

ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

EIA: 12/12/20/944

**FOR THE PROPOSED ESKOM NUCLEAR POWER STATION AND
ASSOCIATED INFRASTRUCTURE**

**ISSUES RAISED AT KEY STAKEHOLDER WORKSHOP HELD IN
SPOEGRIVIER ON 11 OCTOBER 2007**

RECORD OF ISSUES RAISED AND DISCUSSED

Note: Should you as a participant at the meeting not agree to the way in which ARCUS GIBB has captured your issue, please submit your requested changes in writing to ACER within two weeks of receiving this document

No	Name & Organisation	Issue/Comment/Concern	Response
1	Ms Annelise Le Rouw Succulent Karoo Knowledge Centre, Kamieskroon	Five alternative sites are being considered. Will a Nuclear Power Station (NPS) be constructed at each of the five alternative sites?	<p>This EIA is for the first nuclear power station, and is looking at 5 alternative sites. The EIA will look at the environmental carrying capacity for each site.</p> <p>Since Eskom is investigating up to 20 000 MW of nuclear power, it is possible that all 5 sites will eventually be utilised, should they be found to be technically and environmentally feasible and the required approvals are obtained.</p>
2	Mr Andy Pienaar Namaqualand Action Group for Environmental Protection	Eskom says that 20 000 MW of electricity is needed to meet future demand in South Africa. One NPS gives 4 000 MW of power. We were told that some of the alternative sites might be screened out during the Scoping Phase. That would mean that other sites would need to be looked at to provide the amount of electricity ultimately needed. What mechanisms are in place to ensure that other sites will be identified timeously should the need arise?	<p>The maximum capacity for each site will be assessed and identified as part of the EIA. The EIA and nuclear licensing processes will determine the viability of each site. However, should all sites be found to be technically and environmentally feasible, all 5 sites may be used in the future.</p> <p>Eskom will initiate the processes required for siting of the future proposed nuclear power stations at the appropriate time.</p>
3	Mr Helmut Johan Kamieskroon	All the alternative sites are along the coast. Will the NPS be similar to that of the Koeberg NPS in design?	The proposed NPS will be like the Koeberg NPS but will be a more advanced version of the technology being used there. The proposed NPS is of the Pressurised Water Reactor (PWR) technology type. Water is scarce in South Africa. This is why it is ideal to use water from the sea for cooling instead of ground or fresh water resources. Inland

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		<p>What is the footprint of a solar power station?</p> <p>One NPS will generate huge amounts of electricity. If it fails, huge areas will not have electricity.</p> <p>There has been so much talk about the proposed Pebble Bed Modular Reactor (PBMR), but the public does not know a lot about this. I know that a lot of research is being undertaken and much money is being spent on this. The perception is that a PBMR facility can be developed far away from water sources.</p>	<p>stations would use ground- or freshwater.</p> <p>One solar power station of 100 MW capacity is approximately 4 km² in extent.</p> <p>Comment noted. Eskom supplies electricity to South Africa via the national transmission network. Eskom has more power stations installed than what is actually required by the demand for electricity at any point in time. This is called “reserve margin”, and provides for reserves of generating capacity to enable power station units to be shutdown for scheduled maintenance, as well as provide for unexpected shutdown of power station units for repairs when there are failures. However, Eskom’s reserve margin is low, at between 8–10 %, while the international norm is at least 15 %. Hence Eskom’s expansion plans take into account the need to build sufficient power stations so that the reserve margin increases to above 15%.</p> <p>If authorisation is given, the proposed PBMR will be implemented as a demonstration plant. The size of the proposed PBMR has increased, and hence the EIA has been initiated again. A decision whether or not the proposed PBMR will be constructed will be taken next year. If authorisation is received, the plant will be constructed to demonstrate its commercial viability. If found to be viable, Eskom intends to order approximately 20 PBMRs for construction at suitable sites around the country. This is</p>

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			<p>over an above the conventional NPSs planned. The PBMR uses helium gas to drive the turbo-generator. This hot gas needs to be cooled after it has passed through the turbine. Water is used for this cooling. It is a misconception that water is not required for the PBMR.</p>
4	<p>Mr Andy Pienaar Namaqualand Action Group for Environmental Protection</p>	<p>With the current and increasing power cut outs being experienced nationally, would it not be a solution to construct PBMRs in smaller communities? This would ensure that they are not affected when the larger power stations are down for outages etc.</p> <p>With regard to alternative generation types: The wind</p>	<p>It is Eskom's stance that ALL of the primary energy resources including solar, wind, wave, ocean current, tidal energy, biomass, hydro, gas, coal and nuclear need to be harnessed using the appropriate technology to provide the electricity that South Africa requires to support its economic growth and development.</p> <p>Eskom currently does not have enough power stations to provide sufficient electricity to the country and maintain a reserve margin of 15%. Hence Eskom's capacity expansion plans take into account the need to build sufficient power stations so that the reserve margin increases to above 15%. The expansion plans take into account the need to construct power stations in different parts of South Africa to improve the reliability and security of electricity supply.</p> <p>PBMR technology, once demonstrated to be commercially viable, would form part of the capacity expansion programme. However, the PBMR would not by themselves be sufficient to meet South Africa's electricity requirements.</p> <p>Government is encouraging the establishment of</p>

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		turbines are being constructed in Namaqualand. How is Eskom supporting those companies/ individuals erecting the wind farms?	Independent Power Producers (IPPs). Eskom engages with IPPs where appropriate to negotiate long term power purchase agreements.
5	Mr Helmut Johan Kamieskroon	<p>If the proposed NPS is built at Brazil, where will it get connected to the network?</p> <p>The Kudu to Saldanha transmission lines were considered and will most likely link with the network. Some electricity will be lost if the electricity needs to be transported over great distances. My personal advice to Eskom and the EIA Team at the time, was that the transmission lines will be built across Boesmanland. I provided an alternative route around Namaqualand, along and down the Orange River, through Springbok and then South. Namaqualand is reliant on tourism. To construct transmission lines across tourist areas will negatively impact tourism in the Namaqualand. My alternative was shot down.</p>	<p>Transmission lines would connect the proposed NPS to the transmission network.</p> <p>Comment noted. There are indeed losses associated with long transmission lines</p>
6	Mr Andy Pienaar Namaqualand Action Group for Environmental Protection	<p>The Kommagas community requested that the Kudu to Saldanha transmission lines cross through their area in order to benefit from the servitude fees. The community also asked Eskom about the distances of the lines in order for them to connect to the main transmission grid. Is there a way to ensure that the transmission lines do not loose electricity i.e. by swoping cables etc.?</p> <p>The people of Spoegrivier and Soebatsfontein are uninformed of the proposed NPS and have not received Background Information Documents (BIDs) prior to this meeting. For example, they need to understand the</p>	<p>Comment noted.</p> <p>Unfortunately no technology has been developed that will result in zero losses when transmitting electricity over long transmission lines. However, designers are always investigating means to make the systems more efficient and to reduce the amount of losses as far as possible.</p> <p>These project announcement meetings in Spoegrivier and Soebatsfontein are aimed at introducing the communities to the proposed project, the EIA and the overall project programme. The BIDs have been distributed and the</p>

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		<p>programme for the proposed NPS - when will they start constructing in 2009 and operating the NPS in 2016?</p> <p>What is the construction cost of the one of the proposed NPSs? What is the cost of construction of the associated transmission lines? What are we talking about if we don't know the design of the proposed NPS? It is not complete. What is the cost of closure of the proposed project?</p>	<p>communities have many opportunities, as detailed in the presentations given, to interact with the EIA Team and comment on the proposed project. Eskom's aspiration is to start operating the first NPS later in the second half of 2016. This obviously is dependant on gaining all the authorisations and approvals required by 2009/10, and that the construction programme does not take more than six years.</p> <p>Eskom anticipates that negotiations with the suppliers of the different plant types of the PWR technology will start towards the end of 2007. Hence Eskom has not yet finalised the cost of construction of the proposed NPS. The cost of a larger coal-fired power station is estimated to be R80 billion. The proposed NPS will cost more than this. It is also dependent on the site that is chosen for the proposed power station. Similarly the cost of the transmission lines is dependent on the site that is eventually chosen for the proposed power station and the routes that are authorised for the transmission lines. Thus these costs have also not yet been finalised.</p>

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7	Mr Andy Pienaar Namaqualand Action Group for Environmental Protection	<p>For the proposed NPS, if it is for people in Gauteng or elsewhere in South Africa why not build it there? At the proposed Kudu gas project meeting, we were told that people of Namaqualand use too little electricity. Who is the electricity for? A gas power station at Hondeklipbaai would be more suitable than a NPS for these small communities. Will the electricity produced at the proposed NPS also supply the local communities?</p> <p>This Spoegrivier community received the BID too late. If they got it before today's public meeting they would have been able to better participate.</p>	<p>Eskom supplies electricity to South Africa via the national transmission network. Power stations need to be constructed in different parts of South Africa to improve the reliability and security of electricity supply to the whole country. From the transmission network, electricity is supplied to the distribution system and then to towns and communities.</p> <p>Comment noted. All I&APs will have numerous opportunities to comment over the next 18 months.</p> <p>A nuclear awareness programme is also presently being rolled out by Eskom. This programme has been initiated in the Port Elizabeth (Eastern Cape) area and will probably reach the Northern Cape by early next year.</p>
8	Mr Abe Beukes Advice Office	<p>It's the second time that the Koeberg NPS is being used as an example. It's the first time that I hear about seawater being used. If the water is 20 °C warmer when it is released, what are the impacts on marine life as a result of this heating?</p>	<p>At the Koeberg NPS, water is returned to the sea 10 °C warmer. Oceanographic and marine biology specialist studies will be undertaken as part of the EIA to determine the potential impacts of the proposed NPS on marine life, if any.</p>

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9	Ms Annelise Le Rouw Succulent Karoo Knowledge Centre, Kamieskroon	The warming of the sea will have an effect as the heat of the heated seawater has to end up somewhere. That will eventually have an effect on climate change. Namaqualand relies on the cold Benguela for economic activities and the warming effects will result in potential negative socio-economic impacts.	The effect on climate change will be considered as part of the climatology specialist study to be undertaken during the Impact Assessment Phase of the EIA. The climatology specialists' findings will also be made known to the other specialists (e.g. botanical, faunal, fresh water ecology, marine etc) in order for them to consider these aspects in their studies.
10	Mr Abe Beukes Advice Office	Will the radioactive waste from the proposed NPS be disposed of at Vaalputs? Will the proposed project be looking at alternative locations for the disposal of radioactive waste? The impacts of the transportation of waste from the proposed NPS must be considered as well as the poor road conditions in the Northern cape, where Vaalputs is located.	For the proposed nuclear power station, Eskom intends to follow the same practices for the management of radioactive waste as is used for Koeberg nuclear power station, under the regulatory control of the National Nuclear Regulator and subject to the requirements of the National Radioactive Waste Management Policy and Strategy and any associated legislation or regulations. Thus, it is anticipated that the Vaalputs Waste Disposal Site will be used for the disposal of low- (LLW) and intermediate-level (ILW) radioactive waste. Every 4 or 6 months a truck will transport the radioactive waste from the proposed NPS to Vaalputs. The assessment of the impacts of the transportation of radioactive waste will be considered in the EIA. It is noted that the roads in the Northern cape, and elsewhere in South Africa, are in a poor condition.
11	Ms Annelise Le Rouw Succulent Karoo Knowledge Centre, Kamieskroon	Who will maintain the infrastructure (e.g. roads used by the construction and operation vehicles) in the region around the proposed NPS?	The potential impacts on traffic and the road infrastructure will be investigated in the Impact assessment Phase of the EIA and recommendations made regarding mitigation and rehabilitation of the roads as a result of construction activities.

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12	Mr Andy Pienaar Namaqualand Action Group for Environmental Protection	<p>The Vaalputs Waste Disposal Site falls within the Northern Cape. If by 2025 we have 5 new NPSs, then automatically the footprint of the Vaalputs will need to be increased due to the increased amounts of radioactive waste being disposed of there. Vaalputs would therefore increase in volume and this will result in the relocation of people living close to Vaalputs.</p> <p>When the proposed NPS and other NPSs are decommissioned, the waste will have to be disposed of at Vaalputs. This puts more pressure on the Namaqualand people and roads.</p> <p>There is an intention to start a uranium mine close to Kommagas.</p> <p>What is the programme for construction of the NPS?</p>	<p>The Vaalputs Waste Disposal Site is a relatively large landfill site. Only 1 - 2% of Vaalputs is currently being used. There is thus more than enough disposal area at Vaalputs to accommodate the radioactive waste from the proposed 20 000 MW of nuclear power that would be in operation for approximately 60 years, if the necessary authorisations and approvals are obtained.</p> <p>Comment noted. Cumulative impacts of the transport of radioactive waste will be considered as part of the EIA.</p> <p>Comment noted.</p> <p>Eskom hopes that construction of the proposed NPS will commence in late 2009 or early 2010, subject to all the necessary authorisations being received.</p>

APPENDIX 2: PRESENTATIONS

Eskom's Strategic Planning Overview

Note: The size of this presentation is 4.21 MB.

Environmental Impact Assessment (Technical and Public Participation) Process

Note: The size of this presentation is 2.40 MB.

Both presentations can either be downloaded on the website (www.eskom.co.za/eia) or requested from ACER (Africa) at nuclear1@acerafrica.co.za or 086 010 4958

APPENDIX 3: ATTENDANCE REGISTERS

Please note: Attendance Registers can only be made available upon request