

**REPORT ON JOINT MEETING OF PORTFOLIO COMMITTEES ON PUBLIC ENTERPRISES, MINERALS AND ENERGY, AND SCIENCE AND TECHNOLOGY ON "ESKOM: POWERCUTS IN THE WESTERN CAPE, ITS NATIONAL IMPLICATIONS AND CHALLENGES IN ELECTRICITY CAPACITY", HELD ON 14 MARCH 2006**

**Report Adopted at Joint Meeting of the Public Enterprises, Minerals and Energy, and Science and Technology Committees on 31 March 2006**

**1. Context of Meeting**

1.1 The Public Enterprises, Minerals and Energy, and Science and Technology Portfolio Committees met with the Ministries and Departments of Public Enterprises, and Minerals and Energy, and officials from Eskom and the National Nuclear Regulator to deal with issues relating to "Eskom: Powercuts in the Western Cape, Its National Implications and Challenges in Electricity Capacity". The meeting was attended by the Minister of Public Enterprises, Minister Alec Erwin; Deputy Minister of Minerals and Energy, Deputy Minister Lulu Xingwana; Chairperson of the Eskom Board, Mr Valli Moosa; CEO of Eskom, Mr Thulani Gcabashe; CEO of National Nuclear Regulator (NNR), Mr Maurice Magumela and Dr Tim Hill a representative of NNR.

1.2 The Chairperson of Public Enterprises, Mr Y Carrim, gave an overview of the objectives of the meeting. Essentially, he said:

- Parliament is answerable to the people affected by the power outages, and in terms of the oversight role of the committees over Eskom required a comprehensive explanation of the causes and implications of the outages. While aspects of an explanation have emerged through the interaction of different committees with Eskom, this meeting sought to get an overall understanding of the issues and also serve as a basis for the committees to work together to more effectively monitor developments and develop a joint programme of action.
- The Public Enterprises Portfolio Committee, in particular, has been consistently praising Eskom. This is most recently reflected in its "Report on the Annual Reports of the Department of Public Enterprises and State-Owned Enterprises" published in the ATC of 16 November 2005. In its interaction with Eskom, the Committee did not get any sense that these outages would occur. This raised the question of how rigorous the Committee was being in its oversight function. The Committee, did, however in October last year raise the concerns of experts that Eskom's new generation programme comes too late and outages are to be expected similar to those experienced in Johannesburg – but Eskom was dismissive of these views.
- While recognizing that there may be security sensitivities about the investigation relating to the bolt in the generator in Koeberg that is understood

to be the initial cause of the outages, the committees wanted at least a general sense of progress regarding the investigation and a sense of when the outcome will be made public.

- The committees also want clarity on the following issues:
  - What are Eskom's plans in the short and medium terms to attend to the Western Cape outages?
  - What are the national implications of the Western Cape outages and how will they affect Eskom's capital expenditure programme?
  - What are the implications of the outages for Eskom's rural electrification programmes and the free basic electricity programme?
  - What are the implications of the outages for the government's 6% economic growth target?
  - What are the implications of the outages for electricity charges?
  - What are key aspects of Eskom's energy-saving programme and what can MPs do to play a role in this regard?

## **2. Presentations to the Committees**

2.1. Minister Erwin welcomed the opportunity to address the committees on energy issues and correct misunderstandings regarding the outages in the Western Cape. He expressed regret at the inconvenience suffered by the people of the Western Cape. The Minister stressed that there is no national energy crisis in the country. He said that there has been a steady growth in the demand for electricity, with reserve energy margins being narrower than they should be. This was partly due, to the fact that the country's economic growth has been higher than projected, so demand for energy has grown faster than anticipated. This has led to fast-tracking the implementation of its capacity expansion programme which includes the refurbishment of moth-balled power stations and building of new stations. Government would like to increase the reserve margin to about 15 %. The Minister said that the loss of 900 MW in the Western Cape was a major incident, but did not constitute a national crisis.

2.2. Minister Erwin responded to media reports that the power outages have harmed investment prospects. He said that a media report that a foreign company had abandoned its plans to invest in an aluminium smelter because of its concerns that Eskom would not be able to provide the necessary electricity was false. The company had never approached either Eskom or the government. The situation in

the Western Cape was manageable and it was ill-advised for the business community to create the impression that business is being turned away.

- 2.3. The Minister said that the outages were due to the fact that there was a bolt in the generator, which caused the shutting down of the generator. Through government intervention, Eskom was able to procure a replacement rotor from a French Company (EDF). This was an exceptional incident and is being investigated to determine whether it was caused by negligence or a deliberate act of sabotage. A statement will be made in due course in Parliament.
- 2.4. Deputy-Minister Xingwana repeated that there is no national energy crisis and that sufficient capacity exists to meet South Africa's energy needs. She stressed that there are no safety problems in Koeberg and that there is no policy vacuum with regard to the nuclear energy sector; that negotiations with the independent power producers are on schedule for new peaking stations; and that the various education programmes about energy efficiency are on track.
- 2.5. Mr Valli Moosa said that Eskom plans to spend about R84 billion on its capital expansion programme during the next 5 years. The programme includes, among other aspects, the reviving of the three moth-balled stations and building new generation capacity. Eskom has commenced with the construction of two new open cycle gas turbine stations in the Western Cape. The two stations will be operational early next year in time to supply the winter of 2006. The outages in the Western Cape will have very little impact on the programme to build new capacity. Mr Moosa also reiterated that there is no national crisis. Eskom continues to improve its demand-side management and all consumers needed to become more energy-efficient. This will have the added advantage of making energy supply more reliable and environmentally friendly and reducing costs for consumers. Mr Moosa said that Eskom has a strong balance sheet and that the utility is highly respected in the financial markets internationally. The recent outages have had a minimal effect on this.
- 2.6. Mr Thulani Gcabashe reported that the five interruptions to electricity supply in the Western Cape between 11 November 2005 and 28 February 2006 occurred at the time when Unit 1 at Koeberg was out of service. Given that most of the power stations are located in Mpumalanga where there are large coal deposits, high-voltage transmission lines are utilized to bring power to the Western Cape. Koeberg provides base-load generation capacity in the Western Cape. It also assists in ensuring voltage stability along the long transmission network. Koeberg's maximum generation capacity is 1800 MW. Transmission lines from Mpumalanga can carry an additional 3 500 MW. The resulting maximum Cape load is 5 600MW during winter (5 100 in summer). Together with the Eskom and non-Eskom generation available in the Cape, there is generally enough capacity to meet the demand. Whenever one unit of Koeberg is shut down Eskom can still meet the demand. The problem occurs when both units at Koeberg are out of



service. The system then becomes highly constrained with the risk of power supply interruptions that lead to load shedding.

2. 7. The only running unit at Koeberg (Unit 2) was due for refuelling in mid-March. In order to avoid the repeat of recent interruptions, Eskom has devised a recovery plan to keep Unit 2 running until mid-May at a reduced output ( about 600 MW). By this time, a new rotor would have been installed in Unit 1 and repairs completed so that it could be returned to service. At this time, Eskom will close down for refueling Unit 2. One of the consequences of running Unit 2 at a lower capacity was a possible electricity supply shortfall of 300-400 MW during peak hours.
2. 8. Eskom was aiming to achieve demand-side management savings of 400 MW to minimise the impact on customers of the shortfall during peak hours. These included the installation of efficient lighting and an energy conservation campaign. Eskom had also entered a contract with commercial and industrial users whereby it would incentivise them for reducing their consumption during peak periods. In the medium term, Eskom planned to build open cycle gas turbines in Atlantis and Mossel Bay that would generate an additional 1050 MW.
2. 9. Eskom's R84 billion building programme was planned according to a projected gross domestic product (GDP) growth rate of 4%. As the current GDP growth rate was 5%, electricity demand was increasing faster than projected. Eskom would need to accelerate its building projects to meet this higher demand, as well as to replace power stations that would be decommissioned during the 20-30 year building programme.

### **3. Response of the Committees**

- 3.1 A detailed account of the issues raised by members of the committees and responses to them is contained in Annexure A of this report. Among the issues raised were the following:

- The need to provide the public with a clear and simple explanation with which they can identify, instead of a too technical explanation.
- MPs engagement in a campaign to conserve energy.
- The need for the investigation into how the bolt got into the generator to be completed expeditiously and reported on publicly.
- The need to improve security at Koeberg.
- The need to investigate the use of fuel cell technology.
- The value of nuclear energy.
- A nuclear waste management policy and evacuation strategy in case of a danger.
- The environmental impact of coal-fired stations that are to be built.
- The use of gas-fired power stations, possibly using potential gas reserves on the West Coast.
- Compensation for losses suffered by businesses in the Western Cape because of the outages.

- Greater private sector participation in the electricity industry.

- 3.2. Overall, the committees were given a fairly comprehensive briefing. However, there was not enough time to fully pursue all the relevant issues – and some of these will be taken further at the next briefing and in exchanges with the relevant people before then.
- 3.3 The majority in the committees agree that there is not a “national electricity crisis”, but there are serious specific challenges that need to be addressed, and all stakeholders are urged to work together to address these challenges.
- 3.4 The committees express our regret at the inconvenience and hardship suffered by people in the Western Cape as a result of the power outages.
- 3.5 While the majority in the committees accept that there may be certain unique and specific reasons for the Western Cape outages, we feel that Eskom could have responded more effectively to the challenges. We are interested to get a better sense of what general lessons Eskom has drawn from the Western Cape experiences and how this will contribute to its ability to avoid or to anticipate outages, and deal with them more effectively where they unavoidably occur. While recognizing the difficulties, we feel that Eskom could have dealt with the public better and needs to improve its communication through the media. While technical information is necessary, some of the explanations offered for the outages were far too technical and did not respond to the direct concerns of the consumers.
- 3.6 The committees feel that the investigation into how the bolt came to be in the generator in Koeberg should be concluded expeditiously and reported on to the public. We welcome Minister Erwin’s commitment to address parliament on this in due course.
- 3.7 The committees accept that higher economic growth figures and the successful rollout of the electricity programme have contributed to the erosion of surplus capacity, but we are still not clear why it was not possible to prepare better for this.
- 3.8 The majority in the committees feel that Eskom’s immediate, short and long term plans to address the Western Cape challenges are sound. The real test will be in the implementation of the plans – and the committees will monitor this. A key aspect of the plan should also be to win the confidence of the public, which will obviously be very challenging – but it has to be attempted.
- 3.9 Clearly, security and risk management systems at Koeberg need to be strengthened – and the committees will pursue this further with the relevant Departments and Eskom.

- 3.10 While the committees accept that Eskom's capital investment programme will contribute to economic growth of 6% and more, we feel that there probably has been a limited degree of loss of confidence in Eskom. Of course, this should not be exaggerated, but it should not be dismissed completely either. In any case, the committees feels Eskom should accurately assess the mood and attitudes of businesses in this regard and respond appropriately.
- 3.11 The committees note the outages in Johannesburg, and while recognizing that it is mainly the municipality's concern to address these, feel that Eskom should play an active role to assist, as it committed itself to doing, at a meeting with the Public Enterprises Portfolio Committee on 19 October 2005.
- 3.12 The committees especially welcome Eskom's commitment to, in co-operation with other stakeholders, engage in a major energy-saving campaign. MPs can also play an active part in this – and we commit ourselves to doing so, as well as mobilizing other MPs to do so. The committees request Eskom to produce a user-friendly pamphlet on energy-saving that MPs could distribute through our constituency offices during the 3 to 28 April constituency period.
- 3.13 The committees also request Eskom to produce a leaflet for MPs that explains clearly and simply the reasons for the Western Cape outages and the immediate, short and long term plans to address the challenges. The leaflet should also, briefly, deal with Eskom's national capital expenditure programme.
- 3.14 As committees we commit ourselves to working more often and more effectively together. We will also seek to draw in the Environmental and Tourism Portfolio Committee, and, where appropriate, the Provincial and Local Government Portfolio Committee. We will seek to meet with Eskom once a quarter as joint committees to monitor progress and carry out our other oversight responsibilities, and over time, pursue the possibility of a joint strategy and programme for the committees.
- 3.15 The Committees need to explore the possibility of securing the services of an energy specialist to assist us to be more effective in our oversight role



## ANNEXURE A

1. Mr A Mlangeni (ANC) felt that Eskom's presentation was technical and complex, and he requested a 'simple' explanation for the power failures in the Western Cape that could be conveyed to members of his constituency. Minister Erwin said that, 'in simple terms', a very serious accident caused the closure of Unit 1 at Koeberg, resulting in the loss of 900 MW of power and the subsequent power shortages in the Western Cape.
2. Mr S Dithebe (ANC) suggested that Eskom should investigate the use of fuel cell technology and research the harvesting of energy from landfills in order to augment its generation capacity. He asked how Eskom planned to distribute compact fluorescent lamps (CFLs) as part of its plan to introduce energy-efficient lighting. Mr Gcabashe replied that of the 5 million CFLs that would be distributed, 1.875 million would be distributed free of charge, door-to-door, while the balance would be made available at cost through government agencies.
3. Advocate H Schmidt (DA) noted that Cabinet had adopted a White Paper in 1998 that indicated that the Department of Minerals and Energy should invite foreign companies to invest in energy projects in SA. Why had the Department failed to adhere to this policy? Deputy Minister Xingwana answered that the collapse of energy markets around the world during 2001 caused government to review its policy on the privatisation of energy supplies. Government decided to strengthen Eskom so that it would provide 70% of SA's energy needs, while private companies would provide 30%.
4. Advocate Schmidt commented that the suggestion by the Minister for Minerals and Energy, Ms L Hendricks, that possible sabotage at Koeberg was politically motivated was 'unfortunate on the eve of an election'.
5. Mr C Morkel (PIM) enquired whether the French government had attached any conditions to the spare rotor that it was offering as a replacement for the damaged rotor at Koeberg Unit 1. Mr Erwin responded that the French and SA governments had agreed that once the damaged rotor from Koeberg Unit 1 was repaired, it would be sent to France in exchange for the spare rotor that France had offered. The SA government had also agreed to underwrite the risk that France would need to buy electricity from another country if their rotor malfunctioned during the period in which they were without a spare.

6. Mr Morkel observed that environmental impact assessments on Eskom's building projects to improve electricity generation capacity would lengthen the time frames for these projects. He suggested that the relevant laws could be amended to reduce delays to building projects caused by environmental impact assessments.
7. Mr J Stephens said (DA) stated that Eskom had demonstrated inadequacy in the area of technical risk management. Although specific problems affecting electricity supply, such as fires, were unforeseeable, generic problems were foreseeable and should be addressed by contingency measures. What was the status of technical risk management at Eskom? Minister Erwin replied that, in order to deal with such a configuration of events as led to power failures in the Western Cape, Eskom would need to build a much larger generation capacity. Government would need to consider this matter in future, taking into account implications of cost and excess capacity. Mr Gcabashe added that Eskom had a separate risk management department that determined the top ten risks in the organisation and reviewed these each quarter.
8. Mr Stephens expressed concern over the environmental impact of coal-fired power stations that Eskom was planning to build. As an alternative, Eskom should consider building power stations in agricultural areas where bio-diesel could be used as a fuel. Deputy Minister Xingwana responded that the Department of Minerals and Energy was also concerned by the ecological effects of the use of coal as an energy source, and it was in the process of developing a policy on bio-fuels. The economy was growing so rapidly that a variety of energy forms, such as coal, nuclear energy, and renewable energy, should be used. Mr Gcabashe added that coal was the most abundant resource that could be used to meet the increasing energy consumption in SA. Eskom was aware of the environmental impact of coal-fired power stations, and was investigating methods of reducing carbon-dioxide emissions from these stations.
9. Mr E Lucas (IFP) asked whether the problems with electricity supply in the Western Cape would affect the government's programme for providing electricity in all areas of the country. Mr Gcabashe stressed that Eskom would definitely meet its national targets for extending the electricity supply infrastructure in the next two years.
10. Mr Lucas queried whether gas-fired power stations could be established using the gas reserves on the west coast. Mr Gcabashe replied that Eskom was monitoring the progress of companies that were prospecting for gas on the west coast.
11. Ms N Kondlo (ANC) noted that although Eskom was investigating possible sabotage at Koeberg Unit 1, it had not given an assurance that such an incident would not recur. Some of the reasons for the power shortages in the Western Cape were unforeseeable, while others, such as increased demand caused by economic growth, should have been foreseen. Eskom's presentation showed that there was a



high risk that power failures would recur in the Western Cape during the period in which Koeberg Unit 1 was closed down.

12. The Co-Chairperson, Mr Carrim (ANC), commented that Eskom's assertion that the power outages in the Western Cape had not undermined economic growth, as infrastructure investment to increase generation capacity would improve economic growth, was 'credible'. However, this response did not translate into a practical answer that members could repeat in their constituencies. Eskom should explain clearly whether power failures would recur in the Western Cape. Mr V Moosa responded that Eskom, together with members, should develop an 'appropriate message for the public' explaining the reasons for the power failures. Although Eskom could not guarantee that power failures would not recur, it was making every effort to avert a future electricity supply crisis. The possibility of foreseeing power failures in the Western Cape depended on the broader economic situation that was projected. Behind the question of whether Eskom should have foreseen the possibility of power shortages was the question of Eskom's credibility. This should be evaluated according to Eskom's record.
13. Mr C Gololo (ANC) asked whether the Western Cape would experience power outages in 2007 and 2008. Mr Moosa stated such power outages would not occur. Mr Gololo enquired further whether the power shortages in the Western Cape would affect the government's programme for supplying electricity to rural areas. Deputy Minister Xingwana asserted that the Department of Minerals and Energy was committed to its programme for electrifying rural areas.
14. Mr C Kekana (ANC) asked whether Eskom considered nuclear energy a long-term alternative to fossil fuels. Mr Moosa replied that Eskom did not consider nuclear energy as the alternative to coal, but rather as one of the options for future energy projects.
15. Mr L Greyling (ID) stated that whatever the outcome of the investigation into the incident at Koeberg Unit 1, a breach had taken place, whether this was a security breach or a mechanical breach. Mr Erwin conceded that a breach had taken place and reiterated that Eskom would provide members with details of the investigation on its completion.
16. Mr Greyling claimed that, while energy-intensive investors may not be retreating from SA as a result of power failures in the Western Cape, the investment climate in Cape Town had been adversely affected. Did the government plan to compensate businesses in the Western Cape that faced liquidation as a result of power failures? Minister Erwin expressed regret over the losses incurred by businesses in the Western Cape during the power failures. However, power outages were a business risk. Government could not be held responsible for business risks as this was a matter of insurance. The appropriate forum for businesses to discuss this was the risk committee established by the Premier for the Western Cape.

17. Mr Greyling was concerned that the bulk of Eskom's research and development budget was allocated to research into nuclear energy rather than renewable energy forms. Deputy Minister Xingwana replied that renewable energy forms were not affordable, and SA was following the example of many other countries, such as the United Kingdom and Germany, by researching into nuclear energy. Mr Erwin added that 'every major economy' was engaged in the debate on renewable energy forms. Systems such as the wind generation system in Europe were heavily subsidised and therefore not economically viable for developing economies.
18. Professor I Mohamed (ANC) queried whether the Department of Minerals and Energy had formulated a nuclear waste management policy, and whether it possessed an evacuation strategy in the case of a nuclear event at Koeberg. Deputy Minister Xingwana responded that the Department had drawn up a 'radioactive' policy which included a strategy for nuclear waste management. The Department would continue to research nuclear waste management, and would plan for excess nuclear waste over a twenty-year period.
19. Professor Mohamed recalled that in 2002-2003, Eskom requested an electricity price increase of 7%-8% for the purpose of building more power stations, but was denied by government. Deputy Minister Xingwana confirmed that the decision taken by government was correct as there was no need for a price increase at that time.