

ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

EIA: 12/12/20/944

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

**PUBLIC MEETING – TOWN HALL, PORT NOLLOTH
10 OCTOBER 2007**

PREFACE

The Independent EIA Project Team (“the EIA team”) wishes to thank the many Interested and Affected Parties and representatives of various organisations and sectors, who attended the notification round of public meetings for this environmental impact assessment.

The presentations at the meetings were uniform in nature and, therefore, one set of proceedings has been prepared. A summary of the presentations is provided in Appendix 2. Also, stakeholders raised a variety of issues at the meetings and for, ease of reference; these have been captured in tables in Appendix 1, providing stakeholders from the meetings with an opportunity to cross-reference issues raised at the respective meetings.

Should participants who attended the meetings require any changes to these proceedings, please notify the Public Participation Office (ACER Africa [ACER]) in writing within two weeks of receipt.

In some instances the name and organisation of the stakeholder were not provided, and hence, these details are not captured in these proceedings. Should you as a participant recognise your input, it would be greatly appreciated if you could provide ACER with your details.

There are three sets of minutes:

- Set A - Public Meetings.
- Set B - Key Stakeholder Workshops (per province, i.e. Eastern, Northern and Western Cape provinces).
- Set C – Various Focus Group Meetings (as requested by stakeholders)

All minutes are part of the public record and have been placed on the website www.eskom.co.za/EIA under the “Nuclear1” link. Should you wish to receive a specific set, kindly request them from the Public Participation Office

These minutes have been:

Compiled by: ARCUS GIBB (Pty) Ltd

Reviewed by: ARCUS GIBB (Pty) Ltd

Accepted by: Eskom Holdings Limited, Generation and Enterprises Divisions

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1. ATTENDANCE

1.1 Attendance - Interested and Affected Parties

As per the attendance register, the meeting was attended by 9 I&APs. Please see Appendix 3 for the attendance register.

1.2 Attendance – Eskom Holdings Limited

The following Eskom representatives attended the meeting:

Name	Eskom Division	Position/Role
Mr Tony Stott	Enterprises Division Nuclear Programmes	Senior Manager (Nuclear Stakeholder Management)
Mr Tyrone Singleton	Generation Division Environmental Management	Chief Environmentalist

1.3 Attendance – Independent EIA Consulting Team

Name	Organisation	Role
Ms Jaana-Maria Ball	ARCUS GIBB (Pty) Ltd	EIA Project Manager
Ms Rashieda Thomas	ARCUS GIBB (Pty) Ltd	Environmental Scientist
Ms Karin Bowler	Karin Bowler Enterprises	Facilitator

2. WELCOME, INTRODUCTIONS AND OBJECTIVES OF MEETINGS

2.1 Introductory Remarks

The Facilitator, Ms Karin Bowler welcomed all those present and introduced the Project Team. She then thanked them for their participation in the Environmental Impact Assessment (EIA) for the proposed Eskom Nuclear Power Station (NPS).

In an attempt to determine the preferred language of the attendees, Karen Bowler asked them what language they understood. All attendees understood English. Ms Bowler stated that the stakeholders were welcome to speak in their own language when making comments. The Eskom presentation was delivered in Afrikaans and the EIA presentation in English.

2.2 Objectives of the meetings

By way of introduction, the Facilitator stated that these meetings were intended to announce the Environmental Impact Assessment (EIA) for the proposed Eskom Nuclear Power Station and associated infrastructure, and thus constituted the first engagement as part of the EIA process. Hence this was the first opportunity to introduce the EIA project, and the EIA Team

and people that Interested and Affected Parties (I&APs) will need to engage with during the EIA process.

It was noted that the public consultation process had started a few months before and that the previous meetings were intense. Focus Group Meetings (FGMs) were also previously held as well as Key Stakeholder Workshops (KSWs), which allowed for the engagement to be at a more strategic level.

The primary objectives of the meetings were as follows:

- To introduce and provide Interested and Affected Parties (I&APs) with an overview of the proposed development by Eskom and to introduce the EIA Team and the relevant Eskom personnel.
- To provide I&APs with an overview of the EIA process including opportunities available to I&APs at the various stages of the process.
- To provide an opportunity for I&APs to comment, ask questions and raise issues to be addressed by Eskom and the EIA Team. This includes identification of issues and concerns for inclusion in the Draft Scoping Report.
- To undertake constructive debate and discussion.

3. MEETING PROCEDURES

The Facilitator presented procedures to assist with smooth running of the meetings. The Facilitator further encouraged all present to make use of the opportunities provided and make positive contributions. This included making use of rights enshrined in the Constitution, and the responsibilities and conditions attached to individual rights. The facilitator informed participants that presentations would last approximately 20 – 25 minutes each. After the first presentation, five minutes was allowed for clarification of certain issues. At the end of the presentation session, time was allowed for stakeholder to raise questions and make comments. It was stated that further comments may also be submitted in the commenting period after the meeting.

4. ESKOM'S STRATEGIC OVERVIEW - PRESENTATION

The summary of the information presented is provided below. The issues raised and discussed following each presentation are summarised in Appendix 1.

Mr Tony Stott, Senior Manager, Nuclear Stakeholder Management, Eskom Enterprises Division presented a strategic overview. The following sections were covered in the presentation:

- Overview of electricity demand and supply in South Africa
- Primary energy resources and technological options for South Africa
- Major strategic drivers for nuclear power
- The proposed Nuclear-1 conventional nuclear power station

4.1 Overview of electricity demand and supply in South Africa

- From the 1980s through to early 2000s, the growth in demand for electricity followed a trend averaging between 2 and 3 % per annum. However, over the past few years the annual growth in peak demand for electricity has been higher than an average of 4% per annum.
- The Government's Accelerated and Shared Growth Initiative for South Africa (ASGISA) is aiming for the economy to grow by approximately 6% per annum into the future. An annual growth of 6% in the economy implies an annual growth of approximately 4% in the demand for electricity.
- Eskom planning into the future is therefore based on an average annual growth rate in the demand for electricity capacity of 4%.
- In 1980, the demand for electricity, the peak demand, was below 20 000 MW. The peak demand has continued to increase compared to previous years; this year the peak demand was just over 36 000 MW (the peak demand was recorded on 5 July 2007 at 36513 MW).
- At 4% annual growth in the demand for electricity, the peak demand will increase to just below 80 000 MW by 2025.
- Eskom's net electricity generating capacity is currently just below 40 000 MW. In addition Eskom imports approximately 1000 - 1500 MW of electricity capacity from Cahora Bassa in Mozambique (less when maintenance or repairs are being undertaken at Cahora Bassa or on the transmission lines between Cahora Bassa and South Africa). Eskom will thus need to have added more than 40 000 MW of new power stations to its existing electricity generating capacity in order to be able to meet the projected demand for electricity in 2025.
- Power stations do not last forever. They are maintained, and components can be repaired or replaced when necessary, but eventually it is no longer economically viable to operate, and it becomes more cost effective to shut down the old power station and construct a new power station. Hence in addition to meeting the projected demand, Eskom also needs to prepare for the replacement of power stations that will reach the end of their economic life span after approximately 2025.
- The challenge is to correctly match the supply and demand; economic growth and development will be hampered if the supply of electricity does not match the demand.
- Choosing the best options for electricity generation and the planning for the construction of new power stations must also consider the different types of power stations that are required and their cost (which impacts on the price of electricity), the time taken to construct them, the environmental considerations and their operating characteristics. The total demand for electricity in South Africa is not constant; rather it varies on a 24-hour basis, with peak demand in the early morning and in the late afternoon / early evening. To optimally meet the total demand, it is thus necessary to have both "base load" electricity generating power stations designed specifically to generate electricity continuously at all hours, as well as "peaking" electricity generating power stations designed specifically to generate electricity only during the periods of peak demand. This is achieved by harnessing different energy sources and applying different technologies.
- In South Africa, coal and nuclear power is used for base load electricity generation, while the open cycle gas turbines (using liquid fuel, such as diesel), the two small hydro electric power stations on the Orange River, and pumped storage schemes, are used for peaking and emergency electricity generation.

- In October 2004, the South African Cabinet took the decision that Eskom will be responsible for at least 70% of the new electricity generating capacity that is required, with Independent Power Producers being responsible for the remaining 30%.

4.2 Primary energy resources and technological options for South Africa

- **Coal** is the primary energy source for electricity generation in South Africa - approximately 90% of electricity generation in South Africa is by coal-fired power stations. Eskom coal-fired power stations are specifically designed to burn low-grade coal, which otherwise would not be utilised and would be a waste product from the coal mines. South Africa has significant coal resources and hence coal will continue to be used in the future. However using coal to generate electricity also has its disadvantages: the transportation of coal is very expensive and hence coal-fired power stations are located as close to the mines as possible to maintain their economic viability - this implies that coal-fired power stations are located inland and hence, if wet-cooled, use considerable quantities of scarce water resources, or if dry-cooled are less efficient and still use quantities (although much less) of scarce water resources; the burning of coal gives rise to pollutants – in particular the burning of coal gives rise to emissions of carbon dioxide (CO₂), a greenhouse gas, which contributes to climate change. Eskom continues to monitor and investigate the progress internationally with the commercialisation of more efficient coal-fired power stations. Eskom is also researching underground coal gasification as a means to generate electricity from coal – a pilot facility is being established in Mpumalanga Province near the Majuba coal-fired power station. Eskom also monitors and participates in international forums investigating the possibility of capturing and storing carbon dioxide emissions.
- **Gas:** South Africa's indigenous resources of natural gas are currently not available in sufficient quantities to fuel power stations – hence the South African Open Cycle Gas Turbines use liquid fuel (e.g. diesel). The Open Cycle Gas Turbines are used to help meet the demand for electricity during peak and emergency demand situations since they are very expensive to operate (the diesel price is linked to the dollar price of oil and also is subject to foreign exchange rates). In 2006/7 Eskom constructed two new Open Cycle Gas Turbines in the Western Cape Province, viz. Ankerlig power station at Atlantis, and Gourikwa power station at Mossel Bay, with a combined capacity of just over 1000 MW. Eskom has submitted the necessary environmental and other applications to extend these two power stations by an additional total 1000 MW. Eskom is continuing to investigate being able to access natural gas from the Kudu gas fields in Namibia, the Ibhubesi gas fields off the west coast of South Africa, the gas fields in Mozambique and liquid natural gas from international markets, to generate electricity in combined cycle gas turbine power plants. If sufficient natural gas becomes economically available (the gas price is also linked to oil prices and subject to foreign exchange rates), the possibility exists to convert the new Open Cycle Gas Turbines to combined cycle gas turbines.
- **Renewable energy: Hydro power:** South Africa is a water scarce country and does not have large rivers for hydro power. Eskom has two hydro power stations on the Orange River, the 360 MW (4 units each 90 MW) Gariep power station and the 240 MW (2 units each 120 MW) Vanderkloof power station. The use of these two stations is restricted to peak and emergency electricity demand situations, subject to the availability of water in the Gariep and Vanderkloof dams. Investigations are in progress for an upgrade at Gariep power station.

- **Wind energy:** An EIA is currently in progress for a wind energy facility of 100 MW on the West Coast of South Africa (near Vredendal). Wind energy is an important complement to other forms of electricity generation. Since the wind does not blow continuously, and since, apart from pumped storage schemes which use more electricity than what they produce, large scale storage of electricity is not yet possible, wind energy cannot be relied upon for neither base load nor peaking or emergency electricity generation.
- **Solar energy:** An EIA has been undertaken and an environmental impact report has been submitted to the Department of Environmental Affairs and Tourism for a research and demonstration project for a concentrated solar thermal plant of 100 MW near Upington. Mirrors reflect the sunlight onto a central point. The project aims to research and demonstrate the heating of a molten salt at the central point in an intermediate step before boiling water and creating steam to drive a turbine and generate electricity. In principle the molten salt would retain its heat and hence be able to boil water and create steam after the sun is no longer shining. If all the necessary approvals are obtained, Eskom could start construction of the solar thermal plant in 2008/9. If constructed, it would be the biggest facility of its design in the world.
- **Efficiency programme:** Eskom is continuing to investigate ways to improve the use of electricity. Eskom has a demand-side management and energy efficiency programme target of 3 000 MW by 2012 and 8 000 MW by 2025. 8 000 MW is equivalent to avoiding the construction of two large coal-fired power stations.
- **Importing electricity via the transmission network:** Eskom already imports electricity from neighbouring countries, primarily from the Cahora Bassa Hydro Electric Power Station in the northern part of Mozambique. Between 1000 and 1500 MW hydro power capacity is imported from Cahora Bassa, although some of this (about 300 MW) is sent back to the Southern part of Mozambique via South Africa. Eskom is participating in a project to harness the hydro power potential of the Inga Falls on the Congo River in the Democratic Republic of Congo. This is a long term project which includes the construction of a very long transmission line from the DRC, through Angola and Namibia into South Africa and Botswana. So as not to become over-dependent on our neighbouring countries for electricity, Eskom will limit the import of electricity.
- **Nuclear:** South Africa is rich in uranium resources which can be used to generate electricity in nuclear power stations. Eskom is thus investigating expanding its nuclear power generation capacity to help meet the future demand for electricity.

It is Eskom's stance that ALL of these primary energy resources need to be harnessed using the appropriate technology to provide the electricity that South Africa requires to support its economic growth and development.

4.3 Major strategic drivers for Nuclear

- Eskom needs new base load electricity generating capacity – only coal and nuclear power can at this stage provide base load capacity
- Climate Change and the contribution made by the burning of fossil fuels such as coal to this phenomenon are gaining an increasing amount of attention, both nationally and internationally. South Africa needs to reduce its emissions of greenhouse gases and nuclear power is one of the options for Eskom to achieve this objective.
- One advantage of nuclear power stations is that, unlike coal-fired power stations, they can be cost-effectively located away from the source of fuel, and hence can be located

near the main economic growth centres. Currently, there is significant growth along the coast line (the Cape Town region in the Western Cape, the Port Elizabeth region in the Eastern Cape), and in the Upington/Sishen region in the Northern Cape. Locating power stations (of any kind) near the economic growth centres reduces the amount of electricity that has to be transmitted through the transmission network system and hence reduces the electricity losses incurred when transmitting electricity along long transmission lines.

- All thermal power stations need cooling of the steam used to drive the turbines. If located on the coast, they can use seawater for cooling and not scarce fresh water resources.
- If a coal-fired power station is located on the coast, Eskom would need to transport coal from the coal-fields in Mpumalanga or Limpopo Provinces to the areas where the power station is located. This is not economically viable. A large coal-fired power station of 3600 MW requires approximately 40 000 tons of coal per day when operating at full power. Assuming transportation by rail, that each train wagon can take a load of 80 tonnes, and that each train has 50 wagons, then 10 train loads of coal would need to travel from the coal fields and be off-loaded at the power station every day.
- A nuclear power reactor only requires to be refuelled once every 18 months with approximately 25 – 40 tonnes of fuel, depending on the size of the reactor. The fuel is easily transported to the nuclear power station from the factory where it is manufactured.
- South Africa has more than sufficient uranium deposits to meet the requirements for fuel for the proposed nuclear power station over its entire lifetime.

- ❖ Eskom requires 40 000 megawatts (MW) of additional electricity generating capacity to be constructed in phases over the next 20 years.
- ❖ The Eskom Board has approved the **investigation** of up to 20 000 MW of nuclear capacity by 2025. The other 20 000 MW will come out of other generation mixes, e.g. renewables, coal, gas etc.
- ❖ Eskom's target for savings associated with demand side management is 3 000 MW by 2012 and 8 000 MW by 2025. 8 000 MW is equivalent to two coal-fired power stations.

4.4 Nuclear Technology Selection

- Koeberg Nuclear Power Station has been safely operating for the past 23 years. The two nuclear reactors at Koeberg are the Pressurised Water Reactor (PWR) technology.
- Eskom, the National Nuclear Regulator (NNR), and the local suppliers of maintenance services are familiar with PWR technology.
- Eskom investigated the different nuclear power station technologies available in the world for large scale power stations and has deemed it prudent to continue with the PWR technology.
- The PWR technology for the proposed new nuclear power station would be a more advanced form compared to the technology used in the existing Koeberg Power Station.

4.5 Overview of the proposed nuclear power station infrastructure

A picture of a model of the Koeberg Nuclear Power Station and an aerial photograph of Koeberg were used to provide an overview of the infrastructure that would be required for the proposed nuclear power station. Some of the key features include the following characteristics:

- The footprint of the proposed nuclear power station is approximately 31 hectares.
- There are turbines, intake basin (uses sea water for cooling), administration buildings, transmission yard, engineering building, turbine hall (which consists of a turbine and generator), mechanical workshops, etc.
- Main security fence.
- Restricted area, which require permits to access.
- The conservation area, which is open to the public for recreational activities.

4.6 Regulatory Processes (associated with the nuclear power station)

- The Department of Environmental Affairs and Tourism (DEAT) is the lead environmental authority for the EIA for the proposed power station. Provincial environmental departments of the Northern, Western and Eastern Cape are commenting authorities. Five different sites are being investigated as part of the EIA.
- Transmission lines are required between the proposed power station and the existing national transmission network to enable the electricity generated by the proposed power station to be fed into the national transmission network. Separate EIAs will be undertaken for the proposed transmission lines. The EIAs for the proposed transmission lines will be co-ordinated to align as close as possible to the EIA for the proposed nuclear power station.
- An application for a nuclear installation licence will be submitted to the National Nuclear Regulator (NNR) in terms of the requirements of the National Nuclear Regulator Act. The NNR Act provides for the holding of public hearings.
- The NNR and DEAT will ensure that there is synergy between the Nuclear Licensing Process and Environmental Authorisation Process.
- An application to the National Energy Regulator of South Africa (NERSA) for an electricity generation licence will be made at the appropriate time.
- Zoning permits, water permits, disposal of domestic waste, and other authorisations will also be required. The respective applications to the relevant Authorities will be made at the appropriate time.

If all necessary approvals are obtained, construction could start in 2009 or early 2010 with the first unit coming into operation in late 2016.

The summary of the information presented is provided below. The issues raised and discussed following each presentation are summarised in Appendix 1.

Ms Jaana-Maria Ball, EIA Project Manager, ARCUS GIBB (Pty) Ltd presented an overview of the Environmental Impact Assessment (EIA) Process. The following sections were covered in her presentation:

- Project background, namely, the Nuclear Site Investigation Programme (NSIP) that was initiated in the 1980s. The NSIP considered the entire South African coastline and the study was undertaken in three parts, namely, the Eastern Cape, Southern Cape and Western Cape. This study looked at various criteria of the sites, such as hydrology, biotic environment, physical environment, cultural heritage, social and economic aspects. Some of these criteria may have changed since the NSIP was undertaken and these, as well as additional identified aspects, will be considered in the EIA. After the study was concluded, Eskom went about strategically acquiring some land of three of the five alternative sites identified as suitable. The two sites that are partly owned by Eskom are Bantamsklp and Thyspunt. The Keoberg site is fully owned by Eskom. Brazil and Schulpfontein is not owned by Eskom.
- Purpose of the EIA Process
- Framework for the EIA Process
- Responsibilities of the various EIA role players
- Environmental Impact Assessment
 - Scoping Phase – we are in the project announcement sub-phase of this phase
 - Impact Assessment Phase
- Potential Environmental Impacts both during construction, operation and decommissioning of the proposed NPS
- Public Participation Process (PPP). Apart from the EIA, Eskom is running a public awareness programme across the country. The programme will also be undertaken along the West Coast (Northern Cape). Although comment on BID closed on 28 August 2007, I&APs were encouraged to submit their issues, comments and concerns to ACER throughout the EIA. I&APs will have the opportunity to comment on the Draft Scoping Report (DSR). All stakeholders who are registered on the project database will be sent an Executive Summary of both the Scoping and Environmental Impact Reports.

Ms Ball noted that the presentations delivered by the EIA Team during the project announcement sub-phase of the Scoping Phase are exactly the same as the one posted on the project website, and the same presentation is delivered at all the meetings held in this phase. The proposed project includes many different specialist studies. Some of the specialists have already undertaken fieldwork in order to make use of the Spring season. The specialists involved are the most experienced specialists in the country and their CVs are available on the project website.

5. WAY FORWARD AND CLOSING REMARKS

5.1 Facilitators concluding remarks

The Facilitator stated that all issues raised had been captured and will be included in the minutes, which will be made available to stakeholders. She also reminded all stakeholders that all comments should be submitted to ACER using the various means available:

Tel: 086 010 4958
Fax: 035 340 2232
Email: nuclear1@acerafrica.co.za
Postal address: PO Box 503, Mtunzini, 3867
Website: www.eskom.co.za/eia on the "Nuclear 1" link

5.2 Submission of initial comments on Scoping

The original deadline date for the submission of comments during the project announcement sub-phase of the Scoping Phase was 20 July 2007.

Due to the large public interest shown in the proposed project, the initial Comment Period was extended by an additional five (5) weeks making the closing date 28 August 2007.

5.3 End of Comment Period and way forward

At the end of the Comment Period a Draft Scoping Report (DSR) will be prepared and made available to the public for review and comment. The DSR will be accompanied by an Issues and Response Report (IRR). All I&APs will have opportunities to review the report and to discuss its contents in public meetings, before it is finalised. Closer to the time, advertisements will be placed in the newspapers and letters will be sent to I&APs notifying them of exact details and venues for viewing the DSR and exact details concerning public meetings.

5.4 Thanks and Closure

The Facilitator thanked all stakeholders and the study team for their input and participation in the EIA and closed the meeting.

6. ISSUES AND COMMENTS RAISED AND DISCUSSED

The table presented below details all issues and concerns which were raised and discussed at the various public meeting.

Please note:

- ARCUS GIBB has tried to capture and reflect as accurately as possible all issues raised at the public meeting.
- Should you wish to edit your comments, please advise ACER within two weeks of receiving these minutes.
- In some cases a name was not captured during the public meetings, this in no way diminishes the value of the issue or concern raised.
- Should you identify your input and would like your name to be registered next to it, please advise ACER.

APPENDIX 1: 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 within two weeks of receiving this document

No	Name & Organisation	Issue/Comment/Concern	Response
1	Dr Schalk de Waal Marine Biologist	<p>A small-scale diamond operator lives and operates in from the Brazil site. He works for Trans Hex and moors his boat in a small bay on the site.</p> <p>There are three offshore diamond zones, extending seawards from the surf zone. The Department of Minerals and Energy (DME), based in Springbok, will have a list of companies, which has prospecting and mining permits/ rights for the extraction of minerals on or surrounding the Brazil and Schulpfontein sites.</p>	<p>Comment noted with appreciation.</p> <p>The EIA Team is aware of the operator with the name of 'Rocky'. He and his wife are registered stakeholders on this EIA and attended the public meeting in Kleinsee. The social and economic specialists will investigate the potential impact of the proposed Nuclear Power Station (NPS) on small-scale diamond operators and the potential impact of their activities on the proposed project.</p> <p>DME has been contacted by the EIA Team to provide information regarding current and future prospecting and/ or mining activities at each of the alternative sites.</p>
2	Mr L R Ambrosini Richtersveld Municipality	Wayne Gardener is in the process of erecting a wind farm in Port Nolloth area. This is being done through American funding.	Comment noted.

No	Name & Organisation	Issue/Comment/Concern	Response
3	Mr David Jason	How much water (used for cooling in the nuclear power generation process) comes in and how much exits the proposed NPS? Will there be an impact on the surrounding marine life?	<p>Sea water is used to cool the steam that drives the turbines.</p> <p>Using Koeberg (1800 MW) as an example, approximately eighty tons of sea water per second is taken through to the condensers in the turbine section of the plant. This water is discharged into the sea again at an increase in temperature of approximately ten degrees. Independent studies conducted by the University of Cape Town before Koeberg started operating and which have been ongoing since the operating of the station have shown no adverse effects on the marine life in the area (records are available from the University). The outfall of Koeberg has been designed in such a way that the warmer water mixes with and cools down to the ambient sea water temperature within 500 – 1000 metres from the point of discharge into the sea.</p> <p>This information is applicable to Koeberg site and must not be extrapolated to another site, as the dispersion and cooling of the outfall water depends on the receiving coastal conditions. This is also one of the studies that will be undertaken in the EIA. Marine specialists are part of the team contracted by the EIA Consultant to perform specialist studies.</p>

No	Name & Organisation	Issue/Comment/Concern	Response
4	Mr David Jason	<p>With regard to the projections cited regarding the expected growth of 4% per year - what will happen if the demand for electricity exceeds 4% per year per year? The EIA process for the proposed NPS is time consuming. What if in 2018 Eskom finds that the growth is 6% or more? There won't be time to do all the studies needed to approve the additional power generating facilities that would be required to supply the electricity demand.</p>	<p>The Department of Minerals and Energy (DME) has developed an Integrated Energy Plan (IEP) for South Africa, which looks at resources and considers what will best take care of energy requirements in South Africa. (refer DME website www.dme.gov.za). The IEP is currently being updated</p> <p>The National Energy Regulator of South Africa (NERSA) has developed a National Integrated Resource Plan (NIRP), specifically addressing the demand and supply of electricity in South Africa. (refer NERSA website www.ner.co.za). The NIRP is currently being updated.</p> <p>Eskom also performs integrated strategic electricity planning, projecting demand far into the future and evaluating the options for supplying that demand. Eskom's plans are reviewed and updated each year to ensure that appropriate actions are being taken to meet the future demand for electricity.</p>

No	Name & Organisation	Issue/Comment/Concern	Response
5	Mr David Jason	<p>Is there a difference between electricity and fuel?</p> <p>Is there not a regulating body that regulates pricing of electricity?</p>	<p>Electricity is a form of energy, used for electrical appliances, electronic equipment, lighting and heating.</p> <p>All matter inherently contains energy. Fuel normally refers to a material that can be processed in some way to extract its inherent energy and transform it into other forms of energy, such as light, heat, mechanical energy, electricity.</p> <p>For electricity power generation, the traditional fuels are coal, natural gas, liquid fuels (such as diesel), uranium etc. These are used in a power station to convert the energy inherently contained in the fuel into heat (boiling of water to create steam), mechanical energy (turning of the turbines) and eventually into electricity.</p> <p>The National Energy Regulator of South Africa determines the price of electricity.</p>
6	Mr Avron Thomas ANC Aukwatona	Namaqualand is very reliant on ground water resources. How does the burial of radioactive waste at Vaalputs impact the groundwater in the region?	<p>The Vaalputs National Radioactive Waste Disposal Facility is managed, operated and maintained on behalf of the State by Necsa, under a licence issued and monitored by the National Nuclear Regulator. Hence the question should be addressed to either Necsa or to the NNR.</p> <p>To Eskom's knowledge, the disposal of radioactive waste at Vaalputs has had no impact on the groundwater in the region.</p>

No	Name & Organisation	Issue/Comment/Concern	Response
7	Mr Avron Thomas ANC Aukwatona	How do you determine the difference between the life span of the low-level radioactive waste (LLW) (30 years half-life) and the intermediate-level radioactive waste (ILW) (300 years half-life)?	<p>Radioactivity is natural. The world, including human beings, is made up of radioactivity material. Consequently, everybody is always exposed to natural background radiation everyday from, for example, the earth itself, the materials from which buildings are constructed, the sun, and on a less regular basis from medical exposures (X-rays).</p> <p>The radioactivity of a material decreases with time. The "half-life" of a radioactive material is the time it takes to decrease its radioactivity by half. Half-lives range from fractions of a second to thousands of years. A time period of approximately 10 half-lives is required for the radioactivity of a material to decrease down to natural background radiation levels.</p> <p>Thus low-level radioactive waste (LLW) consists of materials with short half-lives, such that after approximately 30 years the radioactivity of the LLW has been reduced down to the same level as natural background radioactivity. Intermediate level radioactive waste needs about 300 years for its radioactivity to reduce down to natural background radioactivity levels.</p>
8	Mr Avron Thomas ANC Aukwatona	The storage of the waste will be studied, as separate studies to the EIA, to identify the best way to dispose of the radioactive waste. The impacts related to the storage of waste are still to be determined. How can approval be granted for a generation facility which will produce radioactive waste if the impacts of that waste is yet unknown?	The fundamentals of safe disposal of radioactive waste are very well understood. The safety and management of radioactive waste forms part of the nuclear safety assessment that is performed by the National Nuclear Regulator.

No	Name & Organisation	Issue/Comment/Concern	Response
9	Mr Avron Thomas ANC Aukwatona	Different types of generation alternatives have been mentioned. Has Eskom looked at wave energy as a means to generate electricity?	<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>Wave power generation is one of the alternatives that Eskom is researching. There are however economic considerations that need to be taken into account. The technology is still been assessed from a technical and economic viability perspective.</p>
10	Mr David Jason Teacher	What is the chance of electricity being cheaper in the future?	The National Energy Regulator of South Africa determines the price of electricity. Due to rising costs in everyday life it is unlikely that the costs of producing electricity will become lower in the future.
11	Mr Avron Thomas ANC Aukwatona	Government intends to make electricity available at cheaper rates for rural areas through efficiency initiatives and subsidising of electricity through the Regional Electricity Generator (REDs) programme.	Comment noted.

No	Name & Organisation	Issue/Comment/Concern	Response
12	Mr David Jason	Other studies should also have been undertaken to inform the EIA. A feasibility study should have been undertaken simultaneously with the EIA. What are the future prospects for this proposed NPS? Will the project team look at the sustainability of the power station in terms of the project's lifespan and the money that will be needed to operate it?	<p>Eskom conducts feasibility studies for all its power station projects. The Board of Eskom Holdings Limited satisfies itself that projects are financially feasible and sustainable before it approves projects.</p> <p>Eskom is also subject to the requirements of the Public Finance Management Act, and approval from the Ministers of Finance and Public Enterprises is required for its large projects.</p> <p>The National Energy Regulator of South Africa (NERSA) must also approve the development of any power station project before construction commences to ensure that these projects are sustainable.</p>
13	Mr L R Ambrosini Richtersveld Municipality	Who will fund the proposed project? Is the Government a shareholder?	<p>Eskom funds all its construction projects from retained earnings and from loans and bonds from national and international financial institutions.</p> <p>The Government is the sole shareholder of Eskom. Eskom pays tax and dividends to the Government. Eskom operates as if it is a private company.</p>

No	Name & Organisation	Issue/Comment/Concern	Response
14	Mr David Jason	If Eskom finds in 10 years that it is not cost effective to maintain the proposed NPS, then what will happen?	<p>Eskom's planning and feasibility studies are conducted on a life cycle basis – i.e. the projected costs and sustainability of the power station over its entire 50 – 60 year lifetime is taken into account in determining the future viability of a power station.</p> <p>The financial sustainability of all Eskom's power stations is continuously monitored to ensure their viability. The National Energy Regulator of South Africa (NERSA) also monitors the financial sustainability of power stations during its assessment of what the price of electricity should be.</p>
15	Mr Avron Thomas ANC Aukwatona	There will be continuous feasibility assessment as Eskom goes along.	Comment noted.
16	Mr David Jason	With reference to Government's intention to provide electricity to all South Africans, will Eskom be able to construct 3-4 new power stations to fulfil the Governments intention?	Eskom will need to have added more than 40 000 MW of new power stations to its existing electricity generating capacity in order to be able to meet the projected demand for electricity in 2025..
17	Mr L R Ambrosini Richtersveld Municipality	<p>How many NPSs are currently operating in South Africa?</p> <p>In terms of safety and health of the people and what happened in Chernobyl, how safe will the proposed NPS be it in terms of disasters?</p>	<p>Koeberg is the only nuclear power station operating in South Africa.</p> <p>The technology being considered for the proposed NPS is different to that used at Chernobyl. The technology at Chernobyl would never be approved in South Africa.</p> <p>The nuclear safety of, and the risk of a nuclear accident at the proposed power station will be independently assessed by the National Nuclear Regulator. The NNR will only issue a nuclear installation licence for the proposed power station if it is satisfied that the risk of an accident is acceptable low.</p>

No	Name & Organisation	Issue/Comment/Concern	Response
18	Mr Avron Thomas ANC Aukwatona	What will the influence of the cold Benguela current be on the proposed NPS?	The findings of the oceanography specialist study cannot be predicted at this early stage of the EIA, namely the project announcement sub-phase of the Scoping Phase of the EIA.
19	Mr Avron Thomas ANC Aukwatona	<p>Mines in the West Coast (Northern Cape) area have been operating for more than 50 years and 10% of the mineworkers are local residents. What type of job opportunities will be available at the proposed NPS, if built?</p> <p>Trans Hex vehicles are CA registered but they are driving on our roads. That means that they are paying levies to the Western Cape Government not the Northern Cape. What will Eskom do about this?</p>	<p>Although Eskom will require that the contractors make every effort to employ local labour where practical, this will be insufficient and hence outside labour will also be brought into the area.</p> <p>During construction it is expected to peak in the order of approximately 5 000 - 6 000 workers.</p> <p>Using Koeberg as an example, there are currently 1000 - 1200 permanent employees at Koeberg, i.e. under normal operating conditions. During shut down and maintenance periods, an additional 500 people are contracted and come onto site. The proposed power station would be about double the size of Koeberg; however the number of permanent employees is anticipated to be less than double the Koeberg requirements.</p> <p>This issue will be addressed in the social and socio-economic study as part of the EIA.</p> <p>Using Koeberg as an example: Many of the Koeberg employees live in Cape Town area but most of them have cars registered in Atlantis. Koeberg pays rates and taxes to the local authority. The proposed nuclear power station, if constructed, would also result in rates and taxes being paid to the local Authority.</p>

No	Name & Organisation	Issue/Comment/Concern	Response
20	Mr Avron Thomas ANC Aukwatona	<p>Do you have a database of the jobs that will be available if the proposed NPS were built?</p> <p>Putting up amenities will require a lot of permits etc. In order for the local man to get in to start a business associated with the proposed NPS will be impossible. The proposed NPS may result in a monopoly of associated businesses.</p> <p>Can the presentations be made available to present to school children?</p>	<p>The types of jobs that will be available if the proposed NPS is built are still to be researched. However, a list of the positions currently available at the Koeberg NPS will be used as a reference for the proposed NPS.</p> <p>Comment noted - this issue will be addressed in the social and socio-economic study as part of the EIA.</p> <p>Presentations are all available on the project website. A nuclear awareness programme is currently being rolled out nationally. It is Eskom's intention to visit the West Coast next January with the programme.</p>
21	Dr Schalk de Waal Marin Biologist	<p>Marine and Coastal Management is currently developing a national Aquiculture Policy. The Namaqualand Coast has been identified as a very good habitat for abalone. A ranching farm policy is currently being compiled and suitable areas for ranching will be selected. The sea ranching policy has emanated from the aquiculture policy. A contact person regarding the above is Mr Belamani.</p>	<p>Comment noted.</p> <p>The marine specialist will investigate these issues within the Impact Assessment Phase of the EIA. Subsequent to the public meeting Mr Belamani was contacted and added to the project database.</p>

No	Name & Organisation	Issue/Comment/Concern	Response
22	Mr Avron Thomas ANC Aukwatona	The proposed NPS should not be operated in a restricted area.	<p>Comment noted. Eskom will take this into consideration in terms of the impact on the financial viability and sustainability of the proposed power station.</p> <p>The nuclear safety of, and the risk of a nuclear accident at the proposed power station will be independently assessed by the National Nuclear Regulator. The NNR will only issue a nuclear installation licence for the proposed power station if it is satisfied that the risk of an accident is acceptable low. The impact of operating in a restricted area would be taken into account in such assessments.</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