

**The privitisation  
of  
the electricity  
industry in  
South Africa.**

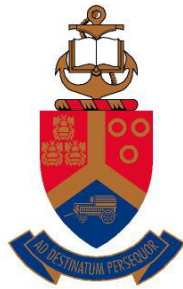
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## The privatisation of the electricity industry in South Africa.

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Information technology



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October 2010

## **Declaration by student**

I, the undersigned, hereby confirm that the attached treatise is my own work and that any sources are adequately acknowledged in the text and listed in the bibliography.

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Signature of acceptance and confirmation by  
student

## **Abstract**

Title of treatise	: The privitisation of the electricity industry in South Africa
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Since about 2007 there have been ever increasing power cuts across South Africa coupled with sharp increases in tariffs that end up hurting producers and consumers alike and these problems are still ongoing in 2010.

The objective of this treatise is firstly to identify the events that lead up to this energy crisis, because prior to 2007 South Africa had more than enough electricity to sustain its economy and provide electricity to the public. Also the treatise looks at alternative solutions to conquer this crisis, with its main objective to investigate whether privitisation or part privitisation of the electricity industry could be a solution available to South Africa.

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# Chapter 1

## Introduction

### **1.1 Topic background.**

Eskom, established in 1923 by the government of R.S.A is South-Africa's public utility for the provision of electricity to the public, and also the largest producer of electricity in Africa, supplying 60% of the African continents electricity and is ranked as the 10<sup>th</sup> largest power company in the world according to Eskom (10 February 2010)

But in the same breath it has not been living up to its reputation of delivering electricity, but rather made the public use to terms such as “load-shedding”, “blackouts” and “generators”. Millions of peoples lives have been disrupted by the power shortage at one stage or another, hundreds of businesses could not continue with normal business routines, but is something being done about this, or will this be what we can expect in the future? An article on the [inthenews.co.za](http://inthenews.co.za) website posted on the 15<sup>th</sup> of July 2008 claims that it was the in-ability of the government to act when they were told there was going to be a problem, and only once the problem arose – now it was time to do some crisis management and do something about the situation.

There are currently 26 power stations supplying South-Africa with electricity in the form of nuclear, coal fired, hydro-electric, windfarm, and open cycle gas turbines, currently this is not supplying sufficient electricity, whether it may be because of bad management of each of the plants, bad management of Eskom as a whole or purely not enough power plants to supply the needed amounts of electricity to a emerging 3<sup>rd</sup> world country.

## **1.2 Statement of main problem.**

As Eskom is currently the main electricity supplier in South-Africa, they are pretty much entitled to do what they want, and also in a large way are able to bully the government and also consumers, by increasing tariffs to counter their weak performance in the creation of electricity. Eskom is currently not “delivering the goods” within a reasonable cost to the consumer and there have been talks in the past 3 years of an external power supplier entering the South-African market, possibly to increase the competitiveness in the South-African market but many people are against this, and many are for this, and this shall be investigated whether it could be a wise move or not with regards to the consumers pockets, the South-African economy as a whole and where electricity provision in South-Africa is headed.

## **Is privatisation of the electricity industry in South-Africa a solution to the electricity crisis of the country?**

## **1.3 Statement of the sub-problems.**

In order to answer the main problem, four sub-problems need to be investigated.

### **1.3.1 Was Eskom's planning inadequate?**

In this sub-problem a closer look will be taken at the years running up to the crisis, because somewhere somehow the prospects of the future evaded Eskom and now a couple of years down the line the energy crisis is upon us. Points to be looked at under planning include:

- Bad management
- Loss and lack of skilled personnel
- Training
- The non extension of long term coal supplier contracts
- Governments role

In short this sub-problem outlines events that should have happened to prevent the crisis and why they didn't happen.

### **1.3.2 Is there a future for alternative energy sources and if so why has Eskom not gone that route?**

All around the world billions are being spent on research for more efficient, greener and renewable energy resources, while 90% of South-Africa's electricity is still being produced by coal, is there a need to move away from

coal turbine energy production or is South-Africa so coal rich that it is more feasible. Topics that are discussed in this sub-problem include:

- Alternative renewable energy sources available:
  - Solar power
  - Wind power
  - Hydro power
  - Tidal power
  - Biomass
- Is there a scope for such alternatives
- If so, is it economically viable
- What is being done in South-Africa

### **1.3.3 What is the impact Eskom and privatisation have on the South African economy?**

In this sub-problem it will be investigated how Eskom affects the current South-African economy versus how would it compare if outside investors or private electricity entity enters the South-African market. Points to be investigated:

- The current cost of electricity
- The cost impact an outside investor/utility would have on entering the market
- The long term costs that could be expected

### **1.3.4 What are the advantages and disadvantages of privatisation of the electricity industry in South Africa.**

Some other factors to be taken into consideration other than economic will be looked at in this chapter. Factors include:

- Job creation or job losses
- The effect it would have on the skill levels
- Any other problems that might arise
- In short – the reasons why the government have not introduced privatisation as an option will be discussed
- Sociological factors
- Service delivery

## **1.4 Hypotheses.**

The following findings are expected to be made in discussing each of the above mentioned problems.

### **1.4.1 Was Eskom's planning inadequate?**

The problem was not addressed when it should have been, although all the warning signs were there, they were not proactive enough to look into the future. Insufficient training and the loss of experienced and skilled personal is not a productive way of securing a good future. Top level management is not up to standards and BEE contracts has led to higher costs in the production of energy.

### **1.4.2 Is there a future for alternative energy sources and if so why has Eskom not gone that route?**

Yes there is. All around the world huge emphasis is being put on alternative energy sources, but Eskom had been left behind and are still relying on coal for the majority of electricity creation because it is less expensive. At the moment Eskom is starting to look at other sources, but yet again they are a couple of years behind where they should have been.

### **1.4.3 What is the impact Eskom and privatisation have on the South African economy.**

At the moment Eskom has lost South-African companies millions of Rands due to load shedding and bad service delivery so they are having a negative effect on the economy. Upon a new private utility entering the market, especially in the view of alternative renewable energy resources, the initial cost is very high, but the long term costs would be far less than the current methods. In the case of a private South-African company entering the market, the impact will be advantageous to the economy and the public, but not if the company entering is not a South-African based company.

### **1.4.4 What are the advantages and disadvantages of privitisation of the electricity industry in South Africa.**

Faith will be restored in the South-African citizens towards a government that looks after its people. As there is now competition for Eskom, its time for them

to pull their socks up and start working a bit harder at reaching their goals rather than just sitting back because the public don't really have any other choice. Due to alternative methods being more efficient, in comparison with the personnel needed for the maintenance and running of Eskom, newer technologies need less personnel which creates job losses.

## **1.5 Delimitations.**

- This study is limited to South-Africa in all cases except for the alternative energy resources, which need to be studied from other countries and utilities.
- The study is limited to actual facts and occurrences and not the personal feelings of South-Africans.
- As it is impossible to trace back all the events that lead to this crisis, only information on recent history will be taken into account therefore the last five to ten years.

## **1.6 Assumptions.**

As Eskoms business is an ongoing project, it must be said that within the next couple of months while the study is being conducted Eskoms tariffs, plans for improvement, management structure, delivery, to name but a few variables, will undoubtedly change, and the study will be adapted to this change, but previous information (info in the study stated prior to the change) will be kept as is to reflect the true ongoing nature of the crisis and how Eskom is adapting.

## **1.7 Importance of the study.**

Electricity is one of those resources that we cannot live without and it has become such a huge part of our lives that any crisis relating to this resource,



hugely affects every human being in South-Africa, whether it be the household that doesn't receive any electricity, the business that is losing money because of the lack of it, or just the pure irritation of the everyday person that is paying a lot of money for a service that is not up to scratch. That is why this study is so important because it touches the lives of 45 million South-Africans, and something needs to be done and whether it should be done by the way of privatisation of the industry is the aim of this study. It needs to be clarified whether the responsibility lies at Eskom or the government, because someone is to blame and it may possibly be both. It is important to look at future advances in technologies, management structures, the impact on the public, to ensure a utility that delivers, now and 50 years from now. Eskom has not been able to ensure that and measures need to be taken to prevent the situation from getting worse.

## **1.8 Research methodology.**

**The following information sources will be used.**

- Newspaper articles
- News on websites
- Books on Eskom
- Speaking to persons in the field
- Press releases from Eskom

The above mentioned will all be consulted as to guide the study to the current happenings within the industry, where its headed, what the stumbling blocks are, and the events that lead up to the crisis.

# Chapter 2

## Was Eskom's planning inadequate?

### 2.1 Introduction.

In order to prevent a problem from occurring, one would have to make adequate provision to prevent that problem from occurring or have a plan of how to overcome that problem once it occurs. The purpose in this chapter is to establish whether Eskom made provision to prevent the energy crisis from occurring and also if they have a backup plan to resolve possible future problems.

Firstly it needs to be determined if there is currently a problem with the way Eskom is conducting their business, and if there is a problem this needs to be identified and only then can one link that to the reasons as to why there is a problem, how could it have been prevented and how could it be resolved.

It is quite clear for even the normal man on the street to realise that there is a problem with the way Eskom is currently conducting its business, one only needs to look at newspaper headlines, the current hike in tariffs, the blackouts, millions of people living without any electricity, and the fact that a loan from the world bank needs to be obtained for the building of the new Medupi power station.

And Eskom cannot be solely blamed for this crisis, as is visible in a statement made by the president at the time Mr. Thabo Mbeki, "the government underestimated the likely rate of economic growth and wrongly ignored

Eskom’s warnings that it needed to start building new power stations, for this we are very sorry.” (James Myburgh; www.politicsweb.co.za 1 February 2008). So clearly judging by the statement Eskom is not the only ones at fault and the root of this needs to be uncovered.

## **2.2 The power shortage: a short overview.**

In the last few months of 2007 up until 2009 it became apparent that the demand for electricity was by far exceeding the supply thereof, and this was evident in the blackouts, and load shedding that occurred. One has to ask, how did a country like South Africa which has always had more than enough electricity find itself in a situation like this? To answer this question one has to look back and compare figures in the years leading up to the crisis with the years when the crisis occurred.

	<b>1996</b>	<b>2007</b>
<b>Mining</b>	19%	15%
<b>Agriculture</b>	2%	2%
<b>Transport</b>	2%	1%
<b>International</b>	3%	6%
<b>Municipalities</b>	42%	40%
<b>Households</b>	3%	5%
<b>Commercial clients</b>	0%	4%
<b>Industries</b>	29%	27%

Table 1. (Sake 24, 30 January 2008)

In the above table one can see a decline in the supply of electricity in most sectors namely mining, transport, municipalities and industries, agriculture remained unchanged, but a notable increase occurred in the household industry from 3% to 5%, the commercial clients from 0% to 4% and also the

international sector from 3% to 6% (which is roughly equal to a yearly increase of 10.7% per year.) The worrying factor is that there was a decline of electricity supply in South Africa whilst there was an increase in the exporting of electricity to foreign countries surely this is not conducive to good management techniques in a growing third world country.

## **2.3 Governments role.**

The economy is growing close to its fastest rate in 21 years. The platinum and ferrochrome industries, the world's biggest, are expanding and demands that Eskom roll out supplies to black households denied power during apartheid have combined to cause power outages across the country. The fact that Eskom hasn't opened a major plant for a decade isn't helping either. (www.in-en.com, 6 November 2007) One can see that the government had good intentions in providing the previously disadvantaged households with electricity, but not a lot of thought was put into this, and one can now see according to www.in-en.com (6 November 2008) that the demand for electricity has increased by 50% since apartheid, instead of providing more power stations, or letting private companies enter the market, they did not do anything about it and as stated in the introduction even the president at the time admitted that Eskom was right in wanting to build more power stations but the government denied them to do it.

Warnings of a dark future were clear and accurate. A White Paper of 1998 said that the country would run out of electricity by 2007. The report was signed by the then minister Penuel Maduna. Now, despite the dire prediction, it was never acted upon. Eskom's request for budget to build new power stations were also denied in 1998, and the government instructed Eskom to stop building new power stations due to the governments attempted privatisation of Eskom in the late 1990's (Francois Calldo, www.solidarity.co.za, 15 February 2008) Clearly the privatisation of the electricity industry was not as successful as planned

because till today Eskom is the major electricity producer in South Africa. Although they attempted to allow private companies to enter the market, there was not enough interest by the private companies as Eskom still wanted to retain 70% market share.

An article written on the moneyweb.co.za website and released on 1 February 2008 stated “Since 1997 the ANC government has used various methods to fend-off criticism. These have run from attacking motive to bullying, obfuscation, lying, and outright denial. Over time civil society and media became inured to these tactics. This is very indicative of a government trying to cover its own tracks, the people of South Africa have a right to know what is really going on and so do the private companies and mining industries, this can only constitute to a lack in leadership as no one is willing to take responsibility for their actions and so the problem is never solved but only grows.

As stated in the Citizen newspaper, in the five years before the blackouts started, Eskom made a profit of R33.5 billion, said chamber director Albert Schuitmaker most of that money had gone to the government in taxes and dividends instead of being used to improve maintenance, train staff and preserve coal stocks. (SAPA; www.thecitizen.co.za, 27 August 2009). This is simply another case of bad management by the government, they knew there where tough times ahead and instead of spending the money on maintenance, training etc they spent it elsewhere.

All in all it can be said that the government had as much to do with the crisis as did Eskom, the supply outweighed demand due to the rise in low cost housing after 1994 which led to the reserve margins of “spare” electricity being severely damaged, according to Buyelwa Sonjica the minister of minerals and energy in a Reuters article by James Machiara on 2 April 2009, a healthy reserve margin

lies somewhere between 17 and 20%, this is to ensure that sudden changes in demand and power plant maintenance can be met without disrupting the countries supply. But Sonjica states that in January 2009 the reserve was lying somewhere at the 8% mark and is still decreasing due to demand exceeding supply. It should have never been allowed to drop below the 15% mark and now the long term goal is to get the reserve back to 15% and to sustain it.

On a Carte Blanche documentary hosted by Derek Watts on 27 January 2008, entitled Eskom's darkest hour, Derek spoke to Jaco Kleynhans of Solidarity and stated the following.

**Derek:** 'That warning came from trade union Solidarity. At the beginning of 2006 they conducted a survey amongst their Eskom members and it emerged strongly that aging and badly maintained power stations and a major skills shortage would lead to a power crisis in the next few years.'

**Jaco Kleynhans** (Solidarity): 'No one wanted to acknowledge the problem. We said it.'

Jaco Kleynhans is Solidarity's spokesperson. He says the report was made public and given to Eskom.

**Jaco:** 'We sent it to the government - at that stage, to Mr Alec Irwin. He knew about that. The statistics coming out of Eskom themselves said that they had seen the problem and that there was not enough people to do the work and not enough technical people to fix the problems. Those were the statistics that we gave to them two years ago. So it was on the table. It is not something new.' And in the past week Eskom finally admitted that it has a severe skills shortage, saying its workforce has dropped from 60 000 to less than half of that.

**Jaco:** 'Those people who left were highly skilled and also highly experienced people. The problem is that you cannot just replace them within a day or two.'

This is just another example of how the government would just sweep an issue under the rug, and not attend to the problem when it surfaces, the issue of the loss and lack of skilled personnel will be dealt with in the following section.

## **2.4 The loss and lack of skilled personnel.**

The lack of skilled personnel in any organisation would be a something to worry about, and especially in such a crucial entity as Eskom where the provision of electricity is so important to the growth of the economy. We again refer to the Carte Blanche documentary where Derek Watts interviews Dr Steve Lennon the director of Eskoms corporate services.

**Derek:** 'You've lost a lot of skilled workers and then suddenly you have to expand at such a rate. Let's be honest, you need skills now and where are you going to find them?'

**Steve:** 'We have got about 4 700 candidates in our skills pipeline, which will come into the organisation. Those are artisans and scientists. We have been on international recruitment drives. All of this is aimed at getting the skills we need into the business.'

**Derek:** 'Steve, why did it take Eskom so long to admit that there was such a severe skills shortage?'

**Steve:** 'That particular statement relating to the shortages of skills we have at Eskom relates to research and development and innovation environment in Eskom to cater for the sudden burst of innovation we need.'

**Derek:** 'But you have got less than half of the staff you had 15 years ago?'

**Steve:** 'Yes, and that just shows how inefficient Eskom was 15 years ago.'

**Derek:** 'But at least they were producing enough power. They had an excess capacity.'

**Steve:** 'They had an excess capacity and you can argue that: is an excess capacity better than a shortage? Both of them are negative.'

**Alec Irwin:** 'The argument that there has been a loss of skills is really, in our view, trying to score a political point.'

Clearly there is a lack of skilled personnel at Eskom otherwise Eskom would not be pushing to train so many new staff, but what was the real reason for the loss of already trained and capable personnel? In the same carte blanche interview Derek speaks to a former employee who will remain anonymous:

**Derek:** But what about affirmative action? This man is an engineer with more than 15 years experience, but he left Eskom when he was told that as a white male he could never be promoted.

**Former employee:** 'I didn't believe there was much of a future for a white male in Eskom. The way affirmative action was applied, and I believe still is, does not offer any opportunities to stay there and give your best.'

In 2006, Eskom's Human Resource MD Mpho Letlape said As Eskom's expansion picks up steam the company is having to deal with shortages in key skill categories, particularly engineers, technicians and project managers. The sharp decline in technical and artisan skills in SA over the past decade is hurting Eskom as much as other public and private-sector companies.

Letlape also states that Eskom is responding to the skills crisis by increasing its training of new and existing staff and implementing an ambitious recruitment drive that involves employing about 1 000 new staff a year over the next five years.

This in theory in conjunction with the companies BEE policies mean that every day two new people have to be employed where one of those have to be a black woman. As the former employee stated that there was no reason for a white



male to stay at Eskom and give 100%, the question that remains is whether the recruiting will be affective or will they be losing skilled professionals as a result of a biased selection process. Letlape estimates that within their R84bn expansion programme they would have had to recruit at least 470 engineers, 700 technical staff, 90 quantity surveyors and 600 buyers up until 2011, but in a article by Brendan Ryan for the website miningmx.com on 17 August 2009, he states that there also appears to be inadequate financial planning at Eskom, especially in the light of the generation expansion plan and the policies adopted around coal and skilled staff, which has led Eskom into a cash flow problem.

It would have been much more beneficial for Eskom to hang on to their skilled staff and slowly introduce BEE compliant employees which is very needed in a growing country like South Africa especially after the end of apartheid, rather than to force their existing employees out and within a short period of time they sit with an unskilled and a somewhat diminished workforce. Now they sit with a situation where they have cash flow problems due to large amounts of money spent on recruiting policy fit candidates when in fact it would have cost much less to keep the existing workforce, just another example of Eskoms bad management.

## **2.5 Coal, coal suppliers and coal contracts.**

According to the Eskom website (Access 15 April 2010) internationally, coal is currently the most widely used primary fuel, accounting for approximately 36% of the world's electricity production. This situation is likely to remain until at least 2020. Coal has traditionally dominated the energy supply sector in South Africa, from as early as 1880 when coal from the Vereeniging area was supplied to the Kimberly diamond fields. Presently, about 77% of our country's primary energy needs are provided by coal. This is unlikely to change significantly in the next decade, due to the relative lack of suitable alternatives to coal as an energy source. South Africa produces an average of 224 million

tones of marketable coal annually, making it the fifth largest coal producing country in the world. 25% of our production is exported internationally, making South Africa the third largest coal exporting country. The remainder of South Africa's coal production feeds the various local industries, with 53% used for electricity generation. The key role played by our coal reserves in the economy is illustrated by the fact that Eskom is the 7th largest electricity generator in the world, and Sasol the largest coal-to-chemicals producer. South Africa's coal reserves are estimated at 53 billion tons, and with our present production rate there should be almost 200 years of coal supply left.

The use of coal to supply South Africa with electricity:

### **Advantages:**

- South Africa has abundant coal reserves
- According to Eskom coal-fired power stations are reliable, this might well be the case if they are properly managed and maintained.
- South Africa's infrastructure to generate electricity from coal is well established
- Burning coal is the most cost-effective and energy efficient way of generating electricity

### **Disadvantages:**

- Coal has the most waste problems of all energy resources. Waste includes sulphur and nitrogen oxides, organic compounds, heavy metals, radioactive elements, greenhouse gasses and a lot of ash – the validity of this statement will be tested in chapter 3
- Building a coal-fired power station is a long and expensive process

- South Africa's coal fields are concentrated in Mpumalanga, which limits the location options for power stations

Eskom Website; (Access 21 April 2010)

As one can see from the above, coal has and will be a very large role player in the supply chain of electricity in South Africa for some time to come, good coal supplies need to be ensured and the relationships between Eskom and the coal mines need to be strengthened and upheld. According to Eskom's coal specialist John Dempers at a coal, carbon and energy conference in Johannesburg on the 11<sup>th</sup> of March 2009, "Eskom would need 40 mines to be opened which amounts to an investment in the coal industry of R110 billion by the 2020. "

So where did the coal crisis begin and why did it get to this? These questions were asked to the minister of public enterprises Alec Erwin by Dr S.M van Dyk of the Democratic Alliance: (Interview posted on the DA website on 18 March 2008) Below is the questions asked followed by the reply by the minister:

**Question 1.** (a) Since what date has Eskom been experiencing a coal shortage, (b) why was and is this shortage still experienced, (c) what was the shortage, (d) how much coal does Eskom currently receive, as opposed to how much it needs and (e) what has Eskom done to solve this problem since the shortage came about;

**Reply 1.** (a-e) Eskom started experiencing coal handling and supply difficulties at the beginning of January 2008. The lower coal stockpiles are a combined result of the unusually high rainfall, the stations higher burn rates, the inability of the mines to produce more coal than contracted for and a drop in coal qualities, resulting in the power stations having to burn more coal for the same energy output. This, combined with lower deliveries over the holiday season caused the subsequent reduction in stockpile levels. Currently all stations are

receiving sufficient coal for their burn requirements and to build stocks faster, additional coal is being purchased. Eskom has embarked on a procurement process to buy an additional 45 MT of coal over a 2 year window. Of this, 34 MT has already been contracted.

**Question 2:** (a) Why did he and Eskom ignore the warnings regarding the problems with acquiring coal and the condition of the roads, which have been mentioned in a number of Eskom's annual reports since 2003, and (b) why did Eskom lower its coal stockpile;

**Reply 2:** (a-b) The Department of Public Enterprises together with Eskom did not ignore the warning regarding coal and condition of the roads. However, the unusually high rains affected initiatives to mitigate the problem. Despite its efforts, Eskom could not increase the coal supply and coal quantities within a short space of time. Once the coal had become wet due to the high rainfall, coal handling became problematic.

**Question 3:** Whether Eskom will change its tender policy for coal in the light of specific problems mentioned in its 2007 annual report (details furnished); if not, why not; if so, what are the relevant details.

**Reply 3:** Eskom's tendering processes are sound. However, the coal procurement process is being reviewed to identify areas of improvement and to fast track purchases within Eskom's procurement framework.

**Question 4:** (a) How many contracts of former coal suppliers were cancelled or not renewed or considered since 1998; (b) (i) how many and (ii) which new emerging firms have received contracts in order to achieve the goals of black economic empowerment (BEE) and (c) how many of the new BEE firms have met their contractual obligation to deliver sufficient coal on time to Eskom?

**Reply 4:** No long term contracts have been cancelled. Tonnages have been increased on most of Eskom's long-term contracts. Short-term contracts are used to "top up" the long- term contracts and they are renewed based on Eskom's requirements as necessary. Eskom deals with a large number of BEE companies especially for short term contracts. Eskom does not award contracts on the basis of BEE status alone, but on commercial, financial and technical criteria as well. Most BEE firms meet their contractual obligations in terms of tonnage and quality. When there are problems with performance, as with all other companies, these are dealt with through the contractual mechanisms. There are no ongoing breaches of contracts.

In conjunction with this interview, in an article posted on the Miningmx.co.za website on the 28<sup>th</sup> of January 2010, The author Troye Lund said "There's an urgent need for investment in the coal mining industry, at much higher levels than previous, given the coal demand needs in South Africa,". "South Africa's coal production has effectively been zero over the last three years," said Dames who added that demand for electricity in January was already up 9% from the previous year's January demand. By 2018 Eskom would need 141 million tons of coal a year, 17% more than the 129 million tons it required in 2008.

So what happened from the beginning of 2007 until 2010, the demand for coal was still high and coal reserves low, Eskom's head of generation stated in the same article that "Short-term contracts had helped Eskom resolve the 2007 supply difficulties, but these were coming to an end. And while it was assessing new medium-term contracts, securing long-term contracts was the problem." He also blamed the coal shortage on the need to transport coal more cheaply to power stations, and also that coal supply was in jeopardy as coals export price is lower than the price Eskom buys it for, and when the export price goes up there is a limit to what is available to Eskom. But this statement was dismissed

by the Anglo coal CEO, Norman Mbazima as he stated that there was no connection between the Anglo coal sold to Eskom and its coal for export.

Post 1994 one cannot blame Eskom for seeking ways to let BEE companies enter the industry, this is a very crucial part of a growing and culturally diverse country and would help to strengthen the position of BEE companies and unify them, but one would have to ask whether their efforts were too much too soon. Have they killed off potentially better suppliers due to their efforts of increasing BEE companies?

One article on the CAIRD.co.za website on the 3<sup>rd</sup> of February 2008, the author states the following, “Eskom do not seem to be that interested in local companies employing local people. It's all about buying from black owned companies. In fact I heard a story about a big South African company that manufactures cables locally losing a tender to two black people who imported the same product from China. As far as the Eskom procurement department was concerned they had bought from a black owned company.”

Surely this is not conducive to good management strategies, in fact it leans towards the total opposite, and yes black economic empowerment is a good practice, but not when you are neglecting your own countries suppliers and supporting the importing of products when you can find those products locally produced by local people. A line needs to be drawn as to when is there a positive effect for Eskom and when there is a negative effect just to ensure black economic empowerment. In the same article on the CAIRD website, the author tells of his friend who is a good quality supplier of coal in the Newcastle area and has a good track record with Eskom, but now Eskom is sourcing its coal from a company in Durban purely on the basis of BEE, the coal is costing

them more as transport plays a huge role, hugely negative financial effect for Eskom.

There is a document called The Eskadaat 6 (procurement by Eskom from black suppliers) that puts forward the procurement process to be followed by Eskom, it reads as follows.

1. Drawing from Eskom stores stock.
2. Drawing off from existing compulsory Framework Agreements.
3. Procurement from within Eskom Groups/Divisions
4. Procurement from Eskom Subsidiaries
5. Procurement from Black Women-owned Suppliers
6. Procurement from Small Black Suppliers
7. Procurement from Large Black Suppliers
8. Procurement from Black Empowering Suppliers
9. Procurement from other South African manufacturers
10. Procurement from local stock holders of South African or imported assets and goods
11. Direct importation.

In many cases these strategies are not being met, and where they are being met it is at the cost of Eskom that good solid suppliers are being left out of the loop in the hope of creating an industry consisting of largely BEE companies.

www.timeslive.co.za, SAPA, March 15 2010: The fact that Eskom has overspent its budget by R8 billion, mostly due to wasteful spending on short-term contracts, clearly shows that it is a crucial part of information that needs to be made public. Pieter van Dalen said "the big coal suppliers" had told the parliamentary portfolio committee on public enterprises they could have supplied Eskom with the required coal of the right quality and that their prices would have been significantly lower. "It would seem as if the entire structure of

coal procurement needs an urgent rethink in order to avoid this kind of waste in the future," he said in a statement.

## **2.6 Summary.**

Well it is obvious that there is a problem and that Eskom was not prepared and that their planning was inadequate, this is summarised into the following:

- The supply of electricity in most sectors in South Africa decreased, whilst households, commercial clients and exporting increased.
- According to the government, Eskom warned them and told them to build new power plants, but this was shot down by the government in order to try privatise the industry, but this never realised, as Eskom still wanted to retain 70% market share.
- Post 1994 the demand for electricity has increased by almost 50%.
- In the 5 years before the blackouts, Eskom showed a profit of close to R33.5 billion, but most of this money was given to the government in the form of taxes and dividends, and not used for maintenance of power plants.
- Electricity reserves ran low due to more exporting and also the rise in low cost housing.
- Eskom is currently training thousands of new staff members, this is due to the loss of many of their experts in the field, due to Eskoms new affirmative action employment program, as many whites lost faith that their would ever be any chance for growth within the structures of Eskom, and this led to cash flow problems.
- Coal is by far the major way of producing electricity in South Africa and this will be the case for many years to come.



- All of a sudden coal reserves were depleted and Eskom implemented a plan to invest R110 billion in the coal mining industry.
- Eskom blamed the start of the coal crisis on the unusually high rainfall and transport problems.
- Troye Lund stated that South Africa's coal production was effectively zero in the past 3 years
- The securing of long term coal contracts is a big problem, and the short term coal contracts that helped Eskom through the coal deficiency in 2007 were coming to an end.
- Eskom's procurement for coal procedures were having a very negative impact on the market as good solid suppliers with good track records were left out of the loop to make way for BEE suppliers, and mostly at increased costs.
- Eskom also blamed that they were being charged more for coal than the price for exporting, but these claims were denied.

## **2.7 Conclusion.**

To conclude, Eskom has made big changes in the electricity industry since the new government took over in 1994, but these were not thought through, they had very good intentions but the planning was inadequate, as supply for both electricity and coal decreased whilst demand increased. This is a fundamental error, which together with planning would have been picked up and prevented. The government from the start of their new reign should have worked more closely with Eskom to ensure that both of them are on the same page, because it's all good supplying previously disadvantaged people with housing but provision for electricity needs to be made at the same time otherwise the two work against each other. Eskom needs to seriously consider slowing down on all their

BEE procurement and staff election strategies, as this is forcing well experienced staff away to greener fields, and also coal suppliers to leave the market at a higher cost to Eskom and subsequently the public.

## **2.8 Testing of the hypothesis.**

The problem was not addressed when it should have been, although all the warning signs were there, they were not proactive enough to look into the future. Insufficient training and the loss of experienced and skilled personal is not a productive way of securing a good future. Top level management is not up to standards and BEE contracts has led to higher costs in the production of energy.

The assumptions of the hypothesis were in deed correct, so:

**Yes, Eskoms planning was inadequate!**

# **Chapter 3**

## **Is there a future for alternative energy sources and if so why has Eskom not gone that route?**

### **3.1 Introduction.**

Renewable energy is one of the topical stories of our day. Whether at dinner parties, around the water dispenser at work, or in the media, the issue of energy and alternative fuels shows no sign of abating. In light of the spate of power outages seen earlier in the year, investors in South Africa have joined the rest of the world in warming to the idea of renewable energy, not only as a viable source of power, but also as a means of cutting carbon emissions. (www.neworder.co.za 19 July 2010) This is true, everywhere you look whether it be a “green building” a “green car” even a “green cellphone” someone is busy looking for ways to save the planet by using renewable resources such as wind energy instead of using up all of the earth's supplies such as coal. There are two ways to look at renewable resources – the one is purely from a “tree-hugging” perspective of people that want to save the environment and want our children to live in a land abundant with animals and plants, and then there is the other group of people who see it as an economically beneficial way to produce goods such as electricity, water, metal. This is where this chapter claims its focus – on both, the actual beneficial impact as well as the environmental impact, can energy be produced more cheaply, more efficiently, more environmentally

friendly than the way it is at the moment? At the moment about 90% of South Africa's electricity is being produced by coal, Eskom website (Access 15 April 2010) and yes this is not as environmentally friendly as wind or solar energy, but this still doesn't mean that it is not economically viable or for that matter sociologically. Could renewable energy sources be the answer Eskom is looking for, could this assist the prevention of blackouts in the future, or is it just a phase everyone is going through. To answer these questions one would first have to look at the different types of renewable energy sources, assess whether it could work in South Africa or not, and then look at the financial implications.

## **3.2 Alternative energy solutions.**

### **3.2.1 Solar power.**

Solar power is such a viable alternative energy in comparison to other energy sources because there is no carbon dioxide waste given off, and it uses the natural light from the sun to generate electricity. Most energy sources, especially coal and nuclear power gives off bi products that are extremely harmful to the environment, but even once the panels used in the process are obsolete, they can be recycled easily, and there are no harmful waste products as simply there are no physical materials used in the process. There is so much room for solar power to be used in the development of 3rd world economies, as it is extremely cost effective in the long run as solar power is one of the most renewable ways of energy production. (www.eia.doe.gov; Access 23 July 2010) The sun is of course the energy source for this type of energy production, and the biggest bonus this offers is that it is free and at least for the foreseeable future it will not stop shining and in turn will keep providing this planet with a

seemingly endless supply and we don't even have to replenish it. Therefore solar power is definitely a renewable means of energy production.

### **Advantages**

- The sun's energy comes to us at no cost, which makes the process cheaper as no raw materials need to be purchased and involved in the process.
- The process is one hundred percent pollution free.
- Solar power can be used all over the world.

### **Disadvantages**

- The initial capital outlay for a solar power plant is very expensive, but the long term benefits are easily justified as it is a self regulating process, and little maintenance is needed in comparison with power plants.
- It is not effective at night as it needs the sun's rays, and also not very effective with cloud cover therefore very weather dependant.
- Job losses in terms of constant maintenance will increase, but it opens a door for job creation in the erection process.

### **Solar power in South Africa**

South Africa is at the forefront of developing new CIGS technology copper, indium, gallium, and selenium solar panels. The country does not however make enough use of its own technology. This is due in part to the costs involved but with price decreasing there is great possibility for solar panels to be installed throughout the country. (www.eia.doe.gov; Access 23 July 2010)

## **3.2.2 Wind power.**

Wind power is the conversion process of turning a blowing wind into electricity. A wind farm is a large area of land on which there are a number of

wind turbines up to hundreds, all using the power of the wind to turn the huge blades which in turn revolve turbines that create electricity. When creating a wind farm one must make sure that the spacing between the turbine is sufficient as not to cause energy/wind loss, so great design and serious testing and historical weather information is needed to successfully ensure the best locations to intercept winds strong enough. The minimum wind speed needed is from 16km/h upwards the wind needs to have a constant speed, should be non-turbulent and must not be subject to strong bursts of air the wind also blows faster the higher into the atmosphere you go. That is why most wind farms are found quite high up. And also why serious testing needs to be done.

### **Advantages**

- Wind is free and in abundance and we have the technology to capture the power of wind efficiently.
- The costs for wind turbines are only initial costs; once the turbine is built there are minimal maintenance costs which are involved.
- In rural areas which are not connected to a country's power grid it can be used to generate its own power.
- The space which a wind turbine takes up on land is very small as the moving parts are quite a distance above the ground.
- Wind turbines produce energy with minimal damage to the worlds environment and produces "clean power". (www.eia.doe.gov; Access 23 July 2010)

### **Disadvantages**

- Some pollutants are given off into the atmosphere in the creation of a wind turbine.
- Wind turbines can be quite noisy if you stand close to them.

- Wind speed is never constant and therefore there will not always be a definite supply of electricity from wind farms.
- One needs a very high number of turbines to effectively make an impact on a power grid, as one turbine is only able to power about 500 homes.
- Many people feel that wind turbines are unsightly and that they should not disrupt the natural beauty of landscapes.

### **Wind power in South Africa**

Currently, South Africa does not have any wind farms which supply the national grid, but there are numerous projects to get them up and running. Two pilot projects which involve the use of wind farms to supply the national grid are located at Klipheuwel and Darling both of which lie in the Western Cape. The project at Darling is set to be up and running in 2010 while the wind farm at Klipheuwel is in its first year of its three year experimental stage. The farm at Klipheuwel which costs R42 million to set up and consists of only three wind turbines with the biggest being 60 metres in height and having a blade length of 33 metres. South Africa is regarded as having the potential to become a worldwide wind powerhouse, and with Eskom, South Africa's largest electricity company spending millions on research and setting up wind farms, South Africa's wind power future is looking bright. (www.eia.doe.gov; Access 23 July 2010)

### **3.2.3 Hydro power.**

Hydro power is the process of using kinetic energy from flowing water of a river or potential energy from water dammed up to create electricity. A dam is built where there is a natural lake or a big river in a valley. The dam is used to hold the water and create pressure so that the water can produce more electrical power. There is gravitational potential energy stored in the water and this energy is used to turn generators and create electricity. It is renewable because

the process takes nothing away from the environment and therefore nothing needs to be replenished. The water stays in the water cycle and can keep producing energy endlessly. (www.eia.doe.gov; Access 23 July 2010)

### **Advantages**

- There is no pollution or waste products.
- It is a very reliable energy source.
- Maintenance is low once the dam is built.
- As one is in control of the sluice gates which channels the running water, one can control the flow and intensity as the demand increase or decreases.
- Water can be stored, waiting to be used in peak times.

### **Disadvantages**

- Building a dam is extremely expensive and takes very long.
- Creating a new dam changes the habitat that once laid below where there is now only water.
- The land below the dam is also affected as the flow of water is reduced

### **Hydro power in South Africa**

In South Africa we have many possible hydro electric plant site possibilities. The US department of energy estimates that there about 6000 to 8000 suitable areas for hydro electric generation. The main areas would be in the Eastern Cape and KwaZulu-Natal regions. Many of these plants would be under 100 mega watt, but all these together would ensure a greater sustainable future for South Africa. We do already have a 1000 megawatt Pumped-Storage Facility in the Drakensberg but there are still many opportunities for more small scale plants. (www.eia.doe.gov; Access 23 July 2010)



### **3.2.4 Tidal power.**

Tidal Power is the generation of electrical power through the harnessing of the ebb and flow of the tides. A barrage, which is in fact a huge dam, is built across a river estuary or bay. This barrage has gates in it which allow the water to flow into the barrage with the incoming tide. These gates are then closed when the tide begins to go back out. This water which is now trapped inside the barrage is now called a 'hydrostatic head'. The greater the head the more power can be generated from the outflowing water. There are other gates within the barrage which are now opened; these gates contain hydro-electric generators, very similar to the ones used in Hydropower. These generators are now turned by the outflowing water and power is generated. It is renewable because the tides will continue to ebb and flow, thus there will always be power being generated. The water is not used up, it stays in the water cycle, and can therefore be used over and over again without the need for replenishment. (www.eia.doe.gov; Access 23 July 2010)

#### **Advantages**

- It is very cheap to maintain
- There is no waste or pollution
- Very reliable
- We can predict when tides will be in or out
- The barrage can help to reduce the damage of very high tidal surges or storms on the land

#### **Disadvantages**

- It changes the coastline completely and the estuaries are flooded so any mud flats or habitats that birds or animals live on are destroyed
- Initial building cost is very expensive
- Water is not replenished, it cannot flow away so any dirt or pollution lingers around the coast much longer
- Silt builds up behind the barrage
- Disrupts creatures' migration in the oceans
- Needs a very big piece of sea to be cost effective

### **Tidal power in South Africa**

South Africa is a country with a huge coastline; there are many bays and lagoons which can be used to generate this kind of electrical power. We have many big cities that are located on the coast and would benefit greatly from this kind of power generation. South Africa has only one nuclear power station, and therefore we rely a lot on fossil fuels for our electrical power. Thus we would benefit significantly from a renewable energy source such as tidal power. (www.eia.doe.gov; Access 23 July 2010)

### **3.2.5 Biomass.**

In the developed world biomass is becoming more important for dual applications such as heat and power generation. Biomass is a clean renewable energy resource derived from the waste of various human and natural activities. It excludes organic material which has been transformed by geological processes into substances such as coal or petroleum. (www.eia.doe.gov; Access 23 July 2010)

The energy of biomass is extracted from three distinct sources:

**Wood** is the largest energy source of biomass: contributors include the timber industry, agricultural crops and raw materials from the forest.

**Waste** energy is the second largest source of biomass energy. The main contributors are: municipal solid waste and manufacturing waste.

**Alcohol fuels** is the third largest contributor and is derived mainly from corn.

Any source can be used to fuel biomass energy production. We can use rubbish, animal manure, woodchips, seaweed, corn stalks and other wastes. Biomass is matter usually thought of as garbage. Some of the sources are just lying around: dead trees, left-over crops, woodchips, sawdust from lumber mills, even used tires and livestock manure will do. The waste wood and other sources are gathered in big trucks. The waste is then transported to a biomass plant. Here, the waste is fed into furnaces where it is burned. The heat created is used to boil water and the energy from the steam is used to rotate turbines and generators. Biomass is renewable; we are going to carry on making waste products, plants and trees are going to die and the cycle will continue. This ensures that the sources contributing to biomass are always available.

### **Advantages**

- Biomass can be used for fuels, power production and products that would otherwise be made from fossil fuels.
- It does not add CO<sub>2</sub> to the atmosphere as it absorbs the same amount of carbon in growing as it releases when consumed with fuel.
- It can be used to generate electricity with the same equipment or power plants that are now burning fossil fuels.
- It is sensible to use waste products where we can.
- Biomass fuel generally tends to be cheap.
- Using biomass sources places less demand on the Earth's resources.
- The use of biomass energy has the potential to greatly reduce greenhouse gas emissions.
- The use of biomass can reduce dependence on foreign oil.

(www.eia.doe.gov; Access 23 July 2010)

### **Disadvantages**

- Collecting sufficient quantities of waste can be difficult.
- Burning the fuel creates greenhouse gases, although only a very little.
- Certain materials aren't always available.

## **3.3 Summary of applications of these in South Africa.**

1. Solar power – Huge scope in South Africa because of the good consistent weather and vast open spaces available for solar plants.
2. Wind power – Big scope in South Africa, although not to all parts of the country as Pretoria has a very low wind factor rate but the Cape has a very high wind factor.
3. Hydro power – Relatively big scope, although South Africa doesn't have great rivers in comparison with America and Europe, existing dams used for water supplies can be used.
4. Tidal power – Relatively big scope in South Africa, as the country has a very long coastline and also two different oceans that surround it.
5. Biomass – Small to big scope, as every country has massive amounts of waste, it is not the amount of waste that predicts the viability of it, but is the service of collecting and delivering the waste to the plants, and South Africa is currently experiencing erratic service delivery in large parts of the country.

As one can see from Figure 1. below which depicts the world's status in terms of energy producing plants, the use of coal in the rest of the world is at roughly 27% and in comparison to South Africa's 77%, there is a vast gap

between us and the rest of the world. Although there is a huge gap, this does not necessarily mean that we are that far behind the rest of the world in terms of alternative energy sources, but then again one does not need to look at the rest of the world for answers, one must look at each country as an individual and it seems that South Africa has meets all the criteria for successful wind or solar powered plants, but is this a cheaper method of producing electricity?

In the next chapter we shall investigate the economic impact these alternative sources will have on the South African economy and also the social aspects thereof.

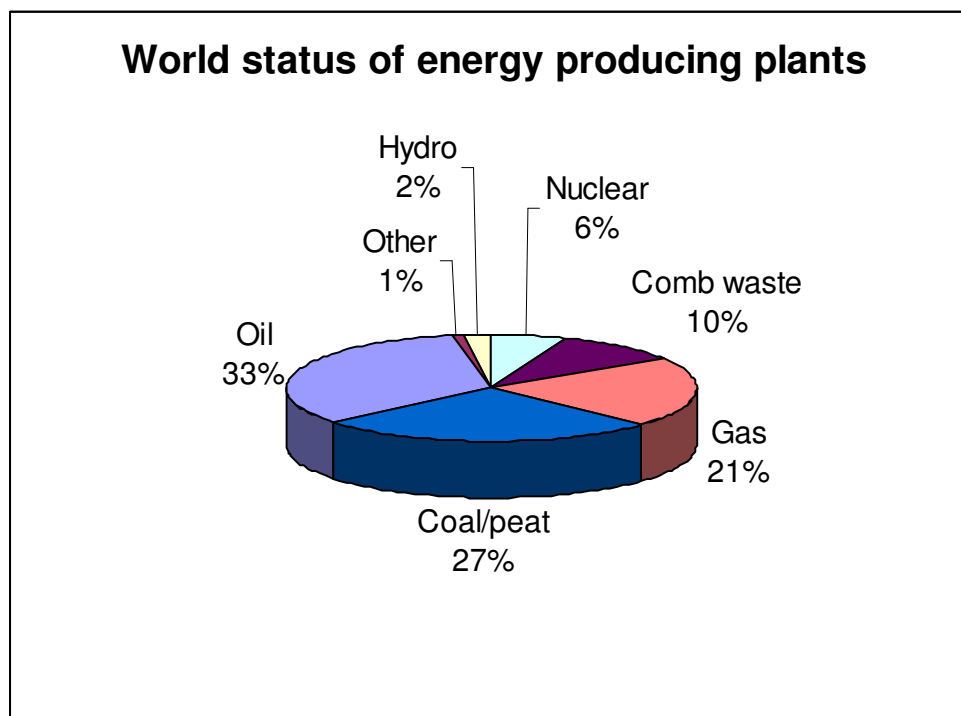


Figure 1. Source – Key world energy statistics 2009

### **3.4 What is Eskom doing about these alternatives.**

Eskom, with the support of government, has applied for a US\$3.75 billion project loan from the World Bank. This forms part of Eskom's long-term

financing of a multi-year investment program aimed at expanding power generation capacity by about 50%, from about 40 000MW, to 80 000MW, in order to ensure security of electricity supply required for economic growth and development.

The proposed loan has three components:

1. US\$ 3.05 billion for the Medupi power station, Africa's first clean coal "supercritical" 4,800 MW power station.
2. US\$ 260 million for investments in renewable energy (100 MW wind and 100 MW concentrated solar power projects).
3. US\$ 485 million for investment in low-carbon energy efficiency components comprising road to rail coal transportation and power plant efficiency improvements, which will be a major step forward towards achieving our long-term low-emission plan.

So gathering from the information in point 2, yes there is something being done by the government, but in relation to point 1, it is a relatively small investment if you compare 260 million to 3.05 billion, which is being spent on the Medupi power station. Are we taking a step backwards in the technology chain, or are we focusing on what is working for South Africa?

(Press release for the energy sector; 12 March 2010)

**Message from the Eskom Chairman – Valli Moosa**

([www.eskom.co.za](http://www.eskom.co.za); access 3 July 2010)

Eskom is giving a world lead in the adoption of cutting-edge technologies. For example, we plan to develop the world's largest solar thermal power plant capable of generating 100MW, subject to technical and commercial feasibility.

**Message from the Eskom Chief Executive – Jacob Maroga**

(www.eskom.co.za; access 3 July 2010)

Renewable energy production will increase to 2% of the generating mix or 1,600MW through biomass, solar, hydro and wind facilities. This includes potential imports of hydro energy.

Our commitment, through the Eskom renewable energy strategy, is to increase the share of renewable energy in Eskom’s energy mix. Our aspiration is to include 1 600MW of renewable energy in the mix by 2025. (www.eskom.co.za; access 3 July 2010)

### **3.5 Summary.**

Gathering from the above:

- There is so much scope for the use of alternative energy sources in South Africa.
- We are not extremely far behind the world in terms of current energy producing plants, but then again we don’t know what the other countries are busy planning.
- Solar and wind power seems to be the most plausible solutions in South Africa.
- The government and eskom are looking into alternatives, but are very cautious, with small investments and small plants going up before billions are being spent.
- Eskom are still relying mainly on coal for future energy needs.

- Eskom are planning to build the largest solar thermal power plant in the world, but whether this will happen we can only wait and see, it would be a huge step in the right direction.

### **3.6 Conclusion.**

We all know the need for switching to alternative, renewable energy sources to alleviate the harmful impact coal and nuclear plants have on the environment, and in turn global warming, but together with this one needs to see whether a country is suited for them, and also most importantly to most politicians and also the end consumers – how much will it cost? South Africa can definitely host all 5 of the renewable sources listed in this chapter, but this is a slow process and one feels that instead of spending another couple of billion rand on a new coal powered station, why not go renewable and look a bit further into the future than saving the current crisis. Alternative energy is definitely the way forward if we look at the next 20 years, so Eskom needs to start taking their plans and making them realities.

### **3.7 Testing of the hypothesis.**

As seen above, there is scope for any one of the following, solar, wind, hydro, tidal power and biomass, in South Africa, and Eskom are aware of them and are slowly starting to put their foot in the door, but when they spend 3.03 billion rand on a new coal fired power station one can't help to think that they are going backward in time, although not really in terms of the rest of the world, but for the sake of where South Africa should be, therefore:

**Yes, there is a scope for alternative energy sources, and yes Eskom are behind where they should be.**



# Chapter 4

## What is the impact Eskom and privatisation have on the South African economy?

### 4.1 Introduction.

When it comes to electricity and especially in a 3<sup>rd</sup> world country where money is an issue for most of the population, the first thing people worry about way above the environmental impacts, the future of our children, the way the landscape would change is the everlasting question..... What is it going to cost me? Cost is a very, if the most important aspect when looking at alternatives to electricity and pretty much any other purchasable good in the world. But in a country where large parts of the population cannot afford the electricity this poses a problem of a different kind. Would the privatisation of the electricity industry whilst increasing supply figures and decreasing power shortages really be beneficial to the population as a whole? Would the lower income bracket of the country also benefit from this or will the high income bracket sit back and smile at an uninterrupted power supply whilst the lower bracket can't afford it? Earlier in 2010 the government approved Eskoms 31.3% tariff increase, this had a detrimental effect on many businesses and homeowners struggling to make profits due to high electricity bills, but is this going to become a regular occurrence or will it be alleviated in the future? All

these questions coincide with the word “cost” and that is what will be investigated in this chapter.

## **4.2 The current cost of electricity in South Africa.**

To establish the cost of electricity in South Africa, one would need a benchmark with which to compare it, the graph below it depicts the cost of electricity in US Cents/KWH or Kilo Watt per Hour before the recent tariff hikes.

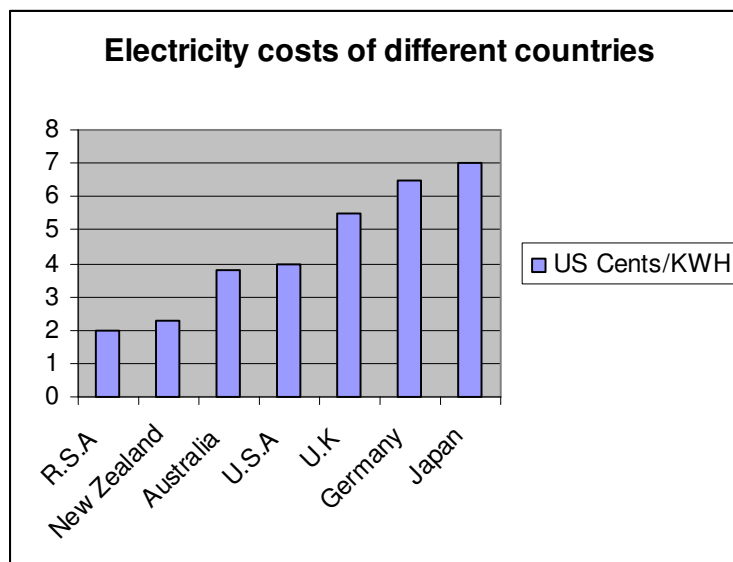


Figure 2. Source – Electricity association UK.

From the above graph one can see that Electricity in South Africa is rather cheap when you compare it to some of the worlds power houses. All of a sudden when looking at where we lie in comparison to the rest of the world, it doesn't look so bad. But for this “cheap” electricity we are paying the price in terms of a lack of service provided.

“Eskom, under public sector management, is one of the cheapest electricity producers in the world. However, government intends to permit private

generation of up to 30 per cent of electricity, particularly through transferring the stake to a black empowerment consortium. Privatisation consultants advising government estimate that the cost of electricity for households will have to be increased by up to 50 per cent. This is against a backdrop where there are already 10 000 electricity cut-offs to poor households in Soweto every month.” (The Sowetan Newspaper; Ravi Naidoo, 27 August 2009) This is where the problem lies, due to bad management for so long we have been paying very little for electricity and now all of a sudden Eskom has increased tariffs by 33% and above that has taken out a loan from the world bank to the value of R3.75 billion, one is forced to ask, where was the planning, why now all of a sudden such a big increase instead of a small increase every year, where was the money going that was suppose to uphold and maintain our electricity supply, and the answer is simple poor planning and now we have to pay the price. So now after the increased tariffs, these are the concerns by NERSA – National Energy Regulators South Africa. ([www.nersa.org.za](http://www.nersa.org.za); access 3 August 2010)

- Impact of excessive electricity price increases on jobs, exports, growth and sustainability not only in our sector but also our customers’ sectors.
- High inflation, especially in administered prices, is hurting jobs and interest rates
- Lack of smoothing after years of keeping us in a fools paradise (supply and cost)
- Impact on our employees and the indigent in our country, some of who are related to our employees who are naturally concerned, as are we, about their plight.
- Inadequate action over distribution losses due to illegal connections (more than R6bn pa?)

- What will happen to security of supply when the 38 large users are back to operating at normal capacity?

They argue that the price increase should be limited to 8% or less (33% more than upper CPIx limit) with no further increase in 2010 but must not exceed 10% nominal in any year. They say that if the annual increase has a larger increase than 8% it will have a negative effect on the following:

- Impact on inflation and subsequent flow through impacts on interest rates, etc
- Impact on economic growth, decent jobs and exports/current account deficit
- Especially given the economic crisis, this could push companies over the edge

### **4.3 The impact of the tariff hikes and loans on the economy.**

NERSA Compiled a study to investigate the options available to Eskom to remedy an expansion program to increase supply and the impact these options could have on the South African economy.

They considered 3 options available to Eskom

1. Business as usual
2. Higher tariffs
3. Funding through debt

Table 2: NERSA Economic Assumptions - Source: Bureau of Economic Research (BER)

	2010/11	2011/12	2012/13	2013/14	2014/15
GDP (%)	2.7	3.7	4.4	4.2	4.1
CPI (%)	5.6	5.4	5.5	5.4	5.4
PPI (%)	7.2	6.7	5.1	5.0	5.0
Rand/USD	8.39	8.65	9.09	9.57	10.11
Rand/Euro	11.82	12.38	13.27	14.09	15.01
Oil USD/Barrel	70.50	75.00	78.50	81.20	82.70
Prime interest rate	10.58	11.25	11.50	12.50	12.50

### **4.3.1. Business as usual.**

According to NERSA there is a general consensus that this is not a viable option in the current situation because demand is very quickly catching up with supply. Seeing as South Africa is the 2<sup>nd</sup> most electricity intensive country in the world after China, this just proves that the availability of electricity is very important to South Africa in order to have a well-functioning economy. We have witnessed how the recent power cuts caused businesses to suffer, a simple example is that in the 1<sup>st</sup> quarter of 2008 the mining industry had to reduce its electricity consumption by 10%, this in turn means that productivity is cut by 10% which in turn means that profits are pretty much cut by the same percentage. To the big corporation this is could amount to billions of rands lost across the board and which leads to less money being pumped into South Africa due to poor exports. And to the small business owner this could have been detrimental to such an extent that they had to close down, and in a growing economy this cannot be the case.

### **4.3.2. Higher tariffs.**

Four scenarios of increased tariffs were investigated and compared in the tables 3 and 4. Table 3 shows the short run impact which covers the direct impact and does not show unlike table 4 the second round impacts which occur when all the players in the economy react to the price shock. The different scenarios were a 15%, 20%, 25% and a 30% increase in the tariff.

Table 3: Short run impact - Source: Bureau of Economic Research (BER)

Indicator (%)	Scenario 1 = 15%	Scenario 2 = 20%	Scenario 3 = 25%	Scenario 4 = 35%
Gross Domestic Product	-0.43	-0.57	-0.71	-1.0
Inflation	0.27	0.35	0.44	0.62
Skilled Employment	-0.92	-1.22	-1.53	-2.14
Unskilled Employment	-1.12	-1.49	-1.86	-2.61
Exports	1.1	1.47	1.84	2.58
Imports	-0.95	-1.26	-1.58	-2.21

Indicator	Scenario 1 = 15%	Scenario 2 = 20%	Scenario 3 = 25%	Scenario 4 = 35%
Gross Domestic Product	-1.5	-2.1	-2.6	-3.6
Inflation	2.5	-3.2	-4.0	5.6
Employment (Total)	-3.3	-4.3	-5.4	-7.6
Current Account Deficit (% of GDP)	-1.2	-1.7	-2.1	-2.9
Exchange rate of the Rand	-3.4	-4.6	-5.7	-8.0

Table 4: Long run impact - Source: Bureau of Economic Research (BER)

To get the full scope of the economy as a whole one has to investigate the impact of the following headings:

- **A. Economic growth**
- **B. Balance of payments**
- **C. Inflation**
- **D. Employment**

#### **4.3.2.A: Economic growth.**

South Africa did not escape the impact of the global recession (recording declines of 6.4% and 3.0% in the first and second quarters of 2009 respectively), but there are signs that the worst is over, the economy grew by 0.9% in the 3<sup>rd</sup> quarter of 2009, following the recovery track of the global economy. According to NERSA higher tariffs will negatively affect consumers of electricity and consequently lower economic activity which won't recover on its own. As seen from table 3 a 35% increase will decrease the Gross Domestic Profit by 1.0 percentage point in the short run and 3.6 percentage points in the long run. In short this means that because electricity is a key input in most production processes, an increase in electricity price will lead to an increase in production cost and in turn will suppress economic activity. (NERSA: 2010)

### **4.3.2.B: Balance of payments.**

The gap between revenue earned from export of goods and services and the import bill is known as South Africa's current account deficit, and in recent years has grown significantly. Current account deficit peaked in the third quarter of 2007 at 8.7% of the Gross Domestic Product, with the source of such a sizeable gap ascribed primarily to a decline in the country's export volumes. Regardless of the magnitude of the price increase, exports are going to increase and imports will decrease. This is on the back of a depreciating currency which is expected to depreciate by 8.0% in the case of a 35% increase and by 5.7% in the case of a 25% increase. (NERSA: 2010)

### **4.3.2.C: Inflation.**

South African inflation, measured by consumer price index (CPI), has tracked international trends and slowed down substantially over the past few months, moving back to the targeted band of 3% to 6% in October 2009, but again breaching the upper band of the target range in December 2009 (recording an increase of 6.3%). Any price increase should be seen against a backdrop of structural problems which are embedded in the South African economy. About 5% of South Africa's inflation is structural and thus does not respond to monetary policy interventions. Any tariff increase of more than 5% will have impact on inflation, with the extent being dependent on the magnitude of the increase. A 35% increase will increase CPI up by 0.62 percentage points in the short run and by 5.6 percentage points in the long run. (NERSA: 2010)

### **4.3.2.D: Employment.**

According to Statistics South Africa: (2010), the number of persons in the labour force decreased by 418 000 (5.6%) from 17.5 million in the second quarter of 2009 to 17.1 million in the third quarter of the same year. The

decrease was broadbased as jobs were lost across all industries except transport, with most of the job losses recorded in manufacturing, which accounted for 150 000 of the job losses, followed by trade (110 0000), construction (60 000) and agriculture (57 000). From the numbers above it is clear that most job losses were recorded in the sectors that are electricity intensive. The proposed electricity price increase of 35% will intensify job losses as production costs increase, pushing down both unskilled and skilled employment by 2.61 and 2.14 percentage points respectively in the short run, and in the long run total employment will go down by 7.6 percentage points. An increase of 25% will push total employment down by 5.4 percentage points in the long run down. In a country that is already struggling with unemployment, this poses a big threat, as any further tariff hikes could cause even more job losses.

### **4.3.3. Funding through debt.**

Funding the expansion program through debt (assuming that the expansion program is funded through debt only) will do less harm to the economy relative to the tariff option. Funding the expansion program through government debt will push the gross domestic product down by about 1.9 percentage points compared to 3.6 percentage points in the long run,

Indicator (%)	Impact
Gross Domestic Product	-1.9
Inflation	1.6
Employment (Total)	-4.8
Current Account Deficit (% of GDP)	-4.0
Exchange rate of the Rand	-4.8

Table 5: The impact of funding through debt - Source: Bureau of Economic Research (BER) assuming a 35% electricity price increase. Inflation increases by 1.6 percentage points compared to 5.6 percentage points in the case of a 35% increase. Job losses, when adopting this option, are far less than when



tariffs are used to fund the expansion program. This is explained by the lower negative impact this approach has on GDP. Employment and GDP are closely linked. As GDP grows one expects job creation to rise. The Current Account Deficit as a percentage of GDP improves on the back of the inflow of foreign capital. The inflow of foreign capital, lower inflation and a healthier economic activity will somewhat cushion the Rand. The Rand appreciates by 4.8% compared to a depreciation of 8.0% in the case of a 35% increase. (NERSA: 2010)

#### **4.3.4 Summary of the options available to Eskom.**

Firstly we can rule out the “business as usual” option, because of the fact that South Africa is so reliant on electricity. Especially when one looks at calls by the President and the minister of finance to grow the economy to address problems such as poverty, jobs and faster economic growth. From the above investigation the one can see that the funding through debt will have a lesser negative effect on the economy than comparing it to increased tariffs. The challenge with the debt option is that in the 2010/11 Budget Speech the Minister of Finance did not announce any additional funding for Eskom’s capital expansion. Therefore this option is also not viable according to NERSA, so therefore the only option still available at the moment is the increasing of tariffs, yes the economy will suffer but this outweighs the dire consequences of not having an adequate electricity supply. In the above investigation, nowhere did NERSA or Eskom holdings limited say anything about a private investor entering the market or even having a look at alternative forms of energy, so for the next couple of years we will have to be satisfied with highly increased tariffs, a lowered GDP and job losses.

## **4.4 The California alternative.**

Discussed above were the 3 options named available by a study by NERSA namely, “business as usual”, higher tariffs and funding through debt, but there is one alternative that a company called Smart Green Prosperity, led by John Joslin that brought to the attention of NERSA about Eskoms proposed 31% tariff increase namely the California alternative. The company argues that they could by implementing the California alternative achieve the following:

- Eskom could reduce the annual expenditures by most customers
- avoid building many new coal-fired power stations
- Increase the use of renewable energy
- cut down millions of tons of CO2 emissions
- highly likely help earn South Africa R millions in 'subsidies' from developed countries
- and save us from having to pay higher prices for electricity made from coal

This was proposed to Eskom as this alternative had a very positive impact on California and subsequently the economy. California, since implementing the alternative has:

- prevented building 24 giant power plants
- saved their customers around ± R600 billion
- Created 1.5 million jobs
- Reduced CO2 emissions by about 7 tons per capita
- Saved 40 000 Gwh per annum

#### **4.4.1 The way the California alternative operates.**

California redefined the tariff calculation formula - “Probably the most important measure was to change the tariff calculation method to include saving energy use for customers and give it the same revenue earning status as selling energy.” (John Joslin for [www.urbansprout.co.za](http://www.urbansprout.co.za) access; 2010) The best way to describe the California alternative is to look at a quote by the former American president Bill Clinton:

“ Here’s the way you pay your electric bill (in America), — the electric company gets permission to charge a certain rate per kilowatt hour, so the more you use, the more you pay, and this is the way it is everywhere. Only California today has the power to disconnect how much you pay from how much you use. The significant thing is you can pay a little more kilowatt hour and pay over time for investments in energy efficiency. They’ve been working on this for 32 years. As a result in California, our largest state, the per capita energy consumption is only 55 percent of the national average”.

“If the utilities do this, then they can put together a plan, go find all the contractors, get all the materials and in effect pay for the cost on your home or in your office building as if they were building a mini power plant there. That is instead of financing it like a consumer loan for one year or a car loan for three, it could be financed over a twenty-year period or longer. The consumer then would have to pay a little more per kilowatt hour but never so much that they wouldn’t still have lower total utility bills because they’d be using so much less.”

“ So suppose they make your home 30% more efficient, they charge you 15% more per kilowatt hour, so your bill goes down 15% and they get the financing they need, collectively it will be much less expensive for them than building a new power plant. They’ll be able to finance and we won’t be contributing any more to climate change.”

#### **4.4.2 Why Eskom is not considering this option .**

This seems like a very viable option considering the benefits California and subsequently the rest of America to follow will enjoy, and not only out of an economic point of view but also the lowered effects on global warming. Electric utilities don't want more efficiency, because this only means lowered sales and in turn lowered revenue. "The more electricity a utility sells, the more money it makes. If it's able to boost electricity demand enough, the utility is allowed to build a new power plant with a guaranteed profit. The only way a typical utility can lose money is if demand drops. So the last thing most utilities want to do is seriously push strategies that save energy..." (J. Romm; Climate Progress : 2010) This is where we look at Eskom as the "bully" again who can basically just manipulate the public and charge whatever they want for electricity otherwise they'll just "put the lights out" this is why there is still a need for privatisation. The California option creates a situation where Eskom will generate money – half by electricity sales and half from electricity savings as savings typically cost one fifth of a new plant and thus can make more from efficiency. (www.urbansprout.co.za : 2010) The problem is however that in California as opposed to South Africa the utilities are mainly private owned, and therefore the need for privatisation is crucial, but also the unification of Eskom, NERSA, the department of energy, public enterprises and the government. Eskom and also the government are enjoying being the only ones in the country that have a say what happens to the price of electricity as they can increase their price and no one really has a say in the matter.

## **4.5 Summary.**

Gathering from the above:

- Eskom, under public sector management, is one of the cheapest electricity producers in the world but at a long term cost
- The tariff increases had detrimental effects on the economy
- Due to poor planning the economy, the public and especially the poor are suffering
- Obtaining a loan costs the country more than it should have done
- California has reached a win-win situation between private utilities, the public and their pockets
- South Africa are still not placing enough emphasis on the long term economic benefits of renewable energy generation

## **4.6 Conclusion.**

The fact that South Africa has electricity that is not very expensive is a bit of a dangerous situation to be in because we should have been paying more for it for many years now, but now it has caught up with us and now Eskom and in effect the public needs to secure loans from the world bank to fund the next phase of electricity generation to sustain us. But this was not the case and now a plan needs to be made, and at the moment Eskom is again looking at short term “Mr. fix it” plans to get us through the next couple of years by building more coal and nuclear power plants, but thereafter once the population and consequently the demand for electricity increases we will be in the same situation again. Yes, small amounts of money is being invested in renewable methods of electricity generation, but this is way less than what we should be looking for in a growing

economy to one day enjoy lowered costs of electricity because lets face it, renewable sources is definitely a better long term prospect. Private investors need to enter the market to bring back the competitiveness into the market, but we need to ensure that these private investors are South African based companies to ensure that the money of the people stays in the country.

## **4.7 Testing of the hypothesis.**

In order for a country to function to its full potential, the service provided by the government need to be up to scratch, and currently this is not the case in South Africa. Loans from the World Bank placed strain on Eskom which subsequently places strain on businesses and the general public. If we look at what happened in California we see the need for private utilities to enter the market to increase the competitiveness and also the sustainable development in terms of energy production.

**Yes, at the moment Eskom is having a negative impact on the economy and a private entity entering the market will have a positive effect on the economy.**

# Chapter 5

## What are the advantages and disadvantages of privatisation of the electricity industry?

### **5.1 Introduction.**

As to any decision in life there are advantages and disadvantages, the decision to privatise is no different but the most difficult part of this exercise is to establish whether it would be advantageous or not to the specific public utility that is to be privatised. Privatisation has an impact on such a wide variety of fields, from economic factors to job losses, from service delivery to skill levels, and not in one instance will the effect be the same. The economic impact is probably the most important aspect when looking at privatising, and as we have seen in the previous chapter in South Africa this is likely to bring a positive economic effect, but this is definitely not the same in all cases. The theory of increased investment and economic growth arising from privatisation was implemented on a wide scale, but had significant negative social outcomes. In Russia, when privatisation occurred it concentrated ownership amongst a minority and led to increased levels of inequality. (Sachs: 2005, Sapir: 2000) Even in developed countries, experiences like the electricity blackout in California showed that privatisation could result not only in blackouts, but that markets often fail even in advanced capitalist economies. (Borenstein: 2002) Studies showed that privatisation was unfair, hurt the poor and workers, and failed to result in improvements in terms of equity (Birdsall and Nellis: 2002) So in all cases it is not the same, and we will investigate in this chapter what the possible advantages and the disadvantages are that could occur when privatisation does happen, what exactly it is, and how it will affect South Africa.

## **5.2 Privatisation defined.**

Privatisation generally means the permanent transfer of the control of a public utility or enterprise to a private owner and takes the form of share sale or recapitalisation of the public enterprise by private investors. The broader meaning can be the temporary transfer of control of public enterprises to the private sector by any of the following means: (Randal S Wood: 2004)

- Asset sales
- Sales of shares
- Liquidation
- Management contracts
- Joint ventures and public private partnerships
- Leases and concessions
- Management and employee buy-outs

Any of the above methods can be applied or used by different countries depending on the countries needs. Privatisation should be in line with government policies of promoting economic growth and development. (Phaahlamohlaka: 2006). Meggison and Netter (2001:321) define privatisation as the deliberate sale by a government of state-owned enterprises (SOE's) or assets to private economic agents. Since it was first introduced in Europe, it has been implemented internationally as an accepted and reliable policy for restructuring. Privatisation is a common tool that is used by markets to allocate resources. Most countries implemented privatisation with hopes that it would boost the profits of their companies. The issue of privatisation is a serious concern for the whole world Phaahlamohlaka: (2006). According to Boycko, Shleifer and Vishny (1996: 309), privatisation of state owned enterprises has swept the world and thousands of state firms all around the world have been privatised.



### **5.3 Why is privatisation necessary.**

The main aims of privatisation according to Phaahlamohlaka: (2006) are to boost and stimulate economic growth by ensuring that privatisation injects competition, improves economic efficiency and sustains the private sector of the economy. According to Bailey (1995: 302) the efficiency of privatised utilities can be calculated by taking the return on capital of the privatised entity and comparing it to that of nationalised entities ie: companies that are still state owned. But this is an extremely difficult task as there are so many factors involved and Bailey names them as differences in risk, lack of monopoly profits, lack of comparable private sector companies, lack of standardised accounting methods and the use of nationalised industries as macroeconomic instruments and social functions. With these problems it is difficult to perfectly compare the economic efficiency of the nationalised industries in relation to private companies, nevertheless privatised companies are deemed to be more competitive and efficient. The reasons why companies and public utilities privatise differs from company to company and country to country, but according to De Fraja; (1991) the main reasons why countries have engaged in privatisation is poor performance of the public enterprises. Countries have learned from other countries that successfully implemented privatisation, and many western countries say the main reasons for privatisation are:

- ❖ The profit motive is a more effective way of reducing inefficiencies in production than any form of monitoring of public management; therefore all other things being equal a private firm will be more efficient than a public one.
- ❖ A more efficient government improves the efficiency of the industry.

## **5.4 The big argument .**

Why is it such a difficult task to decide whether it is better to privatise or not? There is a simple answer for this with complex implications. The reason is because there are two sides to the privatisation saga, on the one side there is the group of people who are for it and on the other side obviously the people that are against it and as no two companies, utilities or countries are the same within each of the group of people the argument arises whether it is a good idea or not.

### **5.4.1 Those in favour of privatisation.**

Those in favour of privatisation are under the perception that private markets are more efficient in delivering goods or services than what the government is due to free market competition. They argue that on privatising it will lower future prices, improve quality, make more choices available, lowered corruption and better service delivery.

#### **The advantages of privatisation.** (Hall. D: 1999)

- **Performance** – Public owned enterprises generally slant more towards being of a bureaucratic nature. A political government in bad cases is only motivated to improve a function when its poor performance becomes politically sensitive.
- **Increased efficiency** – Private companies have more reason to produce better goods and services, so that they can connect with more customers and as a result make more profits. They argue that a public enterprise has too many other areas where they need to focus and will not be on only that service or good.

- **Specialisation** - A private business has the ability to focus all relevant human and financial resources onto specific functions. A state-owned firm does not have the necessary resources to specialise its goods and services as a result of the general products provided to the greatest number of people in the population.
- **Improvements** – The government may put off improving a utility due to political sensitivity, for example if the water supply in South Africa becomes more crucial than that of electricity, the government may rather place most of its efforts and resources into the water, leaving a gap for improvement in the electricity sector.
- **Corruption** – A state run monopoly is more susceptible to corruption, the decisions made are often made to the advantage of the persons making the decision. Especially in South Africa where the state is often in the newspapers for corruption, this would be a huge advantage.
- **Accountability** – Managers of private companies have a responsibility to their owners, peers, and shareholders and also the consumer and can only do financially well if the service/good are up to scratch with what the consumers are expecting, otherwise they can switch to another private company offering a better service. Whereas a public owned company the managers need to keep political stakeholders happy, which could lead to focus in the wrong areas.
- **Goals** – A political government as already stated tends to run a company for political goals rather than economic ones.
- **Capital** – Privately operated companies can sometimes more easily raise investment capital in the financial markets when such local markets exist and are suitably liquid. Capital. Privately held companies can sometimes more easily raise investment capital in the financial markets when such local markets exist and are suitably liquid. While

interest rates for private companies are often higher than for government debt, this can serve as a useful constraint to promote efficient investments by private companies, instead of cross-subsidising them with the overall credit-risk of the country. Investment decisions are then governed by market interest rates. State-owned industries have to compete with demands from other government departments and special interests.

- **Security** – Governments have had the tendency to help out poorly run and suffering businesses financially, most probably because of the sensitivity of job losses, rather than from an economic viewpoint just letting the business fold.
- **Natural monopolies** - The existence of natural monopolies does not mean that these sectors must be state owned. Governments can enact or are armed with anti-trust legislation and bodies to deal with anti-competitive behavior of all companies public or private.
- **Concentration of wealth** - Ownership of and profits from successful enterprises tend to be dispersed and diversified -particularly in voucher privatisation. The availability of more investment vehicles stimulates capital markets and promotes liquidity and job creation.
- **Political influence** - Nationalised industries are prone to interference from politicians for political or populist reasons. Examples include making an industry buy supplies from local producers (when that may be more expensive than buying from abroad), forcing an industry to freeze its prices/fares to satisfy the electorate or control inflation, increasing its staffing to reduce unemployment, or moving its operations to marginal constituencies.

- **Profits** - Corporations exist to generate profits for their shareholders. Private companies make a profit by enticing consumers to buy their products in preference to their competitors.
- **Competition** – in any market this is one of the most beneficial factors, as many private companies are competing against each other, they need to be the best, deliver the best, at the best price, at the right image. Whereas in a public enterprise there is no one to compete with so they always know they will have the consumers no matter how poor their performance is.
- **Short term view** – government may think only in terms of the next election. So they may be unwilling to invest in infrastructure improvements which will benefit the firm in the long run. When a government is under the impression that they will not successfully win the next election they have no need to keep on improving the service.

### **5.4.2 Those not in favour of privatisation.**

There has been strong public resistance to the privatisation worldwide. The extent of this opposition is much greater and more widespread than is usually acknowledged, involving a general rejection of privatisation across the economy that is not limited to utilities or traditional public services: a 2002 survey concluded that ‘privatization remains widely and increasingly unpopular, largely because of the perception that it is fundamentally unfair, both in conception and execution (Birdsall and Nellis 2002:1). In South Africa at the end of August 2005 the 2m-strong Confederation of South African Trade Unions (Cosatu) and Anti-Privatisation Forum (APF) as well as the Soweto Electricity Crisis Committee held a two day general strike to protest against the government's plan to privatise the Electricity Supply Commission (ESKOM).

## **The disadvantages of privatisation.** (Hall. D: 1999)

- **Performance** - A democratically elected government is accountable to the people through a legislature, Congress or Parliament, and is motivated to safeguarding the assets of the nation. The profit motive may be subordinated to social objectives.
- **Increased Market Efficiency** - A public organization tends to produce more of a public good or service according to the Samuelson condition and Marginal Social Benefit curve. This results in a better positive externality for society. On the other hand, a private firm does not provide sufficient public goods and services, because it provides them on the marginal private benefit curve or private demand curve. A private firm provides less in order to make more profit. Therefore the public goods and services are provided more efficiently for society as a whole by a public organization. (Any market is more efficient for society when marginal social benefits equals marginal social costs,  $MSB=MSC$ .)
- **Improvements** – these groups argue that the government is well motivated to improve the state of the services because it contributes to the countries revenue and not that of a private enterprise who will not plough that money back into any onther sectors of the country.
- **Corruption** - Government ministers and civil servants are obligated to uphold the ethical standards of the country and also the integrity is guaranteed through strict codes of conduct. However they admit that the selling process could lack transparency allowing the state bodies to perform in order to maximize their own gains.

- **Accountability** – The public does not have any say in the way private company are operating, whereas they are able to protest against the government in cases of unethical behaviour and mismanagement. This is only true to a certain extent, and definitely not happening in South Africa.
- **Civil liberty** – A democratically elected government is liable to the public through parliament and can intervene when civil liberties are threatened.
- **Goals** – The government may seek to use state companies as instruments to further social goals for the benefit of the nation as a whole.
- **Capital** – Governments can raise money more cheaply than what a private company can. The government can then assist in many sectors of the country and not only those that are not privatised.
- **Cuts to essential services** – Where a government enterprise seeks to provide an equal service to the rich and the poor, a private company is only concerned with whoever can pay the money and in most if not all cases will target the wealthier areas of the country to maximise profits forgetting about the obligation to look after poor who cant afford a good service.
- **Natural monopolies** – Privatisation will not result in true competition if a natural monopoly exists.
- **Concentration of wealth** – Profits from successful enterprise enter the hands of those shareholders of the company, whereas the government will be able to use the profits to assist the whole country with better services, currently this is not the case in South Africa as the profits disappear and are thus not used for the common good of the country.
- **Political influence** – Governments will more easily exert pressure on a state owned enterprise and assist in the rectification of that enterprise.

- **Downsizing** - Private companies often face a conflict between profitability and service levels, and could over-react to short-term events. A state-owned company might have a longer-term view, and thus be less likely to cut back on maintenance or staff costs, training etc, to stem short term losses. Many private companies have downsized while making record profits.
- **Job losses** – There is an extra financial burden on privatised companies to maximize profits and also efficiency without government assistance, so this creates low margins of inefficiency, and therefore workforces are kept to an absolute minimum able to carry out the necessary work, whereas a government will seek ways to maximize efficiency whilst maintaining all the workers so that the money paid out has a roll on effect on the working class.
- **Skill levels** – Skill levels will diminish as a public enterprise will rather cut their profits and help educate and train more workers, whereas a private company only vests their interest in their own workforce.

## **5.5 Public-Private partnerships (PPP's).**

A public-private partnership (PPP) is a form of PPI. The use of the term PPPs in the South African context has a specific meaning and usually refers to partnerships that have been registered with, and approved by National Treasury. A PPP is defined as "a contractual arrangement between a public sector institution and a private party in which the private party performs an institutional function or uses state assets and assumes substantial financial, technical and operational risk in the design, financing, building and or operation of the project, in return for a benefit". Eichler: (2001) This definition is important because it provides a basis to distinguish PPPs from other types of interaction between the public and private sectors. Where the association results in a project that does not transfer substantial financial, technical and operational



risks, then it cannot be seen as a PPP. These kinds of partnerships do not require the participation and facilitation of National Treasury and should be regarded as public-private interactions, and not PPPs. An example of this would be a public sector institution that has an operational budget of R550 million and commissions the services of a private sector company to provide it with security services at a cost of R1.5 million per annum. As the risks associated with this contract are not significantly substantial, this project would be viewed as an outsourcing type of a PPI and not a PPP. According to National Treasury, each PPP should be conceptualised, planned and executed as a project, in accordance with the steps outlined in the PPP manual, to ensure full compliance (National treasury: 2004). This is not a simple process. Depending on the experience, insight, goodwill, competence and skill of the negotiating partners, this process can take a period of between twenty four to thirty-six months. (Marek: 2003)

### **Advantages of PPP's:**

The basic advantages of public-private partnership projects include (Tetřevová, 2006):

- More efficient and higher quality process of construction and operation of the infrastructure and provision of required services by entities of the private sector, compared with the public sector entities; what is essential from this point of view is ensuring a project respecting the principles of economy and usefulness (utility), where one of the important things is the fact that usually the projected costs are not exceeded and the given deadlines are met; also, we cannot forget the importance of the innovational efforts of the private sector contributing to increasing the quality and efficiency.

- They solve the problem of limited disposable sources of the public sector, where the capital power of the private sector entities can be sensibly used for implementation of the projects whose execution would not be possible without their partnership, and thus they also enable a faster development of the infrastructure; at the same time, the faster implementation of projects leads to lower cost rates of the projects resulting from the effects of the time value of money or the inflation pressure.
- More benefits and satisfaction for the citizens resulting from utilisation of the know-how of private companies in applicable operational areas and from their distinct motivation formed by the possibility of long-term income while meeting all contractual terms and conditions concerning the quality of the provided services, while the required standard is continuously evaluated and controlled by the public sector.
- Strengthening the public administration resulting from entrance of new purposively and economically thinking partners into provision of public services and meeting public interests and needs, shortening the process of decision-making and diminishing the rate of bureaucracy.
- From the macro-economic point of view, we can find an important advantage in the fact that when this type of project is being applied, a substantial part of the risk is transferred to the private entity, and so no state securities are required, which enables decrease in the deficit and debt of the public budgets recorded according to the Maastricht criteria. (Tetřevová, 2006)

### **Disadvantages of PPP's:**

The basic disadvantages of public-private partnership projects include (Tetřevová, 2006):

- The PPP Projects prefer the economic aspects of the project to the social, environmental or other aspects.
- Slow preparation of individual PPP Projects, which may take up to two years if the preparation of the project is to be of high standard.
- Demandingness as for ensuring transparent relationships, whether while selecting a partner, defining the terms and conditions, competences and responsibilities or while concluding contracts itself, which is also escalated by the long-term and complicated character of the concluded contracts.
- Considerably negative financial impacts in the case the partnership has to be repudiated.
- Possible transfer of risks from the private sector to the public sector, e.g. risk of bankruptcy.
- Insufficient experience of the partners, particularly of the public sector while contracting such projects, where we can notice an informational asymmetry operating in favour of private companies, which naturally use their endeavour and potential to negotiate better conditions for themselves.
- From the macro-economic point of view, we can see a substantial disadvantage in the fact that as a consequence of the long-term character of these projects, the mandatory expenses grow and the hidden debt arises, and this debt will exist for a lot of years, and thus it can affect negatively the fighting power of the future governments and burden significantly the future generations.

## **5.7 An eskom mindshift.**

On 11 August 2010, Eskom made a huge shift towards semi-privatisation of the industry.

An article on [www.reuters.co.za](http://www.reuters.co.za)

*South Africa's power utility Eskom expects to almost double the level of generating capacity that its grid will get from independent power producers (IPPs) by next March, a senior official said on Wednesday.*

*Eskom, which is battling to raise some of the 385 billion rand needed to pay for new capacity in Africa's biggest economy, is keen to have private players enter the market to boost supply and cut its own cost of building plants.*

*"Eskom has signed up around 215 megawatts of generation capacity from IPPs in the last few months, and we anticipate to get that up to 400 MW, essentially doubling it, by March 2011," Kannan Lakmeharan, divisional executive system operations and planning at Eskom, told Reuters.*

*Lakmeharan, who earlier briefed lawmakers at parliament, said, however, the the doubling of capacity depended on IPP board approval for two new contracts.*

*"Two contracts have been sent to the IPPs for their final approval after negotiations were completed, and we are waiting for responses. We are waiting for their boards to approve them," he said.*

*Lakmeharan did not want to divulge the names of the companies involved, except to say they were local. Eskom has already signed IPP agreements with petrochemical company Sasol and independent producer Ipsa, he said.*

*Local media reported in June that Eskom has also signed a contract with paper group Sappi.*

*Business and Eskom agree there is potential for more co-generation projects capable of producing between 1,000 and 3,000 MW, although some appear to be self-generation options rather than co-generation.*

*"There are some options where companies have own generation ability, such as discard coal which they could convert into electricity, like Anglo American and Xstrata have indicated publicly," Lakmeharan said. (Reuters:2010)*

This is such a huge step for Eskom, as they have seen the light and are now seeing privatisation as a positive and efficient way of solving the energy crisis, there is not much research on this at the moment. Semi privatisation would be the best possible form of privatisation for Eskom at the moment as it would combine the advantages of both public and private utilities whilst eliminating the disadvantages. The structure would have to be closely monitored and changed to adapt the situation.

## **5.8 Summary.**

- Privatisation generally means the permanent transfer of the control of a public utility or enterprise to a private owner and takes the form of share sale or recapitalisation of the public enterprise by private investors.
- Privatisation does not always have a positive effect on the economy or social matters.
- It is extremely difficult to foresee the future successes or failures of privatisation on a specific utility/service, because of the complex nature and many different factors involved.
- The main aims of privatisation are to boost and stimulate economic growth by ensuring that privatisation injects competition, improves economic efficiency and sustains the private sector of the economy.

- Competition is the biggest knock on effect of privatisation, as private enterprises are fixed on delivering a good quality cost effective service to ensure good profits and also customer satisfaction, whereas a public enterprise does not have all this motivation.
- Eskom makes a big turn and opens up the industry for semi privatisation, we will see in the future whether this is actually a way forward for Eskom.

## **5.9 Conclusion.**

Privatisation is one of those market factors that are extremely difficult to measure, making it a big grey area – there is no right or wrong answer to whether a Country or company should privatise and is very case sensitive. Public enterprises can and do work all around the world, but this is all good and well when it comes to a government that still operates on the basis of honesty and integrity, but once you have a government that is corrupt and fending for themselves all of these disadvantages seem rather insolent. Privatisation of the electricity industry is definitely an option for Eskom as the positives outweigh the negatives. This study took an interesting turn when Eskom announced that they would introduce IPP's (Independent power producers) to the industry. Semi privatisation is a step in the right direction for Eskom whilst also limiting the risk one would have with full privatisation, but yet again Eskom realised this once they were already in trouble and needed to find ways to alleviate the burden of the loan from the world bank. So hopefully the private companies can improve on current service delivery and restore the faith in a government which is able to look past its own faults and do what is best for the country. The future impact of this shift would be very interesting in a couple of years time.

## **5.10 Testing of the hypothesis.**

As seen it is extremely difficult to foresee the future benefits and negatives of privatisation as every country, government and public have their own problems and issues and there is not one conclusive solution to solve these problems. But when one looks at the present government and problems in South Africa the positives outweigh the negatives, so faith will be restored in the government and the country, jobs can be created and yet again one can see the positive impact competition will have on factors like price, effectiveness, global warming, the economy and the consumers pockets. One can assume that because of the fact that Eskom has now introduced the need for IPPs into the market that they have within themselves realised that this is an important step and that the advantages outweigh the disadvantages.

**Yes the advantages outweigh the disadvantages.**

# Chapter 6

## Conclusion

### **6.1 Topic background.**

Eskom, established in 1923 by the government of R.S.A is South-Africa's public utility for the provision of electricity to the public, and also the largest producer of electricity in Africa, supplying 60% of the African continents electricity and is ranked as the 10<sup>th</sup> largest power company in the world according to Eskom (10 February 2010)

But in the same breath it has not been living up to its reputation of delivering electricity, but rather made the public used to terms such as “load-shedding”, “blackouts” and “generators”. Millions of peoples lives have been disrupted by the power shortage at one stage or another, hundreds of businesses could not continue with normal business routines, but is something being done about this, or will this be what we can expect in the future? An article on [www.inthenews.co.za](http://www.inthenews.co.za) website posted on the 15<sup>th</sup> of July 2008 claims that it was the in-ability of the government to act when they were told there was going to be a problem, and only once the problem arose – now it was time to do some crisis management and do something about the situation.

There are currently 26 power stations supplying South-Africa with electricity in the form of nuclear, coal fired, hydro-electric, windfarms, and open cycle gas turbines, currently this is not supplying sufficient electricity, whether it may be because of bad management of each of the plants, bad management of Eskom as a whole or purely not enough power plants to supply the needed amounts of electricity to an emerging 3<sup>rd</sup> world country.



## **6.2 Statement of main problem.**

As Eskom is currently the main electricity supplier in South-Africa, they are pretty much entitled to do what they want, and also in a large way are able to bully the government and also consumers, by increasing tariffs to counter their weak performance in the creation of electricity. Eskom is currently not “delivering the goods” within a reasonable cost to the consumer and there have been talks in the past 3 years of an external power supplier entering the South-African market, possibly to increase the competitiveness in the South-African market but many people are against this, and many are for this, and this was investigated whether it could be a wise move or not with regards to the consumers pockets, the South-African economy as a whole and where electricity provision in South-Africa is headed.

## **Is privatisation of the electricity industry in South Africa a solution to the electricity crisis of the country?**

### **6.3 Summary.**

In order to reach a conclusion whether privatisation is a solution to the electricity crisis in South Africa, four sub problems had to be investigated separately, following will be an outline of what was investigated under each sub problem:

#### **6.3.1 Was Eskom’s planning inadequate?**

Under this problem a closer look was taken at the years before the crisis started occurring, to investigate whether it was due to inadequate planning or due to unforeseen circumstances beyond the control of Eskom or the government. Topics that were discussed in detail included

## **2.2 The power shortage: a short overview**

Investigated the years running up to where they are now, one could see that South Africa has for many years had more than enough electricity to sustain its economy, but this slowly started decreasing.

## **2.3 Governments role**

A look was taken to see whether the government was part of the problem, the warnings were all there but they did not do anything about it.

## **2.4 The loss and lack of skilled personnel**

All of a sudden Eskom found themselves with a skills shortage, and also the professional people that had the experience and knowledge were being retrenched or moved to better companies abroad or a different industry all together.

## **2.5 Coal, coal suppliers and coal contracts**

All of a sudden there was now a coal shortage, and in a country which relies mainly on coal for electricity production, and which has enough coal to supply the national grid, it just left some unanswered questions.

## **6.3.2 Is there a future for alternative energy sources and if so why has Eskom not gone that route?**

This problem took the research to a global level to see where Eskom is headed with its alternative electricity production, whether it was up to standard or not, topics discussed under this problem were:

### **3.2 Alternative energy solutions**

The main sustainable energy production methods used around the world were discussed in detail namely:

- Solar power

- Wind power
- Hydro power
- Tidal power
- Biomass

The effectiveness and whether these were options available to Eskom were discussed in 3.3. And also what Eskom are currently doing in 3.4.

### **6.3.3 What is the impact Eskom and privatisation have on the South African economy.**

One of the most important aspects of privatisation of any company if not the most, is the question of cost. This includes cost to the consumer, loss of profits to the utility, and also profits to be gained from entering into a privatisation deal. Investigated in this chapter was all about the economic side electricity production in South Africa.

#### **4.2 The current cost of electricity in South Africa**

It was noticed that in comparison with the rest of the world South Africa's cost of electricity is quite cheap. But this came at a price as Eskom kept the nation in a "fools paradise" because the cheap electricity was not sufficient to sustain the industry through tough times and also to advance the production in a growing economy and population.

#### **4.3 The impact of the tariff hikes and loans on the economy**

A study compiled by NERSA laid down three possible options for Eskom in the future to recover the crisis namely: Funding through debt, Higher tariffs and Business as usual – where the best option came as to increase the tariffs, although Eskom has obtained a loan from the World Bank, so both options in moderation were chosen by Eskom.

#### **4.4 The California alternative**

California successfully implemented a strategy to curb the electricity crisis they experienced, The significant thing about this strategy is that you pay a little more per kilowatt hour and pay over time for investments in energy efficiency so in theory it is a win win situation for the state and the consumer. South Africa has not gone for this option because it just means that the government and Eskom will make less money because companies are utilising better ways of producing electricity, which in the long run means lowered profits.

### **6.3.4 What are the advantages and disadvantages of privatisation of the electricity industry in South Africa.**

#### **5.2 Privatisation defined**

What exactly privatisation is, is defined here and also they ways in which this could occur.

#### **5.3 Why is privatisation necessary?**

According to Phaahlmohlaka: (2006) the main aims of privatisation is to boost and stimulate economic growth by ensuring that privatisation injects competition, improves economic efficiency and sustains the private sector of the economy.

#### **5.4 The big argument**

As seen in this chapter there are two main groups – one that opposes privatisation and the other who is for it. The reasons for both are discussed.

### **5.5 Public-private partnerships**

Also known as a PPP it is basically an agreement between both private and public companies, so it incorporates the best of both worlds. Discussed is the advantages and disadvantages thereof.

### **5.6 An Eskom mind shift**

Eskom on 11 August 2010 made a huge shift towards privatisation or at least partial privatisation by claiming to want to double the level of its generating capacity by allowing IPPs Independent power producers to enter the market. At the time of this study there was not enough information available to investigate this matter but this will be visible in the years to follow. All the evidence in this study shows that it would be a positive change for the industry but only time will tell.

## **6.4 Conclusion.**

In order to find out whether privatisation is a solution to the electricity crisis in South Africa each of the sub problems will be investigated on its own to deduce conclusive evidence to make a final decision.

In answering the main problem each of the four sub problems will be investigated in conjunction with the main problem.

### **6.4.1 Was Eskoms planning inadequate?**

The problem was not addressed when it should have been, although all the warning signs were there, they were not proactive enough to look into the future. Insufficient training and the loss of experienced and skilled personal is not a productive way of securing a good future. Top level management is not up to standards and BEE contracts has led to higher costs in the production of energy.

The assumptions of the hypothesis were in deed correct, so:

### **Yes, Eskoms planning was inadequate.**

Based on the findings in this sub problem – privatisation of the industry is definitely an option for Eskom as this injects competition into the market which would cause the private entities to manage their share in the market more carefully so as to maximise profits and also market share. The problem with state owned enterprises is that they are the only players in the market and only compete with themselves, so there is little incentive to “be the best”, “provide the best service”, “be the most cost effective”, they are able to bully the consumers because the consumers have nowhere else to turn to for their electricity but Eskom. Upon a private entity entering the company at fault will have to sharpen up and be more proactive with regards to the future of the company so in turn this will lead to more carefull planning and in conjunction with Eskoms bad planning in the last 8 years or so this proves that privatisation can lead to better planning.

### **6.4.2 Is there a future for alternative energy sources and if so why has Eskom not gone that route?**

As seen in this chapter, there is scope for any one of the following, solar, wind, hydro, tidal power and biomass, in South Africa, and Eskom are aware of them and are slowly starting to put their foot in the door, but when they spend 3.03 billion rand on a new coal fired power station one cant help to think that they

are going backward in time, although not really in terms of the rest of the world, but for the sake of where South Africa should be, therefore:

**Yes, there is a scope for alternative energy sources, and yes Eskom are behind where they should be.**

South Africa has abundant resources to utilise in the production of alternative energy resources so firstly there is definitely scope for these alternatives and it would definitely have a positive effect on global warming, the pocket of the consumer, and a sustainable future in electricity production. Eskom, a couple of years ago had all the resources, professional staff and money to ensure a positive future, but in conjunction with the first sub problem this was badly managed and in turn led to lag period in the facilitation of these alternative solutions so therefore yes Eskom is behind where they should be at the moment. If a private entity had to enter the market and could guarantee reasonable tariffs, and proper supply of sustainable energy the consumer would leap at this opportunity as it would be more cost effective in the long run and at the same time would be helping the environment. So looking at this problem it would again definitely be an option to South Africa to privatise the electricity industry.

### **6.4.3 What is the impact Eskom and privatisation have on the South African economy.**

In order for a country to function to its full potential, the service provided by the government need to be up to scratch, and currently this is not the case in South Africa. Loans from the World Bank placed strain on Eskom which

subsequently places strain on businesses and the general public. If we look at what happened in California we see the need for private utilities to enter the market to increase the competitiveness and also the sustainable development in terms of energy production.

**Yes, at the moment Eskom is having a negative impact on the economy and a private entity entering the market will have a positive effect on the economy.**

Again we look at a private entity entering the market as direct competition to Eskom which subsequently leads to a situation where the different role players in the market would have to ensure they keep their clients, and the easiest way to ensure this is to lower the cost on the consumers. The economy of a country is so closely linked to the services provided by the government that it has to be said that if the price of services go up, so would the price of the product and conversely workforces should have to be cut for those producers just to be able to manufacture goods at a competitive price so in turn one creates a situation where jobs are cut which in turn places strain on the government and also causes the public to lose faith in the government and in turn the country and then finally has a negative effect on the economy. Whereas a private entity entering the market would create jobs, ease consumer spending and restore faith in the government. So yet again privatisation is definitely an option to South Africa.



## **6.4.4 What are the advantages and disadvantages of privatisation of the electricity industry?**

As seen it is extremely difficult to foresee the future benefits and negatives of privatisation as every country, government and public have their own problems and issues and there is not one conclusive solution to solve these problems. But when one looks at the present government and problems in South Africa the positives outweigh the negatives, so faith will be restored in the government and the country, jobs can be created and yet again one can see the positive impact competition will have on factors like price, effectiveness, global warming, the economy and the consumers pockets. One can assume that because of the fact that Eskom has now introduced the need for IPPs into the market that they have within themselves realised that this is an important step and that the advantages outweigh the disadvantages.

**Yes, the advantages outweigh the disadvantages.**

The findings in this chapter outline why it might be better to privatise, although it differs from country to country and company to company it must be said that when one considers privatisation to overcome a problem or crisis caused by the existing company, where a utility is unable to give their clients what they want, privatisation is definitely an option.

## **6.5 Testing of the main problem.**

1. Yes, Eskoms planning was inadequate.
2. Yes, there is a scope for alternative energy sources, and yes Eskom are behind where they should be.
3. Yes, at the moment Eskom is having a negative impact on the economy and a private entity entering the market will have a positive effect on the economy.
4. Yes the advantages outweigh the disadvantages.

**The successful testing of all of the sub problems proves that:**

**Privatisation of the electricity industry in South Africa will most definitely be a solution to the electricity crisis of the country.**

## **6.6 Suggestions for further research.**

- **The future impact of the PPPs formed by Eskom** – as seen in chapter 5 it is extremely difficult to foresee the future influences of privatisation, so studies can be conducted every year from 2011 until the end of time.
- **The future impact of alternative energy sources in South Africa** – an independent future study can be conducted to investigate whether alternative solutions had a positive effect on consumers pockets and also the economy as a whole.
- **The management of Eskom** – now that IPPs are entering the market is the structure and management going to take a turn and lead to better management of the public's money.
- **The impact of competition** – Is the fact that there is now competition in the market really a positive factor or are there severe negatives involved?

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