

Theme: The dilemma facing South African electricity supply system; a critical comment. Graduation at Walter Sisulu University.

Guest Speaker : Mr Sobhuza Tshobeni

Graduation Venue : Christian Centre, Abbotsford, East London

Graduating Faculty : Science, Engineering and Technology

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- Chancellor of WSU, Ambassador Sheila Sisulu
- Vice-Chancellor Professor Rob Midgley and WSU staff
- Dignitaries from all spheres of government
- Distinguished guests and community leaders
- Members of the media
- Parents, guardians and families of graduants
- Members of the Student Representative Council
- Students and graduants

I greet you all in this great day of graduation in the Faculty of Science, Engineering and Technology of the Walter Sisulu University here in East London.

Madam Chancellor I am humbled by the invite to come and address these graduants today knowing well that the role of a guest speaker is to congratulate the graduants, share advice, experiences and values.

My task here today couldn't be easier as it also dawned on me that I was in the same position as these graduates 17 years ago at the former Eastern Cape Technikon in Butterworth.

First and foremost I would like to congratulate the graduates, as today is about them. I would also like to congratulate the parents, guardians and families because without your support and prayers these graduates would not be sitting here today. It is also fitting to congratulate the lecturers and the support staff of this University for the patience, understanding and for holding the hands of these graduates during their learning and development phases at this University. We are all here to witness the showcasing of the main product of this University, i.e. the graduates.

To the graduates I wish I could say you have reached your end goal and from now things are going to be smooth; but unfortunately this is the beginning of a life long journey. There are challenges that you are still going to face and my talk today will highlight a few that I think you need to be aware of as that may assist you to plan better for your own journeys.

I must also emphasise that there are also good times and plenty of them ahead of you. It all depends on the choices you make.

Madam Chancellor, in my topic this morning I will comment on the dilemma we face regarding the South African electricity supply system.

Remembering the words of author Munia Khan who said:

“Electricity is like love sometimes; it may shock you anytime, yet you cannot live without it.”

This dilemma presents itself when the country is faced with many challenges that I think could be turned into opportunities if as a society we approached things differently. South Africa needs a stable electricity supply as it is one of the key ingredients to investor confidence and job creation. In the same token an expanded electricity network is what will sustain the much needed electrification programme in rural areas which has brought dignity to the masses of this country.

South Africa is well endowed with the coal reserves, which is the main energy source we use to generate electricity. Statistics South Africa estimates that the coal reserves are in the order of more than 100 years. Therefore we will have these coal plants for some time to come. I am saying this fully aware that there is growing industry of renewable energy in South Africa which has a huge role to play side by side all other technologies.

I respect those who see renewable energy as the only form of electricity generation that we should use, but let's put activism aside and face the reality that South Africa needs all the available energy sources that are cost-effective to generate electricity.

We must not lose sight of the fact that cheaper and good quality of electricity supply makes the country more competitive and it becomes a choice for electricity intensive industries. However we are not in good space as the Global Competitiveness Report of 2015-2016 ranks South Africa number 116 out of 140 countries on quality of electricity supply. This is against number 72 which we were in 2003. Therefore something went very wrong in the last 13 years on electricity supply in South Africa. Some may think these reports are done to vilify the developing world; well I don't think so as South Africa (for example) is ranked number 8 in the soundness of our banking systems in the same report.

Another factor that is working against us is that this shortage of additional electricity generation capacity resulted in the use of diesel generators by Eskom at Atlantis and Mossel Bay in the Western Cape for base load whereas these were initially meant for peak demand.

The fuel costs of these plants are exorbitant and according to Eskom 2015 annual report they are in the order of just less than R10 billion for 2014/15 financial year. No wonder why we have ever increasing electricity prices.

Going forward it is also important to note that most of our power stations were built between the 1960s and 80s. Some of them will reach their end of life in the next decade or two and will have to be decommissioned. Therefore idea of adding nuclear energy as part of the electricity generation fleet makes sense. As a practitioner in the nuclear industry, I think it is important to note that as a country there is enough expertise and systems to run safe nuclear plants as this has been the case since the commissioning of Koeberg Power Station in the mid-1980s.

However there are a couple of variables that I think are critical when implementing nuclear energy. These are:

- 1) Advanced electricity demand growth estimation and modelling studies for the next few decades are a must. The catch here is that if electricity demand growth is underestimated, we will be back to square one where rolling blackouts will again be the order of the day. On the other hand if the electricity demand growth is overestimated, that will result in some of these nuclear plants being white elephants. The financial lenders of such mega-structures will still need to be paid whether the plants are idle or not.
- 2) Sound cost-benefit analysis must be undertaken if not already to ensure that when all is said and done this country is not left with

debt that it cannot recover from. This relates to the number of reactor units to be put in commission.

- 3) The other key ingredients that are pre-requisites to any successful mega-project include correct political negotiation process, technical requirements, contractual and legal instruments to ensure that manufacturers and all the project implementation stakeholders put together these projects with South Africa being the key beneficiary. This cannot be drive-through purchase agreements.
- 4) South African businesses and citizens must benefit in the construction of these nuclear power plants. Projects like these must go on a long way in creating much needed jobs in this country. The idea that labour will be imported from other parts of the world is a non-starter and must not be accepted by the citizens of this country.

If the authorities fail to use the correct strategies, we will all pay the school fees and that will be an unbearable pain that will be with us as a society for a very long time.

Madam Chancellor the other component of electricity supply I think need serious attention is the electricity distribution sector. Unfortunately doing nothing about it is just disastrous. This sector of electricity supply has all the hallmark problems.

Firstly the problems in electricity distribution are structural and solutions may go as far as a need for legislative reforms. In our country electricity is distributed by both Eskom and municipalities with varying tariffs and service levels received by electricity users.

In the mid-2000s, government undertook to restructure this industry into regional electricity distributors (REDs) that were to be independent of Eskom and municipalities, though they were to purchase electricity from Eskom and distribute to all customers in specific geographical areas.

The idea was to clean-up the different tariffs charged by Eskom and various municipalities and to ensure sustained investment and maintenance of this infrastructure. The aim was also to pool the human and systemic resources to ensure that each regional electricity distributor has got all the requisite skills and systems to run a modern electricity distribution business.

When government introduced this restructuring in the early 2000s, this was encouraging though there were many items needing very tough negotiation processes by the key stakeholders, but unfortunately deductive methods and top down approaches were used and they never worked. This resulted in the whole programme being deemed unworkable and was abandoned by the Cabinet in 2010.

One would have hoped that if the REDs model was unworkable, an improved version would be developed in order to deal with these challenges; but nothing tangible has been reported since, and this is more than 5 years ago. The other compounding factor is that municipalities were obviously hoping that the REDs would be a silver bullet for the maintenance backlog of electricity infrastructure, and published reports paint a dire picture.

Madam Chancellor these reports including those from the Department of Energy indicate some of not so good news, as they indicate that:

- 1) most of the electricity assets in municipalities are older than 40 years and at least 50% of these networks require immediate attention and major refurbishment or outright replacement.
- 2) municipalities are hindered not only by insufficient funds for refurbishment, but also by the fact that many of their sub-stations are almost 100% loaded.
- 3) electricity distribution maintenance backlog is in the order of R35 billion, increasing at about R4 billion per annum for both Eskom and municipalities. These are just replacement costs and if you are a project manager you will know that escalation and labour costs can easily double such estimates.
- 4) some municipalities are constrained by supply chain processes that have a turn-around time of up to 18 months. Then if any

project have to wait for such long then nothing much will be achieved.

It is very clear that a lot need to be done fast otherwise South Africa will just become another failed African state. The idea of municipalities running complex infrastructure on their own is not sustainable. It is about time legislative regime is reviewed to allow for provincial infrastructure agencies to be setup to run the electricity, water, roads and sewage systems on behalf of our municipalities. The world now has realised that activities such as operational and low level maintenance can be done at local level. However activities like planning, technology strategy, asset creation, and specialised maintenance need to be pooled at a higher level, in our instance at a provincial level at least. This is to ensure that there is optimal use of scarce engineering and scientific skills in our country which on its own is a topic for another day.

It is not my intention to bring people down but we need to talk about our problems whenever congregate, as the words of author and philosopher Edmund Burke, remind us that:

“Nobody made a greater mistake than he who did nothing because he could do only a little.”

The message therefore from me as the guest speaker in this great occasion is that as South Africans we need to keep our eyes on the things that matter as it seems we get side-tracked easily. This country can achieve greatness and has huge potential as we have some of the major achievements that include (for example) the negotiated political settlement of the early 1990s and the recent 2010 Fifa World Cup. These great achievements attest to the capabilities of the people of this country and they cannot be taken away from us. People from all over the world are always interested in what is happening to this great nation of the late Nelson Mandela.

Madam Chancellor, allow me speak directly to these graduants, to reflect on some of lessons I've learnt over the years in my own journey.

As graduants; today is a result of your hard-work and discipline that have satisfied this University that you meet the requirements of your respective qualifications. What this tells you is that if you put your mind into something, you can achieve it no matter what the odds are against you. As graduants you will be joining the great club called "the country's workforce." Perhaps some are already there and I say welcome to the club!

I also wish to indicate that your future is to greater extent dependant on you. You can no longer blame your parents or guardians.

This reminds me the words of author J.K. Rowling who said that:

“There is an expiry date on blaming your parents for steering you in the wrong direction; the moment you are old enough to take the wheel, responsibility lies with you.”

It is very important to realise that I represent some of those who walked this path before you and I am proud to say so far so good. You must also realise that there is no magic and no short-cuts, just opportunities that present themselves when working hard-work and making correct choices and very tough ones sometimes. Our golfing legend Gary Player put it well when he said:

“The harder you work, the luckier you get”

To help you in your transition it is important for each and every one of you graduating today to note some of these pointers about the environment you are about to venture into and what your approach should be:

- 1) The transition from being a student to corporate life is a phase that involves a lot of change and pain. Always understand that it is through such change that opportunities present themselves. You must be patient and persevere; and understand it's you who must change, as the world won't.

- 2) In the workplace you are going to meet a wide range of personalities and age groups and even different nationalities, with some even older than your parents. Respect other people's culture and present yourself the way you are. Always remember that there is nothing wrong with you and present the best of you can be.
- 3) Always be solutions driven and do not think like a victim as negative energy won't take you anywhere. Remember that this world needs more ideas to solve problems. Be confident and put them forward like Mr Nkosana Makate who recently won a case against Vodacom at the Constitutional Court last month. This illustrates that there are no small ideas as something that you think is trivial may solve a major problem and make you lots of money. I must add that you must always protect your ideas and don't be intimidated.
- 4) Fully participate in the public activities of your community and your country. Get involved in politics or trade unionism as these teach you valuable life lessons on human behaviour that we take for granted as technical people sometimes. This has helped me a great deal especially on management of staff.
- 5) Be a friend of the good internet (noting that there is a bad one) and fully utilise it as it contains virtually limitless information in many fields. You will also find information on bursaries, employment, training, and how to put together your CV, which is a major

problem for our graduates. Therefore the good internet should be your daily bread.

- 6) Lead wherever you are. Don't wait until you become a CEO of your company or a national politician before you take it upon yourself to take initiatives in public affairs. Lead ethically as that is the expectation of the people you will be serving. Don't approve systems that you know can cause injury and destroy life.
- 7) Lastly, give back to your community and never forget the people who helped you along the way. This may be in the form of advice, money, time or just a simple motivation to those who look up to you. Always advise against the destruction of public property when there are political disputes (i.e. clinics, hospitals, roads, and schools). No matter how angry we can be, let us always protect items of value.

Therefore go out there and celebrate this achievement as you all deserve it.

With those words Madam Chancellor, ndiyabulela, I thank you.