



## SOUTHERN AFRICAN FAITH COMMUNITIES' ENVIRONMENT INSTITUTE

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*Faith communities committed to cherishing living earth.*

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**30 November 2018**

**Attention:**

Ms Lehuma Masike and Mr Dumisani Njezula  
National Energy Regulator of South Africa,  
Kulawula House, 526 Madiba Street,  
Arcadia, Pretoria

[mypd@nersa.org.za](mailto:mypd@nersa.org.za)

### **Submission on Eskom's fourth Multi-Year Price Determination (MYPD4) application**

#### **1. Background - who is SAFCEI**

The Southern African Faith Communities' Environment Institute (SAFCEI) aims to promote care for the entirety of God's creation. We are an institute of people of many faiths, united in our diversity through our common commitment to earthkeeping. Our aim is to support the faith communities in fulfilling their environmental & socio-economic responsibility. SAFCEI upholds the core principles of the Earth Charter, including: respect and care for the community of life, ecological integrity, social and economic justice, democracy, non-violence and peace.

We call on governments to place environmental justice at the forefront of their agendas, to promote a value based economic system and take steps to safeguard the future of our children and the Earth.

SAFCEI provided input into the MYPD3 Eskom Application, the DoE IRP2010 and the updated 2013IRP, the draft Integrated Energy Plan (IEP) first 2010 carbon tax discussion paper, the 2013 carbon tax discussion paper, the Davis Committee on the Carbon Tax, the selective reopener of the MYPD3 of 2015 and RCA applications for 2013/2014, 2014/2015, 2015/2016. Recently, SAFCEI submitted comment to both the DoE and parliament on the draft IRP2018.

#### **2. MYPD4**

SAFCEI welcomes the changes that have taken place at Eskom over the last months. However, the replacement of the board and the removal and replacement of probably corrupt management does not seem to have had sufficient impact on the ability of Eskom to produce a prudent electricity tariff application or to keep its cost of supply affordable.

Our objections to Eskom's MYPD 4 application is based on the following:

- It is unaffordable to South African consumers
- Infated demand projections that are out of touch with consumption trends
- Downplaying of the global energy transition to distributed generation based on renewables
- Lack of clarity for the total cost of supply for different generation types and exclusion of the externalised costs of coal and nuclear from the cost of supply

- Focus on debt management rather than on curbing escalating costs caused by poor management
- Need for a restructured Eskom that can provide affordable reliable energy services responsive to the new energy environment.
- Eskom's role in a just energy transition that reskills workers and shifts to clean energy.

### 2.1 Affordability

The details and breakdown of costs (capital and operating) debt repayments, taxes and reasonable profit and dividends to shareholders is hugely complex. This submission will not address all these issues but reserves the right to do so at the public hearings in January 2019. We would like to know what percentage profit Eskom is aiming for in this MYPD4, how this compares with international standards and how this impacts on the tariffs.

Eskom's application for tariff increases, amounting to 15% every year over the 3 successive years of the MYPD4, are hugely in excess of the CPI. This is simply unaffordable for consumers. Electrification of homes without an affordable supply is a unfulfilled promise. Eskom motivates the increases as the need to shift to cost reflective tariffs and the urgent need to pay off costly debt. It is our view that Eskom's privileged position as a monopoly electricity utility unable to respond to the energy transition in South Africa has resulted in inefficient operation and generation choices. Combine this with apparent large scale corruption and mismanagement and we now have an Eskom which is increasingly unable to supply reliable, affordable and clean electricity. We believe Eskom fails to meet the requirements of an efficient and prudent electricity provider. Worse still, South Africans are increasingly unable to bail Eskom out with above inflation tariff hikes. NERSA, the DoE and the Government need to step in URGENTLY to restructure Eskom to manage its costs and to keep the country's lights on. See some suggestions on cost savings in sections 2.6 and 2.7.

*"Goldman Sachs Group Inc. said in September 2017 that Eskom Holdings SOC Ltd., which has more than R62 billion (\$4.5 billion) due in principal debt payments in the next five years, was the biggest single risk to the economy."*

<https://businesstech.co.za/news/finance/255015/eskom-is-the-single-biggest-risk-to-south-africas-economy/>

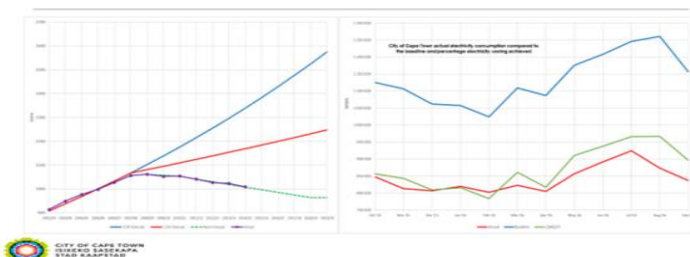
Eskom chairperson Jabu Mabuza today admitted that Eskom is 'locked into a permanent loss-making position' and is in an unsustainable, perilous position. 'We are spending more and having to borrow more at higher costs to repay what we previously borrowed and cannot afford to repay from our declining profits,' Mabuza said. Municipalities owe Eskom some R17bn. The utility has debt of about R400bn, with debt-servicing costs of R45bn, and cash from operations at under R27bn. <https://mailchi.mp/thenewsletter.co.za/> 28 Nov 2018

### 2.2 Demand projections

In this MYPD4 application, as with other applications, Eskom refers to their method to calculate their projected sales. As we have pointed out in the past, such a methodology is flawed. For example, Eskom suggests that municipalities form 41% of their customer base and projects that this sector will use more electricity over the next 3 years. Figure 1 below shows that the demand from municipalities is decreasing, a point made by the City of Cape Town at successive NERSA hearings in the past. Reduced demand is consistent with global trends where energy consumption and production are no longer on parallel upward paths. Efficiency measures and SSEG are resulting in lowers energy purchases from utilities.

**Figure 1: Electricity demand Cape town**

Electricity demand Cape Town 2006/7 – 2015/16



Additionally, cities responding to Climate Change agreements and greater control over electricity supply and pricing are looking to divert their electricity purchases to alternatives and away from Eskom’s coal dominated generation. Today 29 November 2018 Eskom reinstated nation wide load shedding. This reinforces the point that Eskom’s own supply targets are being compromised by their own management deficiencies. It is further justification for municipalities to claim a bigger role in alternative electricity generation. The City of Cape Town served papers in the High Court requesting a dispensation from the DoE and NERSA to purchase electricity from IPPs. While the case is ongoing, this demonstrates a sense of urgency by local authorities to protect their citizens from both the impacts of fossil fuelled Climate Change, supply uncertainty and dramatically increasing ESKOM electricity prices. We suspect that a number of the larger municipalities are awaiting a positive outcome for this court case so that they can also apply to purchase from IPPs.

While on the relationship with local authorities, on Page 58 of the MYPD4 Distribution document Eskom proposes to take over part of the electricity provision in municipalities and to charge them a fee to do this. Currently municipalities impose a surcharge on electricity in order to cross subsidise other municipal infrastructure including streetlighting. It is also understood that in areas where Eskom supplies electricity, municipalities sit with a shortfall in service funds. Without entering into a debate on the pros and cons of the actions of municipalities, we question whether Eskom’s taking over electricity distribution at local authority level will lead to better service delivery for people on the ground.

### 2.3 Impact of SSEG on Demand Projections

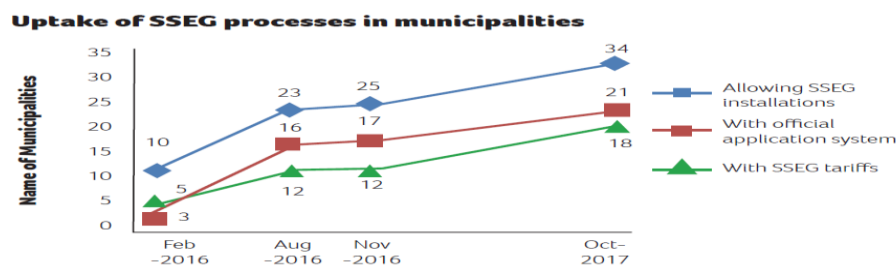
The draft IRP2018 refers to the increasing amount of embedded generation over time. Eskom’s MYPD4 application summary has nothing we could find to say about embedded generation. It has a short paragraph whose heading is “*Independent power producers (IPPs) and small scale embedded generators (SSEG)*” but then only refers to the REIPPP programme of 27 IPPs. (distribution Document pg 38).

In our view, it is irresponsible for a state utility to exclude the impact of embedded generation on their projected sales volumes. It shows an organisation out of touch with the global energy transition based on the Trilemma of Decarbonisation, Decentralization & Digitization. South Africa is ranked 113th out of 114 countries in the Effective Energy Transitions Index 2018 report by the World Economic Forum. This report considers the ability of countries to balance energy security and access with environmental sustainability and affordability.

<https://www.fin24.com/Economy/south-africa-comes-second-last-on-energy-transition-index-20180316>

Figure 2 shows an increasing number of municipalities which are putting systems in place to register and regulate SSEG systems within their local areas. Recent press articles estimate that solar pv rooftop systems grew from an estimated 35MW to 159MW from 2016 to 2017<sup>1</sup>, and are growing steadily. As many domestic SSEG systems are not registered, it is anticipated that the actual generation capacity is much higher. This demonstrates a growing shift away from Eskom power purchases. Given that Eskom claims 41% of it’s sales are to municipalities, it is difficult to understand why Eskom has not included this real world trend in their planning to date.

Figure 2 : upward trend of municipalities adopting SSEG processes (SALGA 2017)<sup>2</sup>



<sup>1</sup> <https://www.dailymaverick.co.za/article/2016-04-21-rooftop-solar-pv-will-be-a-game-changer/>

<sup>2</sup> SALGA 2017. The status of small scale embedded generation in South African Municipalities. October 2017 <https://www.salga.org.za/SALGA%20Energy%20Summit%202018/Energy%20Summit%20Web/Document/Status%20of%20Small%20Scale%20Embedded%20Generation.pdf>

In its Distribution MYPD4 document, (page 64), Eskom admits that due to renewable energy, particularly solar, it will have excess capacity during the day. It also states that *“Irrespective of whether or not Eskom is in a period of operational excess for certain hours of the day, or constrained supply, the system demand profile has a significant impact on the future supply requirements and the sources and cost of generation. Eskom’s system demand profile results in high production cost during peak periods and low power station utilisation during the night. IDM therefore support customers to implement processes and technologies to shift demand from peak to off-peak periods. Not only do customers benefit from a tariff perspective, but Eskom in the short-term reduces generation cost and in the long-term delays generation expansion, thus providing a win-win solution”*

We would argue that Eskom needs to provide incentives to lessen and flatten the demand peaks, a key one being residential demand which could be better managed using residential Time of Use (TOU) tariffs. NERSA should support Eskom in this regard by requiring that municipal residential tariffs start to phase in TOU. This may require new smart meters, but would be an investment in DSM which is already an accepted Eskom strategy. An investment in smart meters with TOU management supports the distribution system so that it is less sensitive to fluctuations in demand and focusses on energy management, already a key tool in an energy transition to renewables.

We are somewhat confused about a statement in Eskom Distribution Doc pg 64 *“Eskom will have excess operational capacity during the mid-day. New technologies and demand management programmes will be required to shift load to, or increase sales during this period”*. Encouraging more people to use electricity during the day is exactly the load profile that would fit with increased amounts of renewables, particularly solar. However, we quoted Eskom earlier as saying that there is low power station utilisation at night and that they would encourage customers to shift to off peak periods, presumably at night. We are therefore unclear about Eskom’s strategy.

We believe that a large scale roll out of solar water heaters with electrical back up elements timed to come on a different times of the afternoon between midday and 5pm would reduce peak demand and use some of the spare day time capacity. Solar Water heater roll out is not mentioned by Eskom in its EESM or IDM discussions. A study to look at the funding models for a roll out of solar water heaters vs the cost of new distributed generation needs to be undertaken. We also believe that an excess of day time electricity would map with the projected increase in electric cars and bikes being charged while parked at work during the day. By looking at the opportunities of digital and renewable energy technologies as discussed above, Eskom could create a platform of new energy services for its customers.

#### 2.4 Need for clarity on the cost of supply for generation sectors and pricing agreements.

There are a number of areas within the MYPD4 application that confuse rather than clarify.

In explaining its operating expenditure, it refers to employee benefits making up about 50% of the costs. One assumes that most of these employees are working in the coal sector, which dominates Eskom’s fleet. In order to understand Eskom’s generation choices and the implications for consumers, it is important that the operating costs for each sector are identified. This is especially relevant for coal which does not meet the national air emission standards and also has excessive GHG emissions. Mpumalanga’s 12 coal fired power stations made global news in October this year for the world’s highest levels of nitrogen dioxide pollution.

<https://ewn.co.za/2018/10/29/mpumalanga-is-world-s-largest-air-pollution-hotspot-greenpeace>

As, Eskom does not include its employee costs at power stations as part of its disaggregated coal costs but only its primary coal energy costs, this presents a skewed picture of costs. The renewable energy costs do include the cost of their employees. In renewable energy IPPs, the employees and contractors are not employed by Eskom, but their costs are included in the price of the renewable energy as it leaves the plant - the cost Eskom pays.

In Eskom’s MYPD4 summary document, it states a separate line item for taxes and levies, of which almost all is the environmental levy. The environmental levy should also be included in the coal related expenditure, as it is not applicable to the IPPs. Although we were unable to

extract all the details, the overall impression created is that coal generation is not as expensive as renewable IPPs. In our view, this is misleading.

It appears that special pricing agreements are mooted as a way to increase sales. This appears to be a short term thinking to lock in new clients at a reduced cost of supply. While this may increase the electricity demand, we are concerned that it may lead to these customers eventually paying less than the cost of supply and in effect being subsidised by other customers. It is not clear how this will help Eskom to increase revenue.

SAFCEI believes that Eskom demand is likely to decrease, as it has over the last few years, and that increasing tariffs are likely to exacerbate this decrease. This Eskom application fails to convince us that demand will increase and Eskom therefore needs to plan for a decreasing demand.

## 2.5 Debt

SAFCEI submits a general comment here. Throughout the Eskom application, it refers to a sacrifice it is making for the country. This is disingenuous given that Eskom mismanagement is largely to blame for its problems. It is extremely worrying that Eskom appears to be postponing a shock price hike as there is a large jump in debt repayment in 2022/23 (Eskom Summary MYPD4 pg 12)

**TABLE 2: ESKOM DEBT COMMITMENTS**

Eskom Debt Commitments (R'm)	Application 2019/20	Application 2020/21	Application 2021/22	Forecast 2022/23	Forecast 2023/24
Debt securities and borrowings repaid	34 115	49 951	49 431	56 085	92 952
Interest paid	39 058	45 115	46 041	49 384	48 607
<b>Total Debt service</b>	<b>73 173</b>	<b>95 066</b>	<b>95 472</b>	<b>105 469</b>	<b>141 559</b>
Return + Depreciation	47 964	70 154	95 963	111 560	131 192
<b>Variance in debt service cover</b>	<b>-25 209</b>	<b>-24 912</b>	<b>491</b>	<b>6 091</b>	<b>-10 367</b>

If Eskom fails to include a cost reflective tariff portion that covers its debt service commitment, it will incur additional interest on unpaid debt. As such debt is likely to be repayable in dollars, it makes the country vulnerable to currency speculators and the vagaries of the international market. This is not in the interests of anyone. Postponing the debt repayments makes them more expensive and is likely to force Eskom to return to the regulator for further tariff increases - either in terms of increased RCA applications or further interim tariff increases.

Should this be the case, Eskom needs to focus on how to curb expenses in order to meet its debt obligations. It is not acceptable to continually return to the regulator for further increases.

## 2.6 Return or Efficiency

The government of South Africa is owed a reasonable return from its state owned enterprises. Given Eskom's current state of business, how can it be asked to generate a return?

According to the Electricity Regulation Act (*ERA section 15.1*) of 2006, tariff principles for licensees include:

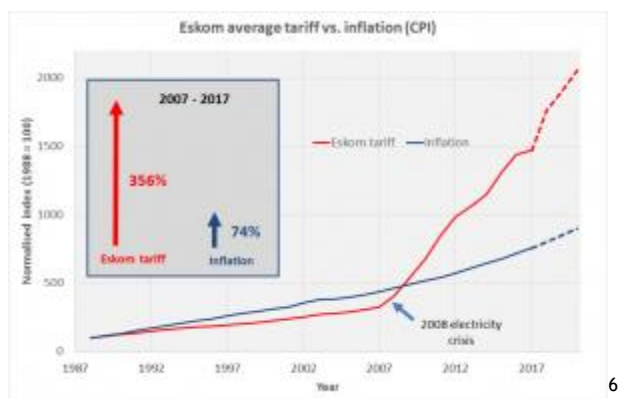
- (a) *must enable an efficient licensee to recover the full cost of its licensed activities, including a reasonable margin or return;*
- (b) *must provide for or prescribe incentives for continued improvement of the technical and economic efficiency with which services are to be provided;*
- (c) *must give end users proper information regarding the costs that their consumption imposes on the licensee's business;*

It is our contention that the regulator appears to have focused on allowing Eskom a "reasonable margin or return" but has failed to sufficiently interrogate if Eskom's service is "efficient", or that it has provided any proof of "continued improvement" of either "technical" or "economic" efficiency.

According to NERSA, over the last 4 years, Eskom has not been able to recover what has been allowed by the regulator<sup>3</sup>. How is it then that it can provide its shareholder with a dividend?

Every electricity increase imposed on the South African people has an inflationary effect. While salary increases might keep pace with inflation, media reports show that more than a quarter of the potential working population are not working<sup>4</sup>. Increasing electricity prices and the knock on effect on food and commodity prices is likely to drive more people into poverty. Electricity is an enabler promoting access to improved health, education, security and economic independence. When it becomes unaffordable these opportunities can not be accessed. This has a devastating effect on economically vulnerable South Africans who are deprived of the electricity required to develop their potential. There is a limit to the amount that govt can increase social security and so people become increasingly poorer. The inflationary impact of electricity price increases also impacts food security as people have less income and ability to obtain sufficient food.<sup>5</sup>

**Figure 3 - how electricity prices have increased compared to inflation over the same time period.**



As Figure 3 shows, over the last ten years, inflation over that period was 74% while Eskom Electricity prices have increased by around 356%, i.e. electricity prices increased more than four times than inflation<sup>7</sup>. If Eskom had not been allowed a dividend, then assumably the inflationary impact of electricity prices would have been reduced. For example, if the standard tariff of 93.79c/kWh<sup>8</sup> did not include a portion of a return to shareholder of 13.85c/kWh, that would reduce the tariff to 79.94c/kWh - a tariff reduction of 15 % of that proposed.

SAFCEI proposes that the Shareholder return be halted until Eskom is able to recover all its costs and has no shortfall, and that NERSA disallow any portion of the tariff for shareholder return as this is not prudent or in the public interest in the current economic environment.

### 2.7 Primary Energy costs.

In the global context, countries are moving away from coal generation towards renewable energy. Such moves are driven more and more by financial considerations. For example, China in 2017 had cancelled 120GW of proposed coal power plants, India cancelled 13.7GW and admitted that newly built 8.6GW coal generation was not financially viable (Steyn et al 2017)<sup>9</sup>. At the same time renewable power generation is getting cheaper.

<sup>3</sup> NERSA presentation to the Parliament Portfolio Committee on Energy March 2018

<sup>4</sup> <https://tradingeconomics.com/south-africa/employment-rate> ; <http://www.statssa.gov.za/?p=11361>

<sup>5</sup> The inflationary impact of electricity price increases impacts on food security

<https://www.iol.co.za/mercury/news/inflation-continues-to-bite-as-food-prices-ease-17004107>

<sup>6</sup> <http://www.poweroptimal.com/350-increase-decade-expensive-electricity-south-africa-compared-countries/>

<sup>7</sup> <http://www.poweroptimal.com/350-increase-decade-expensive-electricity-south-africa-compared-countries/>

<sup>8</sup> Figures taken from NERSA presentation to Parliament in March 2018

<sup>9</sup> Eskom's financial crisis and the viability of coal fired power in SA. Grove Steyn, Jesse Burton, Marco Steenkamp Nove 2017 [http://meridianeconomics.co.za/wp-content/uploads/2017/11/Eskom-s-financial-crisis-and-the-viability-of-coalfired-power-in-SA\\_ME\\_20171115.pdf](http://meridianeconomics.co.za/wp-content/uploads/2017/11/Eskom-s-financial-crisis-and-the-viability-of-coalfired-power-in-SA_ME_20171115.pdf)

**TABLE 11: SUMMARY OF PRIMARY ENERGY COSTS**

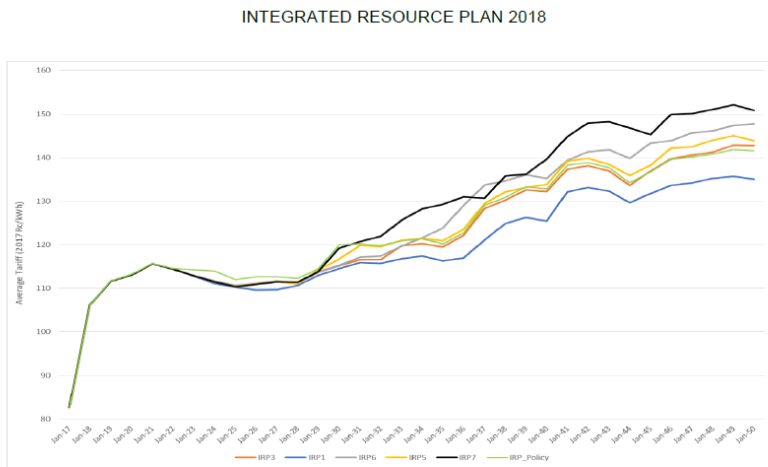
Total Primary Energy Costs R'million	Actuals 2017/18	Projection 2018/19	Application 2019/20	Application 2020/21	Application 2021/22	Projections 2022/23	Projections 2023/24
Coal burn	46 992	55 087	63 670	65 884	68 956	75 630	83 021
Water costs	1 796	2 639	2 641	3 036	3 279	4 701	5 058
Fuel procurement costs	137	154	155	146	153	161	170
Coal handling	2 223	2 200	2 181	2 067	2 130	2 161	2 265
Water treatment	437	538	507	513	544	576	611
Start-up gas and oil	2 149	2 164	1 893	1 815	1 862	1 899	1 983
Limestone	13	59	138	210	319	392	684
Black start facility(gas fired)	8	9	9	10	11	11	12
<b>Total Coal</b>	<b>53 756</b>	<b>62 851</b>	<b>71 195</b>	<b>73 682</b>	<b>77 253</b>	<b>85 532</b>	<b>93 803</b>
Nuclear fuel burn	820	810	972	887	908	953	987
OCGT fuel burn	320	816	880	948	1 019	1 095	1 175
Environmental levy	8 061	8 068	8 272	8 198	8 147	8 108	8 180
<b>Total Eskom Primary Energy</b>	<b>62 957</b>	<b>72 545</b>	<b>81 319</b>	<b>83 714</b>	<b>87 327</b>	<b>95 688</b>	<b>104 145</b>
Independent Power Producers(IPPs)	21 300	26 549	29 590	34 324	41 002	44 468	46 877
International Purchases (Imports)	2 768	3 127	3 533	3 734	3 957	4 194	4 459
Demand Response	160	319	339	359	381	403	428
<b>Total Non-Eskom Primary Energy</b>	<b>24 228</b>	<b>29 996</b>	<b>33 462</b>	<b>38 417</b>	<b>45 340</b>	<b>49 066</b>	<b>51 764</b>
<b>Total Primary Energy</b>	<b>87 185</b>	<b>102 541</b>	<b>114 781</b>	<b>122 131</b>	<b>132 667</b>	<b>144 753</b>	<b>155 909</b>

On pg34 of the Eskom Generation MYPD4 document, Table 11 states that the environmental levy is not included as part of the coal costs. We would argue that the vast majority of the environmental levy should be included in the coal costs. If we do this, we find that Total Eskom primary energy costs make up 72% of the total primary energy costs, and that coal makes up 98% of Eskom’s primary energy costs. As Eskom has no control over the IPP costs, we would argue that cost cutting should focus on the coal fleet which Eskom manages and should be able to reduce expenses.

It is useful to consider the IRP2018 draft which contains a price path indication for its various scenarios. (see Figure 4 ). The IRP2018 graph clearly indicates that the least cost option going forward is mostly renewable based. (Scenario 1 in the draft IRP 2018 plan) Increasing nuclear or coal increases the price of electricity.

Eskom’s current nuclear and coal energy costings are skewed as most of the fleet has paid off its capex and there is no need for CAPEX repayment in its operational costs. In our view, it is not useful for Eskom to continue to plan as if coal and nuclear costs will continue to be cheap in the future. It is also obvious that the operational and maintenance costs of existing power stations are increasing.

**Figure 4: from the IRP018 - price path for differnet scenarios**



**Figure 19: Comparison of Tariffs for the Scenarios in 2017 (Cents per Kilowatt Hour)**

In our view, the MYPD4 could be an exercise for Eskom to demonstrate to the public that going forward it is taking steps to minimise costs and to transition towards a future generation plan that will be best for South Africa at large, i.e. in the public interest.

According to Steyn et al 2017<sup>10</sup>, transition steps include cancelling new coal projects, decommissioning old power stations early and a deferral of new proposed coal capacity.

In that respect, we would expect Eskom to lay out how it is going to shift its generational capacity to reduce its expenditure. Acknowledging that such a shift is complex, here are some thoughts on what could be done.

## Medupi and Kusile

According to Steyn et al 2017<sup>11</sup>, who based their calculations on Eskom's financial reports, the remaining Capex to build Medupi and Kusile allocated each year is shown in the table below:

Table 13: Distribution of Capital Expenditure per FY (R'bn)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Medupi cumulative cost	1.0	2.0	4.0	8.0	16.0	32.1	41.9	54.8	66.9	77.0	84.7	93.9	101.3	117.4	127.6	137.6	145.0		
Kusile cumulative cost		0.9	1.8	3.7	7.3	14.7	24.9	39.5	54.3	66.6	78.7	95.1	112.4	126.1	135.9	143.8	150.6	156.5	161.4
Medupi CAPEX per annum	1.0	1.0	2.0	4.0	8.0	16.0	9.8	12.9	12.1	10.1	7.7	9.2	7.4	16.1	10.2	10.1	7.4		
Kusile CAPEX per annum		0.9	0.9	1.8	3.7	7.3	10.2	14.6	14.8	12.3	12.1	16.4	17.3	13.7	9.8	7.8	6.9	5.9	4.9

These figures do not include the cost of FGD.

Further, if these environmental mitigation costs are added to the costs of these power stations, we believe it further strengthens the argument that it would be better for Eskom to halt these infrastructure developments. Steyn et al explain that the costs of power generation from Medupi and Kusile (LCOE) will be R1.70/kWh and R1.91/kWh with an additional 2% added to the LCOE to cover the FGD costs.

## Early Decommissioning:

Steyn et al (2017), provide some indication of cost savings that could be obtained if some of the existing coal power stations were decommissioned early.

Table A: Estimated system cost savings arising from earlier decommissioning (R'm)

Scenario	Arnot	Camden	Grootvlei	Hendrina	Komati	GrHeKo
Moderate Demand	5 177	5 139	5 714	7 829	3 371	12 568

Note: These savings are not additive; our methodology assesses each station individually, except in the case of GrHeKo.

However, Eskom, in its Generation MYPD4 document pg 119, provides some numbers, stating that if the postponed retrofitting of pollution abatement had to take place at its fleet, it would increase the cost from R67bn to R140bn. Kusile will have FGD equipment. Eskom has however, attempted to postpone compliance with these environmental standards. SAFCEI believes that it is unacceptable that the the people of Mpumalanga have to bear the cost of Eskoms short term cost cutting. It also means that the public do not pay the real cost of electricity generation and Eskom fails to be responsible for the health impacts of affected people.

According to Eskom, decommissioning of older power plants depends on various risk factors, including the timing of completion of new power stations, the electricity demand and the performance of the existing fleet. These risks appear to centre around Eskom management - to

<sup>10</sup> [http://meridianeconomics.co.za/wp-content/uploads/2017/11/Eskoms-financial-crisis-and-the-viability-of-coalfired-power-in-SA\\_ME\\_20171115.pdf](http://meridianeconomics.co.za/wp-content/uploads/2017/11/Eskoms-financial-crisis-and-the-viability-of-coalfired-power-in-SA_ME_20171115.pdf)

<sup>11</sup> [http://meridianeconomics.co.za/wp-content/uploads/2017/11/Eskoms-financial-crisis-and-the-viability-of-coalfired-power-in-SA\\_ME\\_20171115.pdf](http://meridianeconomics.co.za/wp-content/uploads/2017/11/Eskoms-financial-crisis-and-the-viability-of-coalfired-power-in-SA_ME_20171115.pdf) table 13



maintain and repair power stations and to competently manage its capital infrastructure projects. SAFCEI believes that with adequate managerial competence, Eskom should be able to initiate the decommissioning process earlier and that this would result in Eskom reducing costs.

Water supply is also a key issue. Expensive water infrastructure is needed to provide water for the new build coal power stations. The Eskom Generation MYPD4 document reflects this by acknowledging that water supply costs will increase.

Eskom is one of the country's largest water consumers, using about 2-3% of South Africa's water supply annually (Eskom MYPD4 Generation Document pg 121). To comply with National Water efficiency rules, Eskom estimates it will cost an additional R6bn (Eskom MYPD Generation Document pg 122). Within this document, Eskom then states that there will be significant investment in water infrastructure for the Komati water infrastructure project but fails to provide details of the amount. We see that the overall primary energy cost puts forward a figure of R2 bn for water but would request Eskom (through NERSA) to confirm if this CAPEX amount includes the Komati water infrastructure project.

Steyn (2017)<sup>12</sup> argues that not completing unit 5 and 6 of Kusile as well as decommissioning Grootvlei, Hendrina and Komati (GrHeKo) could give rise to R15bn to R17bn without compromising energy security. Water savings on planned water infrastructure projects could be added to that saving.

If it is financially wiser for Eskom to stop these projects, then NERSA should disallow any portion of the tariff that Eskom has requested to cover CAPEX for Medupi and Kusile, or refurbishment for GrHeKo.

## 2.8 Restructuring of Eskom

Repeating the same pattern and expecting different results and expecting South Africans to continue to pay is not acceptable!

Predictably, in December 2014, Eskom failed to sell enough electricity to meet its revenue target. It was then allowed to raise electricity prices further in order to hopefully make enough money to make up the shortfall in revenue. This didn't work in 2009. How was repeating the mistake in 2014 going to fix the problem? Clearly it didn't.

And now Eskom has returned again, with the same story, and wants the people of South Africa to bail it out again.

Given that in RSA, the LCOE for the latest bid windows of renewable energy IPPs was 62c/kWh (for wind and solar PV), whereas the two proposed coal IPPs had an LCOE of R1.03/kWh, we would argue that Eskom needs to increase the share of renewable energy into the grid. <https://www.itweb.co.za/content/GxwQDM1A68wMlPVo>. The LCOE for Medupi and Kusile is even worse at R1.70/kWh and R1.91/kWh<sup>13</sup> with an additional 2% added to cover the FGD costs.

Eskom is structured as both player and referee, and has proven obdurate in its opposition to generation from renewable energy sources. Going forward, the country needs an energy utility that is modern and responsive to a future energy scenario that is currently unknown.

## Telkom parallel

The Telkom story is a salutary lesson when companies ignore technology and continue to behave in the manner of a monopoly. With the arrogant attitude that whatever Eskom decides, the people of South African will have to accept, we compare Eskom to Telkom. This tells a story of what happens when alternatives become mainstream and a service provider fails to adapt.

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<sup>12</sup> [http://meridianeconomics.co.za/wp-content/uploads/2017/11/Eskoms-financial-crisis-and-the-viability-of-coalfired-power-in-SA\\_ME\\_20171115.pdf](http://meridianeconomics.co.za/wp-content/uploads/2017/11/Eskoms-financial-crisis-and-the-viability-of-coalfired-power-in-SA_ME_20171115.pdf)

<sup>13</sup> [http://meridianeconomics.co.za/wp-content/uploads/2017/11/Eskoms-financial-crisis-and-the-viability-of-coalfired-power-in-SA\\_ME\\_20171115.pdf](http://meridianeconomics.co.za/wp-content/uploads/2017/11/Eskoms-financial-crisis-and-the-viability-of-coalfired-power-in-SA_ME_20171115.pdf)

Telkom fixed costs for landlines are such that many households no longer install landlines but rely on mobile phone operators. No doubt because households have done the sums.

Case study:

*Telkom Peak - R1.16 per minute*

*Telkom Off peak R1.03 per minute*

*Average: R1.12 per minute for the month.*

*Fixed charges amount to R3.59 per minute for the usage of 126 minutes per month, in effect, in this case, the user pays R4.71 per minute on a landline.*

*In contrast, the cost per minute for pre-paid cell phones (usually the most expensive cellular option) are all under R2 (according to the Research ICT African policy brief 2012<sup>14</sup>).*

*According to a 2014 media report, “In South Africa, the continent’s strongest economy, mobile phone use has gone from 17 percent of adults in 2000 to 76 percent in 2010. Today, more South Africans - 29 million - use mobile phones than radio (28 million), TV (27 million) or personal computers (6 million). Only 5 million South Africans use landline phones.”<sup>15</sup>*

In 2017, StatSA reported that the cost of telecommunications equipment eg cellphones had fallen 36% since 2014.<sup>16</sup>

While this might be outside NERSA’s ambit, the regulation of the electricity sector as a whole and not just the issuing of licensing and narrow consideration of tariffs, needs attention. SAFCEI submits that NERSA would be within its ambit to conduct investigations into the viability of the current outdated vertically integrated utility vs a more flexible structure which enables the provision of electricity in the public interest, in a flexible, decentralised manner.

## 2.9 Just transition

SAFCEI believes that the wellbeing of people and the economy is dependent on a optimally functioning ecology. Our energy path should therefore progress towards rehabilitating damaged ecological systems and ensuring that the decisions we take today are without regrets. We owe it to future generations not to degrade the environment further and hopefully to rehabilitate it.

Climate Change must be part of our planning. Water shortages are more likely and it is not acceptable to continue with coal fired generation into the future.

We need to become creative in our water recycling so that the cost of cleaning up industrial effluent and water is borne by industry. Such recycled water could be used for the power sector.

The population of Mpumalanga has borne the brunt of our coal fired fleet while the rest of the country benefited. This is an environmental injustice. The closing of coal fired power stations must be accelerated. This needs to be planned to ensure that no jobs are lost and that affected communities do not experience further hardship on top of the health impacts they have experienced.

Eskom appears to have made little attempt to embark on a just transition for its workforce in coal. The blame for this is Eskom’s. Its intransigence in failing to implement pollution abatement is another unacceptable burden that citizens of South Africa must bear. Eskom has acknowledged at least 333 deaths due to air pollution but what of the probably thousands of people who have not died but whose quality of life has been negatively affected and who have to live with asthma, circulatory problems and respiratory problems due to Eskom’s air pollution.

Similarly, nuclear energy has a number of hidden costs that those living around nuclear facilities bear, but which are not included in the cost of nuclear energy. This will be elaborated on at the public hearings and with a supplementary report.

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<sup>14</sup> [http://www.researchictafrica.net/docs/SA\\_Mobile\\_Prepaid\\_policy\\_brief.pdf](http://www.researchictafrica.net/docs/SA_Mobile_Prepaid_policy_brief.pdf)

<sup>15</sup> <http://www.tribeglobal.net/Newsletter/Technology-trends-The-use-of-mobile-devices-in-Africa>

<sup>16</sup> <http://www.statssa.gov.za/?p=10585>

SAFCEI is pleased to see that Eskom proposes to redeploy power station employees within the institution once the power stations are mothballed. The option to replace service contractors with Eskom employees should also enable Eskom to reduce overall staffing expenditure. SAFCEI believes that no jobs should be lost.

It is not clear what percentage of Eskom's jobs are in Transmission and Distribution as compared to Generation. Going forward, if Eskom is restructured to concentrate on transmission and distribution, and continues to only have coal fired generation, it would seem that increasingly, the ratio of employees in generation will decrease compared to Transmission/distribution as coal power stations close.

Going forward, it would be important to be given actual employee numbers in the transmission and distribution sectors of Eskom's business.

Older staff can be redeployed to other power stations while younger staff could be reskilled to be part of the new Eskom staff that would focus on renewable energy and grid adaptability for the future. This could, for example, include integrating storage into the grid.

## 2.10 Concluding analysis:

SAFCEI believes that it is prudent to concentrate on reducing those costs within ones control, rather than postponing debt repayment which has a high probability of increasing in an uncontrollable manner.

If, as we believe, Eskom's demand over the next 4 years is unlikely to grow, and if inefficient power stations could be closed, the primary energy costs would be reduced. Increasing management competence to ensure Medupi comes online on time would provide additional energy security. Improved management competence would also enable a maintenance plan that reduces unplanned outages, thereby reducing the emergency diesel bill.

Externality costs should be included in the cost of electricity. NEMA Section 2 particularly refers to life cycle, vulnerable people to have their say, and enviro justice. Section 1 of NEMA mandates all state institutions to adhere to the NEMA principles. NERSA is in breach of the law should it fail to do so.

Given that Eskoms primary energy costs are largely coal related, we would suggest that the costs of the coal power plant employees be attributed to coal related portion of the tariff increase.

**TABLE 23 : GENERATION ALLOWABLE REVENUE**

Allowable Revenue (R'millions)	AR	Formula	Application 2019/20	Application 2020/21	Application 2021/22	Forecast 2022/23	Forecast 2023/24
Regulated Asset Base (RAB)	RAB		1 027 553	1 080 783	1 128 545	1 169 374	1 199 682
WACC %	ROA	X	-1.32%	-0.21%	1.45%	1.76%	2.46%
Returns			-13520	-2237	16358	20611	29540
Expenditure	E	+	30 468	32 466	33 691	34 158	35 721
Primary energy	PE	+	73 386	75 876	79 561	87 983	96 393
IPPs (local)	PE	+	29 590	34 324	41 002	44 468	46 877
International purchases	PE	+	3 533	3 734	3 957	4 194	4 459
Depreciation	D	+	49 878	56 948	58 392	67 446	74 338
IDM	I	+					
Research & Development	R&D	+					
Levies & Taxes	L&T	+	8 272	8 198	8 147	8 108	8 180
RCA	RCA	+					
<b>Total</b>	<b>R'm</b>		<b>181 608</b>	<b>209 309</b>	<b>241 107</b>	<b>266 968</b>	<b>295 506</b>
<b>Not claimed in Application</b>							
Corporate Social Investment (CSI)			- 154	- 151	- 108	- 106	- 117
<b>Total Allowable Revenue</b>			<b>181 453</b>	<b>209 157</b>	<b>241 000</b>	<b>266 862</b>	<b>295 389</b>

If we look at the Generation Allowable Revenue table (Eskom Summary MYPD4 pg ) we would argue that most of the expenditure, depreciation and levies and taxes are due to coal generation, not just the bulk of primary energy costs. This would mean that R162004mill or 89% of

generation costs is attributable to coal/nuclear/gas whereas only 16% is attributable to the renewable IPPs.

Looking at pg 11 of the Eskom MYPD4 Summary document, of the proposed revenue of R219537 million, about 74% is attributable to coal/nuclear/gas generation. And 13% due to Renewable IPPs. We would then suggest that for every R1 paid for electricity by the consumer, 13c is for renewables and 74c is because of our fossil/nuclear energy mix. The remainder would probably accrue to the operational expenses of transmission and distribution.

### **3. Recommendations:**

As we complete this submission, Eskom has just started nation wide load shedding, once again highlighting the urgent need for restructuring and improved management of Eskom.

#### **SAFCEI proposes that:**

1 Eskom should not be allowed the requested increase of 15% per year in the MYPD4. Any permitted increase should be in line with CPI.

2 Eskom should be directed to reduce its expenditure on the coal fleet with replacement of new coal with new Renewables, improved management of both existing new coal build and maintenance and early decommissioning of old coal.

3 NERSA should investigate or facilitate the investigation of the economics of completing Medupi and Kusile. If it is financially wiser for Eskom to stop these projects, then NERSA should disallow any portion of the tariff that Eskom has requested to cover CAPEX for Medupi and Kusile, or refurbishment for GrHeKo.

4 Eskom should be required to present its expenditure in a way that is a true reflection of ALL the costs accrued to each of its generation sectors, rather than the current situation where not all costs are included in the fossil/nuclear generation costs. This appears to be an attempt to present renewable energy as more expensive than its own coal operations.

5 NERSA should conduct its own research and produce or facilitate an independent recommendatory report on Eskom restructuring. Such a report should be published for public comment.

6 Eskom's shareholder return should be halted until Eskom is able to recover all its costs and paid its debts. To support this NERSA should disallow any portion of the tariff for shareholder return as this is not prudent or in the public interest in the current economic environment.

7 NERSA should also relook at the RCA rules and review the efficiency of the RCA system.

8 NERSA should ensure that its activities uphold the National Environmental Management Act (NEMA).

We provide this submission in the spirit of constructive engagement, the cornerstone of strengthening our democracy, and look forward to engaging further with the process.



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