow adjustment to the electricity price increase. A faster adjustment will have a very important impact on reducing the indirect price impacts. These arise when goods and services industries simply pass on the electricity price increase to consumers. Even if DSM and PCP are essential, it is a question as to whether this is an appropriate expense for Eskom.

We recommend that DSM should ideally be stripped from the calculation of Eskom's pricing. There are two 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 the medium term. These are more appropriately linked to dti or DoE investment incentives and other incentives that could be made available to consumers.

It is recommended that DSM incentives be aligned to existing industrial cash and tax incentives available to firms and consumers. The dti has introduced the Developmental Electricity Pricing Programme (DEPP) to attract new investments that would benefit from a discounted electricity price. However, there are existing programmes that could be altered slightly to have an important impact on the energy efficiency. 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 separate 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.