

# Sustainable Energy Briefing 18: Eskom Costs & Tariffs

This SE Briefing seeks to bring some degree of clarity to the confusing issue of Eskom costs and tariffs, and, in particular, tariffs to industrial users. What seems apparent from this analysis is that industrial users of electricity are paying below Eskom's average cost of production and at rates inadequate to CAPEX requirements, the policy of cheap electricity to industrial is contributing to Eskom's poor financial position, and some industrial users appear to be paying below the actual cost of production.

All of this has caused Eskom to cancel a raft of projects--including wind and solar projects--and concentrate on Medupi and Kusile. The irony is that the underlying cost drivers (the costs of fossil fuels) are set to continue climbing, making Eskom power increasingly costly to generate.

A quick note on the data used in this analysis: The primary sources were Eskom's Annual Report 2008 and official Department of Public Enterprises figures from 2008. These are the most reliable, up to date figures available. While tariff prices have risen (i.e. post-NERSA decision in 2009), data production has not caught up with this. Even though energy statistics are often confusing and delayed, nothing is lost by using official 2008 data. Eskom's Annual Report for 2009 is used to confirm the 2008 data and analysis.

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## I. Eskom's Costs & Revenue

In May of 2009, Eskom applied to NERSA for increased tariffs based upon increased OPEX (operating expenditure) costs, mostly regarding increasing primary energy costs. This application excluded a variety of different cost factors, such as OCGT (open-cycle gas-turbine), CAPEX (capital expenditure) and road maintenance. In its application to NERSA, Eskom indicated that its costs had risen, and had thus exceeded revenue. The basis for the application was that the cost of production (c/kWh) had exceeded the average standard tariff (c/kWh).

Given such drastic operating cost increases (see next page), it would be wise to interrogate the base drivers for these costs. These base drivers are explained in the next section. As primary energy costs rise, so do the costs of fossil fuel generation and transport. These cost rises point to deep financial concerns and short-term thinking within Eskom. An example of this is in the capital projects that have been delayed due to financial constraints.

While Eskom has correctly pointed out difficulties in obtaining international finance, it has often neglected to look at the financial implications of its own cost overruns. The Medupi coal-fired power station has escalated in costs from R78bn to R120bn, forcing Eskom to delay indefinitely the R19bn Tubetse pumped storage project (1500MW peak capacity), a R3bn Northern Cape wind farm (100MW capacity), the R24bn

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CIC Mmamabula (Botswana) coal-fired power station, and the R1.8bn Majuba rail venture. This last project is a 68km railroad from the Ermelo coalfields to the stranded Majuba power station. The implementation of this would save considerable funds in road transport and maintenance.

*Table 1: Eskom's Cost Increases (according to Eskom's Application to NERSA, April 2009)*

<b>Eskom's Costs Increases</b>			
Opex	2008/9	2009/10	Percentage Increase
Primary Energy	R22,808 million	R29,280 million	28.38%
Existing Business Opex	R27,154 million	R34,214 million	26.00%
New Business Opex	R2,977 million	R6,471 million	117.37%
Other Eskom Cost	R2,644 million	R3,839 million	45.20%
Total Opex	R55,583 million	R74,804 million	34.58%
Cost of Liquid Fuels			
GWh Sent	238GWh	281GWh	18.07%
Cost of Fuel	R516 million	R740 million	43.41%
Road Maintenance	R525 million	R1,098 million	109.14%

Perhaps Eskom is not concerned as it sought to pass on road maintenance costs to municipalities in its latest tariff application to NERSA. If municipalities are forced to pay for Eskom's uneconomic use of road transport for coal, there will almost inevitably be cutbacks in service delivery and increased rate hikes.

Eskom's R5bn solar thermal plant outside of Upington looks as if it has been thrown into a glacial deep-freeze, while spending on the PBMR continues (currently R14bn with nothing to show, another R31bn in pipeline). Incidentally and based on Eskom's own cost and assuming no economies of scale, learning rates or technological improvements, 48 wind farms would produce as much capacity as Medupi for R24bn more (assuming costs for Medupi stay at R120bn) in capital costs but with no primary energy costs to pay thereafter, albeit with a lower availability than coal.

In terms of the revenue side of the equation, there has been debate concerning which classes of electricity consumers pay for what. This is a rather murky terrain, made especially so by Eskom and the Department of Public Enterprises's refusal to release the details of long-term supply contracts to contestable customers. As argued before in previous Sustainable Energy Briefings, these contracts need to be opened up for public debate and scrutiny.

In addition, there are slight discrepancies in figures (probably due to methods of classification) that are evident in the following two tables. The first table comes from a DPE written response to a parliamentary question asked by Lance Greyling (ID) in July 2008, and it shows revenue vs. cost as per user type in terms of 2007/8 data.<sup>1</sup> The second table is based on data provided in Eskom's Annual Report 2008 and contrasts revenue and consumption with average cost of production.

<sup>1</sup> Another version of this data can be found at [www.eskom.co.za/annreport08/008](http://www.eskom.co.za/annreport08/008)

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Table 2: DPE Data on Costs vs. Revenue of Electricity Users, 2007/8

Tariff	Supply Size	Consumption (GWh)	Cost c/kWh	Effective tariff, c/kWh	% Difference	# of points of delivery or customers	Average consumption per customer per month (kWh)
Large Customers							
Megaflex	>1MVA	146,189	16.33	17.33	6.12%	693	17,572,873
Nightsave Urban	>=25kVA	19,714	16.92	18.95	12.00%	2,122	774,298
Smaller Customers							
Miniflex	>=25kVA and <=5MVA	2,422	19.10	19.42	1.68%	626	322,636
Nightsave Rural	>=25kVA	4,382	35.21	28.14	-20.08%	4,004	91,206
Ruralflex	>=25kVA	2,416	41.47	25.60	-38.27%	4,569	44,061
Landrate	>=25kVA and <=100kVA	4,501	56.13	42.96	-23.64%	152,496	2,460
Businessrate	>=25kVA and <100kVA	882	27.14	33.22	22.40%	25,477	2,886
Homepower	>25kVA and <=100kVA	2,323	36.98	38.19	3.27%	171,285	1,130
Homelights	20amp or 60A single phase	4,822	58.10	45.10	-22.38%	3,152,423	127

At the very least, Table 2 shows that Eskom is selling electricity too cheaply. Apart from the Businessrate tariff (22% profit), Eskom can hardly be said to be receiving a reasonable rate of return. In fact, Eskom would get a higher return from commercial interest rates than from selling to its Megaflex customers (6% return); considering this is where the vast majority of sales are, Eskom should be selling its only product at a reasonable rate, not practically at cost. The returns on Megaflex cannot be justified as adequate given that **A) these large-scale users are supposed to cross-subsidise poor domestic users according to Government policy and B) the bulk of new build (R1.3 trillion in total) will be used to meet the needs of these users, yet the returns gained from sale to them are too low to fund new build in any meaningful manner.** At a 6% return, neither effective cross-subsidisation nor financing of new build is possible.

The presentation of data in this manner has allowed Eskom to state, "Therefore the opposite of the common misconception is true--industrial consumers subsidise the bulk of Eskom's residential supplies."<sup>2</sup>

<sup>2</sup> [www.eskom.co.za/annreport08/008](http://www.eskom.co.za/annreport08/008)

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*Table 3: Eskom Average Costs vs. Revenue. (Derived from pg. 220 of Eskom's 2008 Annual Report)*

Category	Number of Customers	Percentage of Total Customers	Consumption in 2008 (GWh)	Consumption in 2008 (kWh)	Percentage of Total Consumption	Eskom Revenue 2008	Percentage Revenue from electricity sales	Eskom Revenue 2008 R per kWh	Eskom Average Total Cost per Unit Sold (R/kWh)**	Differential between Revenue and Total Cost	Profit/Loss (Revenue/Cost per Unit), Rands
Redistributors	766.00	0.01845%	89,941.0000	89,941,000,000.0000	40.09%	16,382,000,000.0000	37.26%	0.1821	0.1890	-0.0069	-616,849,000.00
Residential	4,016,689.00	96.73380%	10,423.0000	10,423,000,000.0000	4.65%	4,645,000,000.0000	10.56%	0.4456	0.1890	0.2566	2,675,053,000.00
Commercial	46,496.00	1.11976%	8,373.0000	8,373,000,000.0000	3.73%	2,081,000,000.0000	4.73%	0.2485	0.1890	0.0595	498,503,000.00
Industrial	2,966.00	0.07143%	61,510.0000	61,510,000,000.0000	27.42%	10,629,000,000.0000	24.17%	0.1728	0.1890	-0.0162	-996,390,000.00
Mining	1,153.00	0.02777%	32,373.0000	32,373,000,000.0000	14.43%	5,825,000,000.0000	13.25%	0.1799	0.1890	-0.0091	-293,497,000.00
Agriculture	83,722.00	2.01627%	4,848.0000	4,848,000,000.0000	2.16%	1,741,000,000.0000	3.96%	0.3591	0.1890	0.1701	824,728,000.00
Traction	510.00	0.01228%	2,990.0000	2,990,000,000.0000	1.33%	697,000,000.0000	1.59%	0.2331	0.1890	0.0441	131,890,000.00
International Utilities	7.00	0.00017%	4,553.0000	4,553,000,000.0000	2.03%	860,000,000.0000	1.96%	0.1889	0.1890	-0.0001	-517,000.00
International End Users	3.00	0.00007%	9,355.0000	9,355,000,000.0000	4.17%	1,111,000,000.0000	2.53%	0.1188	0.1890	-0.0702	-657,095,000.00
	<b>4,152,312.00</b>			<b>224,366,000,000.0000</b>		<b>43,971,000,000.0000</b>					
Note											

\*\* It is recognised that Eskom's costs will differ between categories of users. However, this information is not in Eskom's 2008 Annual Report, only the figure of R0.189/kWh is stated (pg. 4 of Eskom's Annual Report 2008). If we take the 2008 operating costs (Rm60 209) outlined on page 11 of Eskom's 2009 Application for an Interim Price increase and use that as a basis for calculation, we arrive at a operating cost of R0.268/kWh. If this is used, losses from all categories except residential and agriculture worsen.

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What is also clear from Table 2, that domestic users hardly consume any electricity at all; for example, compare the usage per domestic customer (127kWh per month) to that of Megaflex customer (17,572,873kWh per month). Domestic users (who are supplied directly by Eskom) use a mere 4kWh per household a day. While it may seem simple and obvious, this hard fact is often overlooked in energy debates, which sometimes get framed in terms of "we need to build in order to supply ordinary South Africans".

Put another way, the 4,822GWh consumed by all Homelight users in a year is 43% of Koeberg's annual output of electricity (11,317GWh). Megaflex users, on the other hand consume 66% (146,189GWh) of all electricity generated from Eskom's 13 coal-fired power stations (222,908GWh).

To paraphrase Eskom, quite the opposite is true--the energy system and its expansion are for the use of industrial customers, not for ordinary people. Further, the revenue from industrial users does not meet capital expansion requirements.

There is, however, another way of examining the same data, primarily using the average cost of production as the benchmark, instead of cost per user type. This is a perfectly acceptable manner of determining revenue requirements and thus tariffs; essentially, this is the approach used by NERSA, as it has granted an average tariff increase (31.3%, one size fits all<sup>3</sup>) in order to increase standard tariff revenue from distribution standard tariff sales. The Special Pricing Agreements (SPAs) are excluded from the recent NERSA increases, roughly 24,000GWh of sales worth R2.673bn<sup>4</sup> or an average of 11.14c/kWh. These SPAs include international sales.

When the revenue per customer type is contrasted with the average cost of production (as in Table 3), a different story emerges than the one presented in Table 2. When compared to the average cost of production, the essential bottom line, Eskom is making a loss with sales to redistributors, industrial & mining customers, and all international sales (a combined 88% of total consumption). Commercial, residential<sup>5</sup>, and agricultural users provide a profit on this interpretation.

The question may be that, given Eskom has only one product and a complete monopoly, why does it sell below its average cost of production? If Eskom were to use its average cost of production as a minimum for all sales, residential users could rightly expect a decrease in electricity bills. Or, alternatively and based on 2007/2008 cost of production data, Eskom would have had an additional R2.564bn to spend on capital expansion costs per annum.

Table 3 also display a worrying piece of data. In regards to sales to International End Users (a total of 3 customers), Eskom is receiving a revenue of a mere 11.88c/kWh, which is not only well below the average cost of production but below the actual cost of production for any user type (as stated in Table 2). These three customers, who collectively consume almost as much as four million residential users, are paying below the cost of supply (based on available data), making a mockery of the idea that the richest users are to subsidise the poorest. This is most likely an industrial subsidy of some note.

Eskom stated in its April 2009 application to NERSA that: *Eskom has traditionally been a self-funding utility, accessing finance from revenues and the capital markets throughout the previous build programme. However, in the current environment Eskom has a major challenge to adequately cover escalating capital expenditure and operating costs (including primary energy), since current tariff levels do not generate*

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<sup>3</sup> Noting that NERSA did limit increases to Homelight users to 15%.

<sup>4</sup> NERSA, "Final media statement- NERSA decision on Eskom's application for an interim price increase", 25th of June 2009

<sup>5</sup> Note: Eskom includes public lighting and prepaid meters under residential.

sufficient revenue from regular operations to cover these costs.

Based on either Table 2 or 3, Eskom and NERSA will have to address the question of industrial, mining and international tariffs. In order for Eskom to meet its operating and capital costs, these tariffs will have to rise. These tariffs will have to, at the very least, rise to the average cost of production. Domestic consumers simply consume too little for further increases in this area to be effective.

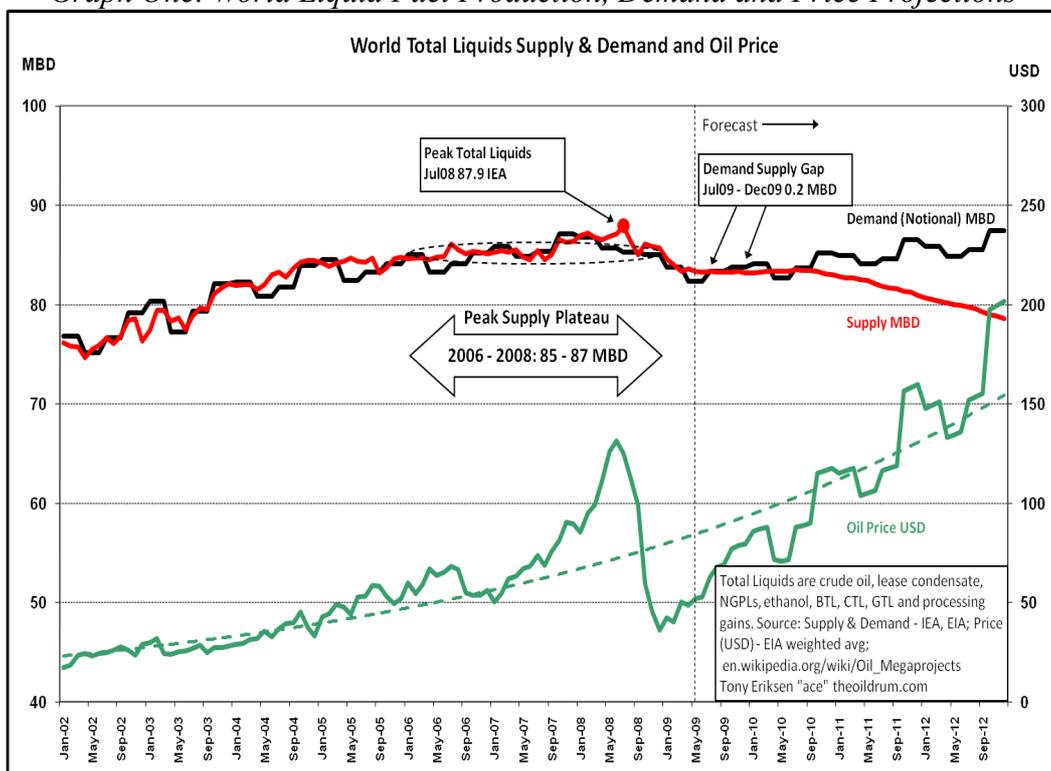
## II. Primary Energy Costs

*"The increasing coal price may be good news for coal producers, but will have a serious effect on industry and the cost of power generation, therefore, negatively affecting the consumer in the long run."--Mining Weekly, "Coal still a hot topic for South Africa", 16th March 2007*

There is highly convincing data to suggest that world oil production peaked in July 2008 (see graph below). In December 2008, the conservative International Energy Agency made a startling about face and declared a peak in global oil production in 2020. So, either we have already peaked in terms of oil production or will very shortly.

As there are no indications that demand for oil is set to decline (much the opposite, in fact), the twin factors of rising demand and falling supply will result in increased prices. Prices above US\$100 a barrel are just around the corner. This will not only drastically increase Eskom's primary energy costs in terms of diesel fuel but will increase the price of other primary energy costs (coal, natural gas, uranium), if for no other reasons than for increases in production and transport costs. The latter reason is particularly relevant as Eskom's power stations are located away from projected new coalfields.

*Graph One: World Liquid Fuel Production, Demand and Price Projections*

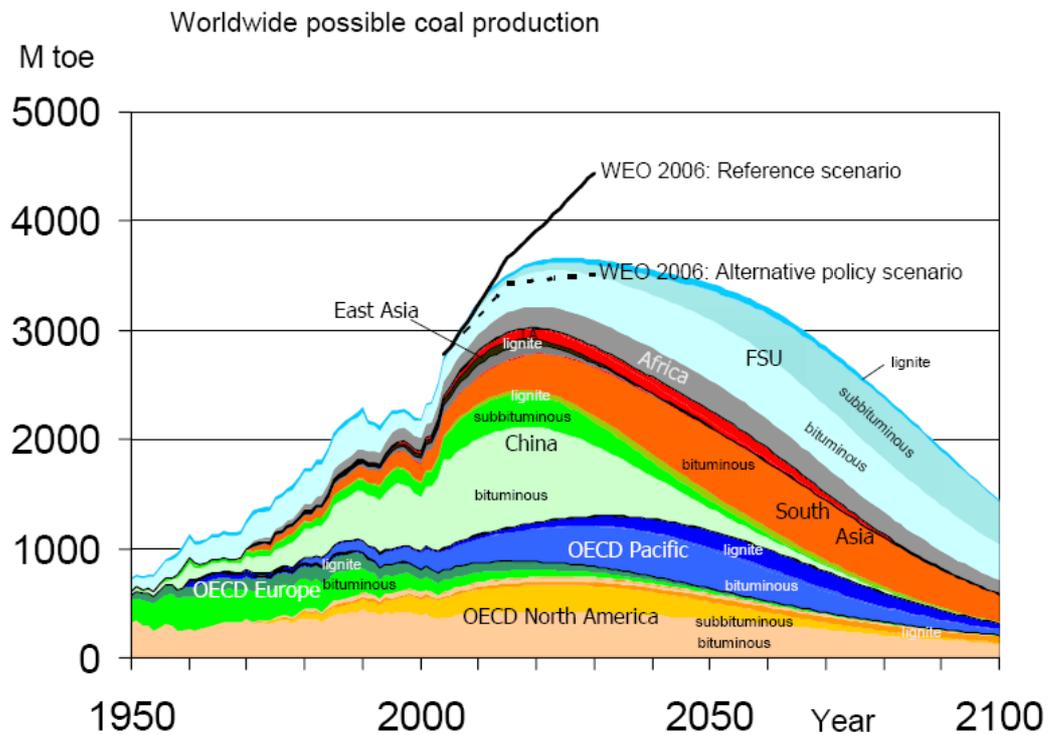


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In a recent report, the Energy Watch Group, reporting to the German Parliament, predicted that global coal production would peak in 2025 (see graph below). If so, this would have drastic impacts upon global coal prices and, hence, domestic prices. Eskom's 2009 application to NERSA for tariff increases cites rising coal prices as one of the primary reasons as to its increased costs. Further, Eskom's planned new coal-fired power stations would add an additional 50Mt of annual consumption to South Africa's current consumption patterns. This will have an upward impact on prices.

*Graph Two: Future Coal Production*

Also, Eskom's current power stations are becoming stranded from the coalfields as existing mines close. The search for new coalfields will be costly, involve significant water costs (in a dry country), and will be in areas of environmental and tourism importance. As economic logic dictates that the most profitable (i.e. the cheapest and easiest) coal reserves will be mined first (and have already been mined), new coal



(Source: Energy Watch Group)

mines to service Eskom's existing and planned power stations will be more costly than present mines. Eskom has already indicated that it will require 40 new coal mines at an expected capital cost of R40bn<sup>6</sup>.

All of the above, strongly indicates that primary energy costs are set to escalate in the short and long-term, regardless of Eskom's current contract woes. This is already apparent with Eskom claiming that its flagship project, 4800MW Medupi project, will produce electricity at 48c/kWh, which is three times higher than current plants.<sup>7</sup> If Eskom continues with its current generating plans, it will be going back to NERSA year after year for tariff increases. This is particularly scandalous as there are alternatives to the current generating model (renewable energy) that are set to become cheaper than fossil fuel generation in the next 10 to 15 years; see Sustainable Energy Briefing 17.<sup>8</sup>

Eskom's planned power stations have a lifespan of 40 to 60 years, making them soon to be uneconomic even without carbon taxation, which is a distinct part of the government's climate change plans.

<sup>6</sup> <http://www.dispatch.co.za/article.aspx?id=336558>

<sup>7</sup> Justin Brown, "Eskom delays three projects", Business Report, 8th of June 2009

<sup>8</sup> SE Briefing 17 is available at: <http://www.earthlife.org.za/wordpress/wp-content/uploads/2008/12/sustainable-energy-briefing-17-final.pdf>

### III. Cheapest Electricity in the World. Why?

The question must be asked, why are Eskom and the Government committed to the cheapest electricity in the world if Eskom currently has a funding shortfall of R160bn for Medupi, Kusile and Ingula? Eskom is cold broke, but wishes to continue charging bargain basement prices to its large-scale users. This is something of a paradox.

As Graph Three shows, there is a significant difference between South African electricity prices and our closest global competitor. This Eskom graph (Annual Report 2008) comes from a study (National Utility Services Inc.) that compares average supply of 1MW (size of a small shopping centre). Thus, the NUS study is suggesting that Eskom tariffs are the cheapest for industrial consumers.

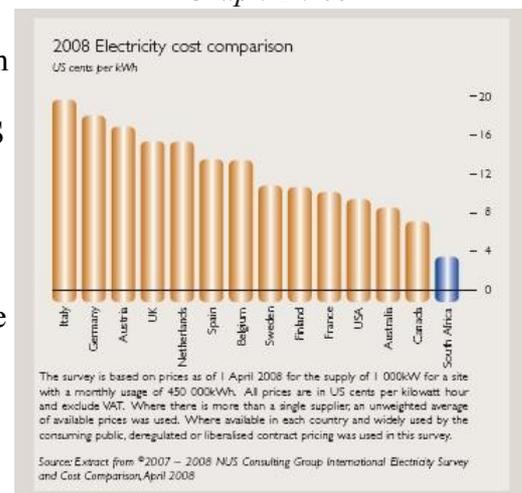
Ex-Economist of the Year, Mike Schussler has correctly pointed out that, we do not have the cheapest household tariff rates. Once again, this suggests that the solution to the cost/revenue equation is with large-scale users and not with domestic users, and, in particular, poor users. Schussler states:

*Moreover, the average international price difference between industrial customers and households was 51% in 2004. This means household pay 51% more than industrial customers. In South Africa, households pay at least 168% more than industrial customers. In the case of some municipalities, the cost to households is more than 190% higher than the charge to industrial customers.<sup>9</sup>*

The only reason sticking to the policy of cheapest industrial electricity could possibly make any sort of sense is to attract heavy industry to invest. Even if issues of capital outflows and current-account deficits due to multinational "investment" are ignored, this investment is outstripped by the staggering cost of cheap electricity to CAPEX and cross-subsidisation. Raising tariffs will not bankrupt these companies and spark some kind of apocalyptic economic decline, as Table 4 illustrates. Table 4 lists all 36 members of the Energy Intensive Users Group and their annual profits. These users combined consume 44% of all electricity sales in South Africa; at a minimum of 100GWh per annum per user.

By way of comparison with the figures in Table 4, Eskom's annual profit for 2008 was R974 million with large losses in 2009. Another way of looking at the wealth of these users is to consider that BHP Billiton's global operating profit for one year is roughly equivalent to Eskom's current R160bn funding shortfall.

Graph Three



<sup>9</sup> Mike Schussler. 2008. "Eskom: Electricity Supply Rates and Increases", pg. 18

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*Table 4: Energy Intensive Users*

Energy Intensive User	Annual Profit 2008 (after tax, unless otherwise stated)
AECI	R379 million
Afrox	R412 million
Air Products SA	Global Net Income US\$910 million
Anglo Operations Ltd	Subsidiary of Anglo American. Anglo American plc profit US\$6,120 million.
Anglo Platinum	US\$2,226 million, Operating Profit
Anglo Coal	US\$736 million for SA operations only
Anglogold Ashanti	(US\$1,155), loss due to hedge reduction
ArcelorMittal SA	R12,159 million
Assmang Ltd	Assore 50% ownership, R3,069 million African Rainbow Minerals 50% ownership, R4,947 million [ARM Ferrous Headline Earnings R2,775 million]
BHP Billiton SA Ltd	BHP Billiton Global, operating profit US\$24,529 million
Cape Town Steel & Iron Works	Subsidiary of Murray & Roberts, R2,064 million
Columbus Stainless (Pty) Ltd	76% owned by Acerinox, Euros 504 million 12% Samancor, 12% Industrial Development Corporation
Consol Glass (Pty) Ltd	Not available.
De Beers Consolidated Mines	Global group underlying earnings of US\$515 million
Exxaro Resources	R3,331 million
GFL Mining Services (Gold Fields)	R4,817.8 million
Harmony Gold Mine Company Ltd	R503 million, operating profit
Highveld Steel	Owned by Evraz Group, US\$1,930 million
Hillside Aluminium Limited	Owned by BHP Billiton
Implats	R17,705 million
Kumba Iron Ore Ltd	R9,083 million
Lonmin Platinum	US\$764 million, operating profit
Mondi Ltd	Euros 111 million, underlying operating profits for South Africa division
Pretoria Portland Cement	R1,499 million
Pulp United (Pty) Ltd	Owned by NCT Forestry Co-operative Limited, financial results unavailable
Rand Water	R806 million
Richards Bay Minerals	Owned equally by Rio Tinto and BHP Billiton
SA Calcium Carbide	Owned by the privately held Argentinian company Electrometalúrgica Andina. Financial details unavailable.
The South African Breweries Limited (SABMiller)	2009 results, South Africa division, R764 million (EBITA)
Samancor Manganese	Owned by Anglo American plc (40%) and BHP Billiton (60%)
SAPPI Management Services (Pty) Ltd	Sappi global, US\$102 million
Sasol Synfuels Ltd	R23,528 million
Scaw South Africa (Pty) Ltd	Owned by Anglo American plc
Sishen Iron Ore Company (Pty) Ltd	Owned by Anglo American plc and Exxaro Resources Limited

Transnet Ltd	R 6,232 million
Xstrata Alloys SA (Pty) Ltd	Xstrata plc, US\$4,698 million

## IV. Eskom's 2009 Data

*"They [contracts to aluminium smelters] are problematic not only in price, they impose an accounting uncertainty on this organisation that makes proper strategic management of its resources very difficult. So we are looking at the form and the content of the contract."*

--Bobby Godsell, Eskom Chairperson, Mail & Guardian 28th of August 2009

Eskom's Annual Report for 2009 is something of a shocker. Losses of R9.708 billion, operating loss of R3.195 billion, a loss of R9.514 billion on aluminium and foreign currency linked embedded derivatives. Essentially, Eskom lost huge on its deal (more like a fleecing) with BHP Billiton. As the aluminium price declined, so did the tariff paid by BHP Billiton, all the time while Eskom's costs rose.

The 2009 Annual Report clearly shows that Eskom has been selling electricity to some of the largest and richest multinational corporations on the planet below actual cost of production, let alone the average cost of production. The idea that large scale users such as BHP Billiton subsidise the electricity usage of poor households is now in tatters.

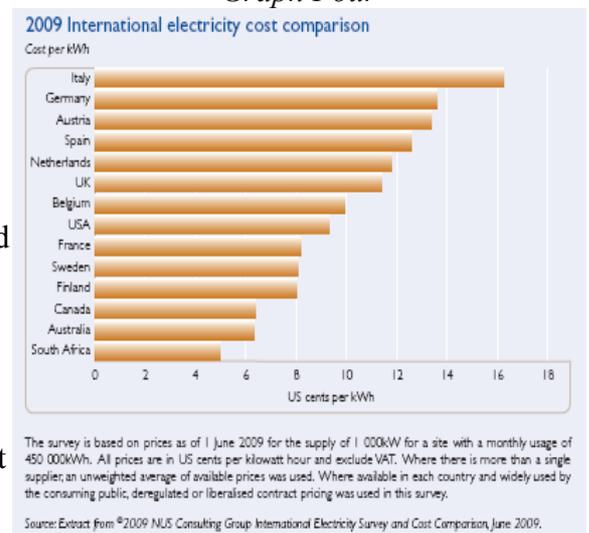
How much did BHP Billiton make out of this deal with Eskom? R1.3 billion<sup>10</sup>. At a Free Basic Electricity of 200kWh per household per month, 289,413.00 poor households would have had a meaningful electricity supply for a year. Taking an average of four people per household, that's a 1,157,650 people with access to electricity. Given that, 2.5 million households are currently without access to electricity, with 500,000 of those in urban areas, one can only ask, who is robbing whom?

How bad was the revenue vs. costs situation in 2009 for Eskom? Well, according to the 2009 Annual Report (pg. 4), the average cost of production (27.63c/kWh) was 2.66c/kWh higher than the average selling price (24.97c/kWh). In Table 5, the average cost of production is contrasted with the revenue from customer type. This Table shows that Eskom made considerable losses (higher than in 2008) from selling to redistributors, industrial customers, mining customers, and international end users. Once again, based upon the average cost of production, Eskom is underselling to industrial customers.

*Graph Four*

What is really interesting is the situation with International Utilities. Unlike in 2009, the revenue per kWh exceeded the average cost of production. While the differential was only 0.11c/kWh, this resulted in a "profit" of R4 million due to the large volumes sold. The last anyone at Earthlife heard, this 0.11c/kWh above the average cost of production has not caused the destruction of societies beyond our borders.

And still Eskom remains committed to the cheapest electricity in the world; see Graph Four<sup>11</sup>. There is a reason it is so cheap and it is not because of dirty coal or cheap labour, it is because Eskom must be one of the few monopolies that sells its product below cost to its biggest (and richest) customers.



<sup>10</sup> <http://www.mg.co.za/article/2009-08-28-eskom-in-the-red>

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*Table 5: Eskom Average Costs vs. Revenue 2009. (Derived from pg. 228 of Eskom's 2009 Annual Report)*

Category	Number of Customers	Percentage of Total Customers	Consumption in 2009 (GWh)	Percentage of Total Consumption	Eskom Revenue 2009	Percentage Revenue from electricity sales	Eskom Revenue 2009 R per kWh	Eskom Average Total Cost per Unit Sold (R/kWh)	Differential between Revenue and Total Cost	Profit/Loss (Revenue/Average Cost per Unit), Rands	% Increases/Decreases in Profit, 2009 vs 2008	% Increase in Losses, 2009 vs 2008
Redistributors	769.00	0.01763%	88,345.0000	41.12%	20,579,000,000.0000	38.36%	0.2329	0.2763	-0.0434	-3,830,723,500.00		83.90%
Residential	4,223,708.00	96.85167%	10,392.0000	4.84%	5,552,000,000.0000	10.35%	0.5343	0.2763	0.2580	2,680,690,400.00	0.21%	
Commercial	47,603.00	1.09156%	8,642.0000	4.02%	2,732,000,000.0000	5.09%	0.3161	0.2763	0.0398	344,215,400.00	-44.82%	
Industrial	2,935.00	0.06730%	54,815.0000	25.51%	11,887,000,000.0000	22.16%	0.2169	0.2763	-0.0594	-3,258,384,500.00		69.42%
Mining	1,144.00	0.02623%	32,177.0000	14.98%	7,439,000,000.0000	13.87%	0.2312	0.2763	-0.0451	-1,451,505,100.00		79.78%
Agriculture	84,329.00	1.93370%	4,913.0000	2.29%	2,249,000,000.0000	4.19%	0.4578	0.2763	0.1815	891,538,100.00	7.49%	
Traction	509.00	0.01167%	2,918.0000	1.36%	869,000,000.0000	1.62%	0.2978	0.2763	0.0215	62,756,600.00	-110.16%	
International Utilities	7.00	0.00016%	3,525.0000	1.64%	978,000,000.0000	1.82%	0.2774	0.2763	0.0011	4,042,500.00	112.79%	
International End Users	3.00	0.00007%	9,123.0000	4.25%	1,356,000,000.0000	2.53%	0.1486	0.2763	-0.1277	-1,164,684,900.00		43.58%
<b>Total</b>	<b>4,361,007.00</b>		<b>214,850.0000</b>	<b>100.00%</b>	<b>53,641,000,000.0000</b>	<b>100.00%</b>						

<sup>11</sup> Eskom's Annual Report 2009, pg. xii

## V. Concluding Remarks

If the data and analysis presented in this SE Briefing are correct, then there is a serious, structural problem within Eskom's pricing structure. Further, this structure is not being addressed by the Regulator, National Government or Parliament, yet the future of Eskom (and thus electricity supply) is at stake. The massive losses reported in Eskom's Annual Report 2009, attributable to selling electricity to users such as BHP Billiton at a loss, should serve a serious warning to policy makers.

The current funding trajectory for Eskom seems to be a combination of soft loans from Government, equity injection from Treasury, external loans, and average tariff increases. Average tariff increases do not affect those with Special Purchasing Agreements or address the underlying imbalance within the sector. What is apparent is that these funding mechanism will work their way back to taxation of some sort. Either taxes will be raised to fund Eskom or spending will be cut in other areas, such as health, social security, education, etc. However the cookie crumbles on this, it will be ordinary South Africans that will feel the pain.

Eskom cannot be a self-funding utility or can internally finance CAPEX unless industrial tariffs are raised and the practice of selling below cost of production is halted. To do this, the contracts between Eskom and its intensive users (inside and outside the borders of the country) will have to be examined in public and then renegotiated. Hiding behind "commercial secrets" is a sure way to decay the common good.

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seccp@earthlife.org.za - Tel: +27 11 339 3662 -  
www.earthlife.org.za

