

Draft report

**A re Ageng: Energy Dialogue
Destination 2014: Do we have the energy to get
there**

**Date: 07 September 2006
Venue: Rustenburg Golf Club**

Welcome address: Councilor Phakoe (on behalf of the Executive Mayor)

The welcome address was presented by Councillor Phakoe on behalf of the Mayor of the Rustenburg Local Municipality, Councilor Wolmarans. Mayor Wolmarans asked Councilor Phakoe to express his and the local municipalities' support for the energy dialogue and the facilitative role that A re Ageng is playing in ensuring the economic development of the province. Councilor Phakoe is a member of the Mayoral committee for Local Economic Development and also leads the committee tasked with responsibility for the FIFA World Cup 2010.

Councilor Phakoe introduced Rustenburg as the fastest growing town in Africa and as such a major contributor to the economic development and growth of the province and South Africa.

Rustenburg was historically an agricultural town, but has diversified its economy to exploit the mineral and tourism potential of the region. In fact there is a major challenge for the town to ensure that the current economic boom brought about by the mining sector is sustained when the mining resources are depleted. The councilor stated that if this diversification of the economy can be done in an environmentally sustainable manner then half of their job of economic development has been achieved.

Whilst the economic boom has transformed Rustenburg into an industrial town about 70% of its population lives in underdeveloped rural-like conditions on the outskirts of the city.

The councilor mentioned the relevance of this dialogue during Heritage month. We should seek ways to address our energy needs in ways that protect our environment for ourselves, future generations and other animals, because what we leave behind is our heritage.

The rapid growth of Rustenburg means numerous challenges and in the interest of time and relevance the councilor focused on only two

of these, infrastructure development and service delivery. These two challenges are closely linked to the

The special needs of people with regard to energy means that we have to the provision and use of energy. Emergency vehicles for example need fuel to transport the sick, etc. The councilor cautioned however that in our search for energy we need to ensure that we conserve our environment, that the resources are exploited sustainable and that we become innovative with regard to energy exploitation.

He mentioned that the current reality however is that most of our energy sources are “dirty”. Its use is harmful to the environment and living beings, and it is also not sustainable. The councilor expressed the wish that proposals for alternative sources of energy need to be examined and adopted if our environment was to survive.

The councilor mentioned that there are proposals around solar energy, hydro-electricity, wind energy, biodegradable energy sources and others that are seemingly readily available on our continent and our country and we need to try and exploit these. He cautioned however that energy made available through these sources needs to be affordable to poor people.

The councilor expressed a wish that these challenges need to be explored by the dialogue and he hope that through our dialogue we are able to overcome these.

In conclusion the councilor called upon those present to ensure that the World Cup is a massive success and that we welcome visitors to our shores with the hospitality for which we are renowned.

The Chairperson thanked Clr Phakoe heartily for the welcome. She commented on the passion and commitment he portrayed during his opening remarks. She further said that local municipalities and specifically the Local Economic Development (LED) managers are at the coal face of delivery in our province.

Background to the Dialogue - Dick Kruger

Mr. Kruger started by saying that in South Africa we have taken electricity and liquid fuels for granted for a long time. Late last year and early this year received a rude shock. Firstly people in the Western Cape ran out of electricity due to problems on the transmission line used to feed electricity to the Western Cape. The electricity was generated but we could not get it there. The second shock occurred when Koeberg, the nuclear reactor outside Cape Town lost one of its generators. This resulted in a number of blackouts and energy saving measure being introduced.

At the same time the refineries in South Africa was switching to the manufacturing of unleaded fuel in compliance with new regulations. The process was supposed to run very smoothly, however experience has shown that this never happens. The efficiencies on the new production lines were also very low in the beginning. This resulted in a general fuel shortage in the country,

When a RE Ageng met at its first general meeting in 2006, there were lots of questions around energy. These questions and discussions led to the idea that sometime this year we should have a dialogue around energy.

The purpose of this meeting is to sketch the background in energy, where it comes from, who des what, measure to conserve energy, alternative energy sources, and hopefully this will stimulate a debate at local and provincial government level and between business and the North West so that we can assess these problems and address them before they happen.

Energy Efficiency – Dr Elsa du Toit

Dr Elsa Du Toit is from the Department of Minerals and Energy.

Dr du Toit started her presentation by expressing her gratitude and honour of being present in one of the designated cities for the 2010 World Cup. She prefaced her remarks that this big event is one of the reasons why we are so energy efficiency conscious at the moment because we always wait for tragedies or special events to get into action

The Energy Efficiency strategy was adopted by the Minister of Minerals and Energy, at the time Minister Phumzile Mlambo-Ngcuka on the 5th of April 2005. At the moment the department is trying to roll out the strategy as fast as possible.

The Energy Efficiency strategy comes from the White Paper on Energy published in 1998. Whilst this document is not as up-to-date as it used to be, this document is still being used as the basis for the policy.

The aim is to ensure that all South Africans have access to affordable energy. The status quo at the moment is that rich people have got access to lots of energy and lots of choices, whilst poor people have no choices whatsoever. Living in the rural areas sometimes compels them to use animal dung as a fuel source for fires to cook. So the aim of the DME is to ensure that everybody has got choices and that everybody knows which energy source is suitable for different applications.

The eight goals of the strategy

1. Improve the health of the nation

Currently people are using animal dung and coal in their houses and breathing in the toxic fumes generated in this manner resulting in respiratory diseases. Furthermore the DME wants to reduce the emission of pollutants during production processes.

2. Job creation
3. Alleviate energy poverty
One of the problems identified is that low-cost houses are not build with energy efficiency in mind. So poor people are saddled with extra energy costs.
4. Reduce Environmental Pollution
5. Reduce CO2 emissions
6. Improve Industrial Competitiveness
7. Enhance energy security
8. Delay the building of new power stations

This is not a contradiction but is premised on the principle that we need to learn how to use out existing sources more efficiently.

In 2002 coal contributed 64% of our energy whilst renewables contribute 9%. This represents a 3% increase from the previous year.

The Energy Efficiency Statutory has set it self a target of a 12% energy demand reduction by 2015. These targets will be reviewed every three years.

The Department estimated that more than 25% could be realised in energy savings in government buildings. The DME is in the process of negotiating with line departments to employ an energy manger and to develop policies around energy management.

In industry and large business the savings are estimated to reach 50 %. An agreement was signed by the minister and 32 mining and industry companies whereby the companies agree to meet these targets voluntary.

Other strategies include information dissemination, the development of careers in energy efficiency, and the promotion of renewable energy sources.

Dr du Toit concluded by saying that South Africa is one of a few countries of the world that has a energy efficiency strategy and that the success of the strategy depends on all South Africans being enable to make correct decisions on how we use our available

energy.

Comments and questions

Comment: The presentation was very informative.

Question: A question was raised about the accuracy or contradiction of talking about 6% economic growth whilst the demand for energy should decrease.

Response: The strategy recognises that the demand will increase as the number of users increase. The aim however is to ensure economic growth but at the same use less energy to achieve the same growth rate. The demand should also shift from dirty energy sources (coal) to renewable energy.

Primary fuels - Dick Kruger

Mr. Kruger is an assistant advisor on techno economics at the Chamber of Mines. He is also the deputy chairperson at A re Ageng and he represent the business sector.

Mr. Kruger provided a brief input on the primary sources of our energy. His presentation illustrated that we are still heavily reliant on non-renewable sources but that South Africa are in the process of deriving more of our energy needs from renewable sources.

He further indicated that the use of nuclear energy using uranium as a fuel source is being explored since uranium is a byproduct of gold mining. There are also plans to mine exclusively for uranium within the country.

Sustainable Energy and Climate Change Project (SECCP) - Richard Worthington

Richard Worthington is an activist within Earth Life Africa and work as director of the Sustainable Energy and Climate Change Project

He thanked A re Ageng for organising this dialogue which he sees as a wonderful platform to start. He also thinks that the province sets a wonderful example and he wished that provinces like Gauteng would follow this example.

The SECCP has the following objectives

- Advocacy and building awareness and capacity;
- Research and information dissemination;
- South-North-South networking and collaboration;
- Supporting the South African Climate Action Network (SACAN).

Mr Worthington provided three reasons for a just transition to sustainable energy

1. It creates employment
2. It reduces poverty; and
3. It respects future generations. At the moment our current energy mix defer a lot of costs to the future, from the cumulative effects of local and global pollution to global warming.

He admitted that there is very good policy however the problem is getting it implemented. For example, the White Paper on Energy policy talks about equitable investment in renewable energy, however at the moment is still seen as a niche technology.

From research conducted it also appears that Renewable where the people who need the energy service is not just seen as customers but are active participants in that they can start energy projects.

India is currently exporting wind energy technology to the developed world. We are constantly warned against the North's agenda of wanting to sell their technology to the developed world. The case of India is disproving this assertion.

Renewable energy has got minimal impact on land water and atmosphere. We should really start minimising impact if we are going to have sustainable livelihoods for future generations.

Renewable energy is using resources that are currently going to waste. The plentiful sunshine of the North West is not being used at the moment and it is replenished. The finite stocks that we are currently using are going to come to an end one day.

We should also be careful of our fossil fuels stocks. At the moment we are burning coal at very low efficiencies and there are other industries dependent on the processing of coal. Agriculture depends of pesticides and fertilisers that are coal based, so we already have a situation whereby our food supply is tied in to our fossil fuel exploitation. Certainly technologies that will be available in 20 to 30 years will be able to make much better use of this hydrocarbon fuels.

We need to change from business as usual because of energy security. Vladimir Putin has been accused of using energy to blackmail Europe, because it is so dependent on Russia for fuels. So the ore we can make use of locally available, naturally replenished resources, the more secure we will be.

Renewable energy is also good for our global competitiveness. It has higher up-front capital costs, but if we make that investment now, we put our economy in a better position in the f

Our current energy paradigm is large –scale, centralised and industry oriented which increases our dependency on trans-national corporations that run that energy system. The more we can build from the bottom up, the more we allow people to participate and the less they are dependent on trans-national providers.

Solar water heating is a way of using solar energy, a renewable resource, directly. This is often packaged as conservation because you avoid using electricity. It is in fact quite silly to have a water tank in your in your roof and to use electricity that comes from many miles

away, with transmission losses, generated by burning coal whilst you have all the heat from the sun beating down on your roof.

Under renewable one will sometimes find cement companies arguing that waste is a renewable resource. Waste management hierarchy first talks about avoiding waste if possible, and then reducing, and then where you can, reusing or recycling. So it is very questionable whether waste should be regarded as a renewable resource. There may be cases where some waste has value as an energy resource because of its calorific value, but very often one will find that other ways of using those materials conserve more energy.

In the province, Holcim Cement made a proposal to put a whole range of waste in cement kilns. They are saying that this is a way of displacing coal, and in this way one reduces global warming because there are less greenhouse gasses. We need to develop tools to enable to decide when it is acceptable to use waste and when we should follow the waste hierarchy.

The emissions profile of a waste incinerator changes with what you burn. One of the slides compares the emissions when one only burns coal to when one burns both coal and tires. In particular one significantly increases the emissions of dioxins and furans which are arguably the most toxic substance known to humanity. It is carcinogenic and increasingly regulations around the world are seeking to reduce or completely eliminate these substances. These substances are bio-accumulative in the food chain. So if they fall out over the ground and cattle feed on the grass, and when you get the milk from the cattle it enters our diet. In Holland there was a case where they had to advise mothers to stop breastfeeding because the bioaccumulation meant that the levels of dioxins in breast milk that was downwind from a waste incinerator exceeded world health guidelines. So we need to be very careful when we want to increase sustainability through burning of the waste.

We need to be more firm with the polluter pays principle. At the moment a lot of the cost of pollution is externalized. For example, the increase costs in respiratory diseases are carried by society as a whole and not by the originators of the pollution.

There has been a fourfold decrease in the energy generation sector since the 1980s. An independent study done by ELA indicates that if Renewable energy provides 15% of the energy mix by 2010 then it will create 36 400 direct jobs. This is not what will happen but only a scenario of what can happen.

Currently the sun over the Northern Cape supplies more energy than what we are currently using in South Africa. The challenge is to concentrate and distribute this energy and how we develop local industry to make renewable energy a sizeable stake in primary energy supply.

An independent study arrived at the following conclusions:

- Renewable energy technologies could provide over 50% of total energy supply by 2050;
- RE electricity generating technologies can generate up to 90% of electricity needs by 2050;
- Several renewable energy technologies could be cheaper than new fossil fuel options within ten years if concerted development starts now;

Renewable energy costs are lower than conventional electricity generation costs (burning of coal) because the one do not have to pay for the fuel. In the short term however we will have to pay more because of the capital investment to exploit the resource.

The research predicted a total cost of about 120 Billion rand if we continue with current practice, whilst if we start to divert progressively to renewables the costs is estimated to be less than 100 billion rand.

In conclusion Mr Worthington concluded by saying that A Just Transition to Sustainable Energy is possible for Employment creation and poverty reduction, through:

Integrated Energy Planning – from resource extraction to end use with full cost-benefit analysis done right this time,
A forward-looking policy agenda – national and international (not waiting for/dependent on Northern finance) with an Energy services approach, incl. needs and benefits based pricing,
If there is clear political will and implementation.

Comments and Questions

Comment: There is a need to balance national development goals and environmental goals.

Comment: There was a feeling from the floor that we need to start talking about diversifying our energy sources rather than talking about alternative energies. The reality is that we will still be using coal because we have it.

Comment: Whilst the jobs created sounds impressive we need to look at the type of jobs that renewable energy will make available.

Comment: The North West economic strategy is based on agriculture as one of its pillars. One need to look at the impact of energy costs on these small scale farmers especially since they are often poor and do not have the necessary capital to invest in energy infrastructure.

Response: One need to look at the various farm processes and identify appropriate energy uses for the different type of process, for example, use direct sunlight for drying crops like tomatoes.

PARAFFIN: Friend or Foe? A fuel of choice & consequences

This presentation was made by Joe Bopape, the regional manager for the Northern Regions for the Paraffin Safety Association. The Paraffin Safety Association deals with safety aspects around paraffin use and is sponsored by major Liquid fuel companies

Paraffin is a by product from the petrochemical industry. It is highly toxic, has a low viscosity (flowing very easily), is highly flammable and is clear. It can easily be mistaken for water and about 800 million liters are sold annually.

An estimated 20 million users are using paraffin. The consumers are mostly from poor backgrounds: they have inconsistent incomes, have low literacy levels and have insecure security of tenure. These customers normally use a variety of fuels and where their houses are

electrified, they use the electricity for lightning whilst they use paraffin for heating and cooking.

It is estimated that approximately 200 000 people are either injured or affected (lose love ones, property) as a result of paraffin related fires. Approximately 80 000 children ingest paraffin annually, of which as many as 1 700 may die as a result. It is further estimated that burns are leading cause of non-natural deaths in 0-4 year olds. It costs between R30 000 to R100 000 to treat a burn patient.

One of the leading causes of fires is unsafe stoves that are being used. Government has adopted stove standards, but these are not compulsory. As a result people buy cheap appliances that compromises their safety.

The following is a list of problem associated with unsafe stoves:



- Leak
- Paraffin in reservoir exceeds the paraffin flashpoint temperature
- Poor instructions
- Carbon Monoxide

- Poor Thermal Efficiency
- Burst into flames if knocked over
- Wear out quickly

PSASA has identified the following critical areas and intervention to eliminate the problems associated with paraffin use.

Manufacturing and Materials	
Issues	Strategic countermeasures
Paraffin is a hazardous substance Paraffin requires a naked flame Oil companies cannot own the supply chain Paraffin air pollution exists	Investigate the possibility of improving the chemical composition of paraffin to eliminate pollutants, improve efficiency and safety Switch to an alternative energy source
Distribution	
Issues	Strategic counter -measures
Paraffin is sold in bulk Risk of contamination with other fuels with lower flashpoint and more harmful toxicity Paraffin not distributed in safe packaging Training for independent distributors Low awareness of inherent dangers Many parties in supply chain	Regulate the supply chain Develop / encourage safety awareness in the supply chain Develop a packaging solution and switch supply from bulk to prepacked
Retail	
Issues	Strategic counter -measures

<p>Many unknowingly receive contaminated paraffin from bulk supplier</p> <p>Paraffin handlers not aware of harmful effect on skin</p> <p>Homemade measuring devices and funnels</p> <p>Paraffin not sold in safe packaging</p> <p>Paraffin decanted into any container provided by consumer</p>	<p>Paraffin is only sold in safe packing that is recycled using a deposit system</p>
Appliances	
Issues	Strategic countermeasures
<p>Current paraffin flashpoint too low for existing appliances</p> <p>Stoves used are cheap but unsafe for domestic use</p>	<p>Research and develop viable, safe and affordable alternative paraffin appliances</p> <p>Outlaw and remove unsafe appliances from the market</p> <p>Recapitalisation – buy back unsafe stoves</p>
Homes	
Issues	Strategic countermeasures
<p>Homes are small and crowded</p> <p>Not enough spaces between houses</p> <p>Poor ventilation in homes</p> <p>Paraffin are not stored in a safe place</p> <p>Paraffin stoves are used for heating</p> <p>Informal housing are constructed from combustible materials</p> <p>Multiple energy sources are used and it is confined in same space</p>	<p>Work with local government (disaster management) to improve safety in the home, especially regarding fire prevention and improved ventilation</p> <p>Develop a robust, uniform national surveillance system that include forensic investigation in the event of harmful incidents</p> <p>Collaborate with all role players who can help improve the safety of low income homes</p>

Customers	
Issues	Strategic counter-measures
High levels of illiteracy/low education levels Alcohol abuse Unsafe dress codes around stoves Burning stoves used as weapons to cause harm Unaware that paraffin is harmful Poor safety awareness at home	Conduct a massive collaborative education and awareness effort Promote energy saving practices (such as hot boxes) to reduce consumption

The Paraffin Association feels that paraffin use is here to stay and key to addressing the problems associated with its use is a regulatory environment in which enforcement, error proofing and education are key strategic thrusts.

Comments/Question

Question: Has PSASA considered producing and handing out safe containers.

Answer: Yes, but it was discovered that the containers are then use for other purposes. The organisation also tried to distribute safety caps, but because the containers were changed it des not work anymore.

Comment: There seems to be a misunderstanding. The DME does not to ban paraffin but to make it safer.

SECTOR RESPONSES

COSATU

The COSATU response was delivered by Mxolisi Mbomvane

Chairperson and Members of the management Committee, Dr du Toit, Mr. Skinner, Mr. Worthington, Mr. Bopape

A COSATU we wish to congratulate A re Ageng for having facilitated and convened the energy dialogue today. After the inputs by various presenters, we can only emphasise the need for this important information to be cascaded to the masses of our people. A re Ageng continues to have a responsibility of combating ignorance and promote the education of our people through the forum and its constituencies.

In our submission on the restructuring of the electricity industry, as COSATU we have expressed our concerns regarding the implications of employment security for workers in the industry.

We are also concerned that Independent Power Producers will enjoy unfettered access to the transmission network and will directly supply to large end-users. Some of these major customers may be lost by REDs. This is a factor that is likely to have a bearing on the REDs operational capacity and therefore on their overall cost-structure, including labour.

The combined effects of some developments is more likely to threaten the workers' employment security in the sector, hence the DME needs to continuously handle process with the participation of labour.

A COSATU we reject any social plan as a means to legitimise the retrenchment of workers especially when there are alternatives.

With regard t the White Paper – Despite our general confusion of some aspects of the White Paper, it seems as if the regulatory framework proposed in the White paper neatly fits into the DME's liberalization scheme. It leaves out some of the important tenets of the White Paper especially those geared at supporting the poor.

In previous submissions I have referred to earlier, we have consistently oppose the restructuring. Thus our perspective broadly called for a regulated public monopoly, vertically integrated with transmission agency of REDs established to consolidate the disparate municipal entities created to realise economies of scale.

In this context, ESKOM maintain its strategic developmental role including future expansion of generation, transmission and distribution capacity, maintenance of cheap electricity supply and lower possible costs for poor households in particular.

Alongside the free basic provision for the poor, there must be an upward sliding tariff system in order to realise cross-subsidisation in favour of the poor and thus the promotion of DSMs in the long run.

We must remember what happened in New Zealand and California when electricity was privatised – power cuts, increased tariffs, lower productivity.

Whilst we may be seen to be supporting the consideration of alternative energy resources and given the assertion that renewable energy allows mass participation and create jobs, we need to emphasise that this assertion needs to be tested around what type and the quality of those jobs.

Nevertheless we believe more engagements must ensue to galvanise much more energy to get to destination 2014.

The Dialogue must continue.

CIVIL SOCIETY

The civil society response was delivered by Mr. Dolos Luka, the National Chairperson of SANGOCO.

Access to electricity is a basic service that adds immeasurable value to a human life and livelihood opportunities. South African energy policy needs to be sensitive to and prioritise the energy needs of the

estimated 50% of South Africans that live in poverty. This means that a reliable and cost-effective (that produces as much electricity at the least cost) energy supply is crucial for the development of livelihoods. This is the first point of concern for civil society.

This comes in the backdrop of South Africa's participation in the WSSD and commitment to its resolutions pertaining to sustainable development. Is South Africa's energy supply sustainable in terms of the environment? This is the second important issue for civil society.

With South Africa facing unemployment levels of over 20% (conservative definition) or almost 40% (expanded definition), it is important that job creation is factored into all sectors and initiatives and the energy sector should be no different.

The recent black-outs that hit Cape Town have been a poignant illustration of the crossroads that South Africa has reached. The black-outs have been a clear indication that demand is seriously overshadowing supply. It can be argued that this has been foreseen and the construction of the PBMR would go a long way in the solving of the problem. However, civil society is of the view that the nuclear option is not the best choice for our country. In terms of cost-effective electricity provision we feel that the PBMR is off the mark. According to US researchers, renewable energy- wind energy in particular- produces more energy than nuclear energy. Market demand for renewable energy supports this point; in the 1990s the wind energy market grew by 24%, the solar market grew by 17% whilst the nuclear market grew by only 1%. When considering the energy production costs we also have to bare in mind the propensity for

overrunning budgets that often occurs on big projects, especially big nuclear energy projects. It is estimated by US researchers that the PBMR will cost at the very least R40 billion for the forty years of its operational time span.

Considering the huge budget of the PBMR and the probability of overrunning the budget it is highly unlikely that electricity users at community level are not going to carry the costs in order for the PBMR to be profitable. Comparative research has also highlighted that in the nuclear energy dependant states in America electricity costs up to 25% more than in states that depend on other forms of energy. Furthermore the PBMR will not do much for the rural poor who are energy hungry as they will remain far from the national grid and will still struggle to get connected.

In the same vein South Africa needs to cease its dependence on coal for electricity. According to the DME's Digest of South African Energy Statistics coal produced energy accounted for over 90% of the total energy production. This despite the scientifically proven contribution of carbon dioxide emissions to global warming of which coal produced energy is a major contributor. Four years on from the WSSD, South Africa has still not devised mechanisms to fundamentally negate its coal fired energy dependency.

As civil society we are more concerned with ensuring that ordinary people are empowered and educated about these big concepts, and how they could benefit at the end of the day from these energy uses.

If people themselves can understand the hidden costs, how we use energy and the advantages of using things differently we are of the opinion that they will be exploring and choosing alternatives. More sustainable energy systems will only be successfully implemented if communities are part and parcel also within decision making.

As a nation we have set ourselves the complex task of reconstruction and development. This means social action that involves people, participation in decision-making – People having a sense of ownership. People working together in groups and teams will show that we are indeed on the right path to achieving sustainable development.

TRADITIONAL LEADERS

The response of traditional leaders was delivered by Kgosi Mabalane, a member of the North West House of Traditional Leaders

Programme Director, presenters, all sectors present this afternoon, distinguished ladies and gentlemen.

It is indeed a privilege for me to present the traditional leaders in this dialogue. However my preference, because I am part of A re Ageng, was for somebody else from the House could have been here. There has been a problem though that they have to sort out this afternoon.

If Mr. Phetoe was here he would have asked whether labour or traditional leaders falls under civil society, because in my own view those three falls under civil society. I would therefore not repeat what my other colleagues have said in the interest of time. Secondly I have information from my office that there has been a meeting between ESKOM, ELA had a meeting with some of the traditional leaders selected from Bojanala with a view to discussing the same issue. So we are still awaiting the report and the decisions taken.

As we are aware that 65% of our province is rural and I want to commend A re Ageng with initiating this dialogue, and want to urge A Re Ageng to continue with the awareness programmes for the rural especially around their understanding of energy supply, alternative energy and judicious use of resources.

Alternatives to electricity will be welcomed, but it should not just be boldly welcome. We will have to consider issues around reliability and sustainability.

I also like to reiterate the sentiments expressed by the programme director around advocacy for the issue around paraffin in our communities. And I would appreciate if this could be done. I would like also A re Ageng to have dialogues' such as these in rural areas so that our rural communities can have a direct say in the issues that are affecting them.

I would like to say thank you very much to A re Ageng for trying to keep us on board on these issues.

BUSINESS

This input was presented by Mr. G Roberts of Bridgestone Thank you madam chairperson. I am from a company called Bridgestone situated in Brits. I joined the company in 2002. During the first week of my joining the company there was a major power outage for a couple of hours. Being a big company, our turnover is two billion per annum. The company employs over 6 500 people. We have two plants, one in Brits and one in Port Elizabeth.

We decided that we need a forum and we got all the role-players together in Brits. These include all the big companies and it was done through the assistance of the Chamber of commerce. In this forum we discuss matters related to electricity and water. I am the chairperson of that forum, so I speak for the industrial forum of Brits,

Problems we had years ago was that the supply of water was not consistent. This problem was sorted out in two years. The problem that still remains is a major problem is a regular supply of power. Power outages were a regular occurrence, some for up to eight

hours. . In the year 2002 it was calculated that if Bridgestone stand for one hour it was calculated that the costs per hour in losses is over R200 000.

We had a number of meetings with the Council and Eskom. Unfortunately every time there was a meeting with ESKOM, we ended up with a different representative. After three years of continuous engagements we felt that we were getting nowhere. At the beginning of this year there was a breakfasts with the Premier, and Bridgestone's' director was at this breakfast, where he voiced very strongly his concerns with the power supply in Brits. Since that meeting we had very fast action. There was a meeting called with the DME and ESKOM. At this meeting there was a decision taken to secure the supply. A meeting is scheduled in the near future where the plan will be finalised.

As engineering manager I am always compared to international standards. Energy saving standards are compared to international standards. Bridgestone are always reminded that they need to be competitive, and if we fail then the plant will be closed down. That is unfortunately a reality. Last week they closed a plant in Chile and move production to China because of a lack of cost competitiveness. Bridgestone has invested over the last three years R700 million into the Brits plant.

As an engineer I know that energy saving always falls under the engineer. There should be a drive a drive towards energy saving in South Africa. Energy savings used to be the last priority, however what the directors have realised is that energy savings needs to be done. They formed a committee that produced an energy savings manual. This manual is about 300 pages long. This manual was taken to every Bridgestone plant in the world where all the production teams where a theoretical and practical course was done. Each plant had to produce action plans. If Government is serious then we should look at guidelines for manufacturing, mining and set standards.

If we do not have somebody to drive alternative energy sources, we will always talk and nothing will happen.

I found the talk about paraffin very interesting. I did not know that there were so many people dying. It is actually quite horrific.

Thank you very much.

GOVERNMENT

The government response was delivered by Mr. Andile Makapela from the Department of Labour

Programme Director, Management of A Re Ageng Forum, Representative of various Constituencies (business, labour, NGOs and government), Councilors, Presenters, Youth Commission, ladies and gentlemen.

A better life for all is the promise of the government of the day. There is no doubt that with energy we can move and better our lives. As human beings we need food as fuel for effort. Over the years this fuel enabled us to advance and raise our standard of living. Today, we know that a better life for all is dependent on energy which affects economic growth directly and is necessary for people to provide for themselves food, shelter and health - basic necessities.

South Africa's Reconstruction and Development Programme set ambitious and yet noble goals for providing, basic services to all, including housing, energy and electrification. The challenge, however, is that production of energy has many negative environmental effects,

1. Pollution from coal use- Air pollution problems from coal combustion is serious. Medical studies are revealing increased respiratory disease in residents in the polluted areas.
2. Acid rain - due to sulphur and nitrogen oxides released into the upper atmosphere where they combine with moist air and rain, and cause acid precipitation in even areas far from the source.
3. Pollution from vehicles -Motor vehicle fumes make air pollution problems worse and are a principal cause of photochemical smog in cities

4. Deforestation - Fuel wood is an efficient source of energy for cooking and heating and its use can cause increased respiratory illness. It has been estimated that if current consumption trends continue, all natural woodland in former "homelands" will be denuded by 2020.
5. Global warming - The potentially devastating consequence is that the earth is slowly getting warmer causing the climate to change and the sea level to rise. As a country needing rapid economic growth in the medium term to satisfy the country's developmental needs, South Africa's potential contribution to global warming is an area of concern. SA is among the world's 20 worst offenders in terms of harmful greenhouse emissions. It would seem that the main culprits are Eskom and Sasol, as they account for 90% of these emissions.
6. Nuclear Energy problems - South Africa has one commercial nuclear power station at Koeberg near Cape Town. Electricity planners foresee that as electricity demand grows, many more nuclear power stations will be built bearing in mind that nuclear fission produces dangerous radioactive by-products.

Given these threats, how does SA provide a better life for all now (short-term political and economic gains) and not jeopardise the future (long-term survival of the species)?

The Mail & Guardian of 25 August 2006 reported that massive expansion of coal-fired electricity breaches SA's global undertakings. But are we really?

We all know that South Africa has to grow the economy for everyone's benefit, speed up access to social services, improve safety and security to all and become involved in Africa's renewal.

More efficient use of energy has the potential to socially and politically support these goals, particularly when targeted at low-income communities lacking adequate energy services. Since the installation of a democratic government in 1994, South Africa has worked toward bringing economic equality to historically

disadvantaged (non-white) groups. Normal life would be impossible without energy, without fuel for transport the economy would come to a standstill thus this indicates that energy plays a significant role in the economy of the country and in the human lives. Examination of policy options can lead to overcoming significant barriers to energy efficiency, and offer ways government can bridge the gap between what is good for society and what is good for the electricity industry.

SA is a major generator of electricity from coal and is conscious of the greenhouse gas problem. However, SA is also a developing country with massive challenges of poverty eradication and employment creation. The economy needs to be strengthened through increasing industrial capacity*. The country cannot be required to curtail development as a result of past excesses in the developed world. We need to have sufficient energy resources to support the Growth and Development Strategy of government. In the same breath we cannot mortgage the environment for short-term economic gains. We, therefore, need to find the balance between the two.

SA has taken its environmental responsibilities very seriously. Amongst others by introducing world-class environmental management legislation as part of a United Nations agreement to "adopt national policies -and take corresponding measures on the mitigation of 'climate change', and hosting the world Summit on Sustainable Development in September 2002 where SA committed to "displacing 10% of its coal-fired generating capacity with alternative sources by 2012 and to further reductions beyond 2012".

The Renewal Energy sources become viable alternatives for consideration. These include:

- Pebble Bed Modular Reactor (PBMR) project
- Power from waves

- Fuel cell energy

- South Africa also invited bids to provide 40,000 rooftop solar power systems to rural areas in June 2004 as part of its rural electrification program.

Furthermore, South Africa has made progress in other ways to address the energy dilemma; for example:

- Improvements are being made to the South African electricity infrastructure.
- Laws are currently being developed and implemented to lessen environmental damage and pollution.
- Intent to reduce Motor fuel sulfur content by 2010.
- The National Environmental Management Air Quality Bill (NEMAQ) provides for the Department of Environmental Affairs and Tourism (DEAT) to establish national norms and standards for ambient air quality, emissions, air quality monitoring and air quality management.
- Energy Efficiency programme of government.
- It is likely that a significant number of people will switch off from wood as a source of fuel to more convenient sources such as paraffin, gas and electricity thereby slowing down the rate of deforestation.

One of the harsh realities we need to face is that Coal will remain part of the energy mix in South Africa for a number of years to come, to address government priorities aimed at economic growth and the poor of this country. South Africa is however, mindful of the effects on the environment and has taken steps and made commitments. The commitments may seem ambitious but they are better than none at all and they are a target to work towards.

In conclusion, Programme Director, one gets a sense that we are at different levels in terms of understanding and comprehending the challenges pertaining to the generation and use of energy.

increased dialogue on the energy issues at forums such as these, and efforts already made, are an affirmation that South Africans are

good at solving and mediating the most complex of problems.

Whilst we encourage the use of renewable energy, we have to find ways of making alternative energy accessible and affordable. As government, we want to encourage further dialogue on how to provide sufficient energy whilst at the same time ensuring that the environment is conserved.

I thank you.

Way Forward

Mr. Dick Kruger provided the following to take forward from the Dialogue

1. The Energy Efficiency Strategy, the energy efficiency accord and the process is available, but it is known well disseminated. One of A re Ageng's first tasks is to see that government's energy efficiency strategy and the process of implementation is disseminated throughout the North West. Targeted in this process are business local government, provincial government and civil society.

2. A re Ageng must consider the information gathered today, because there are events coming up in the near future. The first one is the Electricity Regulation Amendment Bill was tabled in Parliament. This deals with municipal powers in respect of electricity distribution and regulation. Secondly we have been waiting for an energy bill and in the near future and A re Ageng must have a position which we can use to developed a position and advocate those positions.

3. Mr. Kruger invited participants to present A re Ageng with developmental topics that we can then discuss in similar dialogues in the future. He mentioned two, transport and topics, that was mentioned during the course

Vote of Thanks

Kgosi Mabalane expressed his thanks to the following role-players:
A re Ageng's management and staff that made the dialogue possible.

The presenters for very informative presentations. He thanked the representative from the Rustenburg municipality
The representatives of the different sectors who made inputs
He thanked everybody who responded positively to the invitations and made the day a success.

I am honoured and privileged to welcome you all on behalf of the Mayor, His Worship C/r Wolmarans, to today's event. I stand here as a Member of the Mayoral Committee for Local Economic Development in Rustenburg Local Municipality and as we know, our task of driving this all important government imperative is huge.

It is again fitting for the organisers - A re Ageng North West, to consider Rustenburg as host for this all important Energy Dialogue. I venture that the reason for this is simply that this city is the backbone of economic growth and development, not only of the North West Province but also of the country as a whole. This city is where it is happening.

Rustenburg has an interesting character. It is an industrial town due to its vast mining activities; it is mostly rural with a majority of its residents living in underdeveloped areas in the outskirts of the city proper.

It is historically an agricultural town and it is a city blessed with abundant tourist attractions and tourism potential. This dialogue is relevant for this city as the city needs to diversify its economic activities to avoid becoming a ghost city once the mineral resources are depleted. If we can succeed in diversifying our economic activities in an environmentally sound manner, then half of our job as the custodians of Local Economic Development will be done.

It is Heritage and also Tourism month in South Africa. This event is

very relevant because it seeks to discuss ways of addressing our need for energy in a manner that protects our environment for ourselves, our children and other beings; which is our heritage. Closely linked to this event is the city's Arbour Day celebration today, which encourages everyone to help by planting, taking care of trees and protecting the environment. Plant a tree – grow our future.

As a rapidly growing city, Rustenburg faces numerous challenges; but in the interest of relevance and time I would only focus on two of the most pressing ones; namely infrastructure development and service delivery.

The two challenges are closely tied to energy use and provision (transport, emergency vehicles and ordinary cars need fuel and roads to operate and provide services). However, in trying to address these pressing challenges, we must not lose sight of the need for conservation of the environment; sustainability of the resources and innovation in our technological approaches.

Energy is central to survival; that is an indisputable fact. To start with, every being on this earth needs energy in the form of food. Expanding on my assertion above; all beings must come up with innovative ways of finding food sources that are renewable and sensitive to the environment; otherwise those food sources may face extinction.

The same argument can be applied to fuel sources. Unlike with other beings, humans need other sources of energy to survive on this earth; they need heat for cooking & warmth, ironing of clothes etc, and the primary source of this kind of energy is wood and coal.

Humans again need diesel and petrol to power their vehicles; which is primarily sourced from fossil fuels like coal and oil; and they need electricity for light and household appliances which is primarily sourced from combustion of coal, use of water and nuclear material.

All of the sources of energy I have mentioned above point to non-renewable energy sources; which are also reportedly harmful to the environment and to people (we all know of the deadly carbon

monoxide derived from the burning of coal). If one applies the mind to the need for conservation, sustainability and innovation; it becomes clear that a totally different approach is needed to ensure that humans continue to benefit from and live harmoniously with nature while protecting the environment for future generations and other living beings.

Africans (known for their sustainable use of the environment since time immemorial), conservationists and scientists have been looking at ways of using nature to enhance quality of life in a sustainable and sensitive manner. Many agree that the use of fossil fuels in the form of crude oil, coal, wood and natural gas is nearing the end of its cycle because the reserves may only last for the next 40 to 50 years. Many have also agreed that the use of these sources of fuel has not done any favours for our sensitive nature.

To this end, proposals for alternative sources of fuel have been coming thick and fast and need to be explored and adopted if our environment is to survive.