

**ENVIRONMENTAL IMPACT ASSESSMENT (EIA)**

**DEAT REFERENCE NO.: 12/12/20/944**

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

**FOCUS GROUP MEETING  
EASTERN CAPE REGIONAL COASTAL WORKING GROUP  
30 AUGUST 2007**



## PREFACE

The independent Environmental Impact Assessment (EIA) Project Team (“the EIA Team”) wishes to thank all members of the Eastern Cape Regional Coastal Working Group, who attended the Focus Group Meeting as part of the notification round of meeting for the EIA for the proposed Nuclear Power Station (NPS) and associated infrastructure.

Should participants who attended the meeting require any changes to these proceedings, please notify the Public Participation Office 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 (Africa) Environmental Management Consultants (ACER) with your details.

There are three sets of minutes:

- Set A - Public Meetings
- Set B - Key Stakeholder Workshops
- 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](http://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:** ACER (Africa) Environmental Management Consultants  
**Reviewed by:** ARCUS GIBB (Pty) Ltd  
**Accepted by:** Eskom Holdings Limited, Generation and Enterprises Division

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## 1. ATTENDANCE

### 1.1 Attendance – Eastern Cape Regional Coastal Committee

Name	Organisation
Mr Arthur Croft	National Botanical Institute
Dr Derek du Preez	Nelson Mandela Metropolitan University
Miss Lorraine Egan	Kouga Local Municipality
Mr Morgan Griffiths	Wildlife and Environment Society of South Africa
Mrs Sue Hoffmann	East Cape Conservancy Association
Mnr Jan Kapp	Department of Economic Development and Environmental Affairs
Ms Zibu Ndikinda	National Ports Authority
Mr Pieter Retief	Department of Water Affairs and Forestry
ClIr Stanford Slabbert	Nelson Mandela Bay Municipality
Mr Johan Smuts	Bushmans Kariega Estuary Care Forum
Mr Hennie Swanevelder	Dept of Economic Development and Environmental Affairs, Seekoeirivier District Office
Mr Hilton Thorpe	St Francis Bay Residents Association St Francis Kromme Trust
Ms Megan Hope	East Cape Conservancy Association

### 1.2 Attendance – Environmental Consulting Team

Name	Organisation	Role in the project
Ms Jaana-Maria Ball	ARCUS GIBB	EIA Project Manager
Dr Norbert Klages	ARCUS GIBB	Environmental Scientist
Ms Bongji Shinga	ACER (Africa)	Public Participation Consultant

### 1.3 Attendance – Eskom Holdings Limited

Name	Organisation	Role in the project
Mr Tony Stott	Enterprises Division Nuclear Programmes	Senior Manager (Nuclear Stakeholder Management)

## 2. WELCOME AND INTRODUCTIONS

Mr Jan Kapp, Eastern Cape: Department of Economic Development and Environmental Affairs welcomed all present and thanked them for attending the meeting to discuss the proposed Eskom NPS.

Ms Jaana-Maria Ball, EIA Project Manager introduced the EIA Team members and the Eskom representative.

### **3. OBJECTIVES OF THE MEETINGS**

The primary objectives of the meeting were as follows:

- To introduce and provide the Eastern Cape Regional Coastal Working Group with an overview of the proposed development by Eskom and to introduce the EIA Team and the relevant Eskom personnel.
- To provide an overview of the EIA process including opportunities available to Interested and Affected Parties (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 (DSR).
- To undertake constructive debate and discussion.

### **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 NPS

#### **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 (CO<sub>2</sub>), 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 Mphumalanga 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 DEAT 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. In order to avoid an over-

dependency 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 Mphumalanga 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 NPS 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 NPS and an aerial photograph of Koeberg were used to provide an overview of the infrastructure that would be required for the proposed NPS. 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 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 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.**

## **5. ENVIRONMENTAL IMPACT ASSESSMENT PROCESS - PRESENTATION**

*The outline 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:

- Purpose of the EIA Process
- Framework for the EIA Process
- Responsibilities of the various EIA role players
- Environmental Impact Assessment phases
  - Scoping Phase
  - Impact Assessment Phase
- Potential Environmental Impacts
- Public Participation Process

## **6. DISCUSSION ON DRAFT INTEGRATED COASTAL MANAGEMENT BILL**

Ms Ball briefly discussed with participants the Draft Integrated Coastal Management Bill and its implementation once endorsed by parliament. The following key points were highlighted during the discussion:

- The Bill provides new measures to protect coastal areas from being degraded by inappropriate developments and pollution.
- It will establish a buffer zone inland of the high-water mark within which certain activities will be prohibited and additional development controls will be applied.
- It also gives government the power to prevent development too close to the sea by establishing 'set-back lines'. These measures are important not only to preserve the beauty of coastal landscapes but also to respond to threats posed by, for example, rising sea-levels associated with climate change or dynamic coastal processes

Based on the discussions, the project team could not pre-empt the implications of the Draft Integrated Coastal Management Bill (once enacted) on the proposed NPS. It was also clarified that the Draft

Integrated Coastal Management Bill cannot be a stand-alone document, it had to be read and interpreted within the context of all other policies, legislation and the South African Constitution.

## **7. WAY FORWARD AND CLOSING REMARKS**

### **7.1 Concluding remarks**

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](mailto:nuclear1@acerafrica.co.za)

Postal address: PO Box 503, Mtunzini, 3867

Website: [www.eskom.co.za/eia](http://www.eskom.co.za/eia) on the "Nuclear 1" link

### **7.2 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.

### **7.3 Thanks and Closure**

On behalf of the study team, Ms Ball thanked the Eastern Cape Coastal Working Group for their input and participation in the EIA and closed the meeting.

## **8. ISSUES AND COMMENTS RAISED AND DISCUSSED**

The table (**pages 13 - 34**) presented below details all issues and concerns which were raised and discussed at the meeting.

Please note:

- ACER has tried to capture and reflect as accurately as possible all issues raised at various public meetings.
- 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 meeting, 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 ACER has captured your issue, please submit your requested changes in writing within two weeks of receiving this document

No	NAME & ORGANISATION	COMMENT	RESPONSE
1	Mr Johann Smuts Bushmans Kariega Estuary Care Forum	How much electricity is Eskom exporting?	In the 2006/7 financial year Eskom exported 13 589 GWh to neighbouring countries and imported 11 483 GWh, a net difference of 2106 GWh exported, which was less than 1 % of the total electricity on the Eskom system.
2	Mr Johann Smuts Bushmans Kariega Estuary Care Forum	Hydropower has the potential of providing continuous power to South Africa. Why is Eskom not looking at hydropower?	<p>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. However at this stage there is not more opportunity for large scale hydro-electric power in South Africa.</p> <p>Eskom also has four mini hydro power stations in the Eastern Cape, consisting of 10 units of various sizes between 0.4 and 14 MW, for a total of 61 MW.</p> <p>In addition to the hydro-electric schemes there are two pumped storage schemes, Palmiet in the Western Cape with a capacity of 400 MW and Drakensberg on the border between the Free State and KwaZulu-Natal with a capacity of 1000 MW. Pumped storage schemes use</p>

No	NAME & ORGANISATION	COMMENT	RESPONSE
			<p>more electricity than what they produce. During off-peak periods, electricity from the national transmission network (i.e. produced by other power stations) is used to pump water from a reservoir at the bottom of a mountain to another reservoir at the top of a mountain. During periods of peak demand or emergencies situations, the water is allowed to run under gravity from the upper to the lower reservoir, in the process driving a turbine and generating electricity. Eskom has started building another pumped storage scheme, Ingula (previously known as the Braamhoek pumped storage scheme), also on the border between the Free State and KwaZulu-Natal. Eskom is also investigating other potential sites for pumped storage schemes.</p> <p>Eskom already imports electricity from neighbouring countries, primarily from the Cahora Bassa Hydro 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. In order to avoid an over-dependency on our neighbouring countries for electricity, Eskom will limit the import of electricity.</p>
3	Mr Johann Smuts Bushmans Kariega Estuary Care Forum	Why Eskom is not using clean diesel?	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

No	NAME & ORGANISATION	COMMENT	RESPONSE
			<p>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 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</p>
4	<p>Mrs Sue Hoffmann                      East Cape Conservancy                      Association</p>	<p>Where is Vaalputs?                       Does waste from a Nuclear Power Station need to be transported?</p>	<p>Vaalputs is in Namaqualand, near Springbok in the Northern Cape Province.</p> <p>Yes. Domestic waste would be transported to the municipal waste site. Low and intermediate level radioactive waste would be transported to the National Radioactive Waste Disposal facility at Vaalputs.</p> <p>Radioactive waste is internationally categorised into three levels. <b>Using Koeberg as an example:</b>  <b>Low-level radioactive</b> waste consists of day-to-day refuse such as paper, gloves, plastic containers, disposable overalls, overshoes etc, which have low traces of radioactive contamination. It is compacted into metal drums (200 litre drums). These drums are transported by road to Vaalputs, the National Radioactive Waste Disposal site in the Northern Cape for near surface disposal. Vaalputs is managed by Necsa on behalf of the State, in terms of a licence issued by the NNR. The level of radioactive in the metal drums decreases with time; after approximately 30 years, the level of radioactivity is equivalent to natural background levels.</p>

No	NAME & ORGANISATION	COMMENT	RESPONSE
			<p><b>Intermediate level waste</b> consists of radioactive resins and sludges, spent filter cartridges and scrap pieces from maintenance work. Intermediate-level waste is solidified by combining it into a sand/cement mix, which is poured into concrete containers, which are transported to Vaalputs for near surface disposal. The level of radioactive in the concrete containers decreases with time; after approximately 300-400 years, the level of radioactivity is equivalent to natural background levels.</p> <p><b>Spent fuel or high-level radioactive waste:</b> The spent fuel is retained at Koeberg in spent fuel storage facilities (pools and casks) licensed by the NNR. The pools and casks have sufficient capacity for the 40-year design life of Koeberg.</p> <p>The SA Cabinet approved a National Radioactive Management Policy and Strategy in 2005. The Department of Minerals and Energy (DME) is currently drafting legislation to implement the Policy. Two options for the long-term management of spent fuel are possible: (a) direct final disposal of the spent fuel in a deep underground geological disposal facility, or (b) reprocessing of the spent fuel to extract unused uranium and plutonium for re-use and concentration and disposal of the residual (about 3-4 % of the spent fuel) high level waste in a deep underground geological disposal facility. Both options are being pursued internationally.</p> <p>For the proposed nuclear power station, Eskom will follow the same practices for the management of radioactive waste as discussed above, under the regulatory control of the NNR and subject to the requirements of the National</p>

No	NAME & ORGANISATION	COMMENT	RESPONSE
			Radioactive Waste Management Policy and Strategy and any associated legislation or regulations.
5	Mr Norbert Klages ARCUS GIBB (Pty) Ltd	Referring to the Koeberg Power Station photograph he wanted clarity on the area where water is discharged?	Using the photograph, the position of the return of the sea water used in the condensers back into the sea was indicated (southern side of the break water).
6	Mr Hilton Thorpe St Francis Bay Residents St Francis Kromme Trust	What studies have been done on the monitoring of the water that is released to the sea?	<p>Using Koeberg as an example:                      Independent studies conducted by the University of Cape Town before the station 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>
7	Mrs Sue Hoffmann East Cape Conservancy Association	What radioactivity is released into the environment? Is there any low level waste that is discharged into the sea?	<p>No low, intermediate or high-level radioactive waste is discharged into the sea. Small quantities of gaseous and liquid radioactive effluents are released into the environment, in all cases in compliance with the limits set by the NNR.</p> <p>Everybody is exposed to natural background radiation everyday from, for example, the earth itself, the materials</p>

No	NAME & ORGANISATION	COMMENT	RESPONSE
			<p>from which buildings are constructed, the sun, and on a less regular basis from medical exposures (X-rays).</p> <p>The quantity of radiation exposure and what is absorbed by the body is measured in microSieverts (<math>\mu\text{Sv}</math>) per annum. The NNR sets the limit of exposure arising from operations at nuclear installations and the permitted release of radioactive gases and liquids into the environment.</p> <p>Using Koeberg as an example: The limit for Koeberg is set at 250 <math>\mu\text{Sv}</math> per annum, far below the exposure from natural background radiation (which is about 2500 – 3000 <math>\mu\text{Sv}</math> per annum), and less than the international standard of 1000 <math>\mu\text{Sv}</math> per annum. The Koeberg NPS has been in operation for over 23 years - the public exposure to radiation as a result of Koeberg's operations and the permitted release of radioactive gases and liquids into the environment has been less than 20 <math>\mu\text{Sv}</math> per annum in general and less than 6 <math>\mu\text{Sv}</math> per annum in 2005/6 – reference NNR Annual Report 2005/6 tabled in Parliament – available off the NNR website <a href="http://www.nnr.co.za">www.nnr.co.za</a>), far below the limit set by the NNR.</p>
8	Mr Hilton Thorpe St Francis Bay Residents St Francis Kromme Trust	It is important that we distinguish becquerel and microSieverts limits as they are two different measurements.	<p>Comment noted.</p> <p>The radioactivity of materials is measured in Becquerels.</p> <p>The quantity of radiation exposure and what is absorbed by the body is measured in microSieverts (<math>\mu\text{Sv}</math>) per annum.</p>

No	NAME & ORGANISATION	COMMENT	RESPONSE
9	Mr Hilton Thorpe St Francis Bay Residents St Francis Kromme Trust	How do you account for the different types of radioactive gases, such as Alpha, Beta and Gamma that are released into the environment?	<p>Alpha Beta and Gamma are forms of radiation. The radioactive isotopes in materials and the manner in which they release energy determine the type of radiation that they will emit. The NNR limits the quantity of each radioactive isotope that may be released into the environment in gaseous or liquid form so that the accumulative effect in terms of radiation exposure to members of the public is less than the limit imposed by the NNR.</p> <p>Using Koeberg as an example: The limit for Koeberg is set at 250 <math>\mu</math>Sv per annum, far below the exposure from natural background radiation (which is about 2500 – 3000 <math>\mu</math>Sv per annum), and less than the international standard of 1000 <math>\mu</math>Sv per annum. The Koeberg NPS has been in operation for over 23 years - the public exposure to radiation as a result of Koeberg's operations and the permitted release of radioactive gases and liquids into the environment has been less than 20 <math>\mu</math>Sv per annum in general and less than 6 <math>\mu</math>Sv per annum in 2005/6 – reference NNR Annual Report 2005/6 tabled in Parliament – available off the NNR website <a href="http://www.nnr.co.za">www.nnr.co.za</a>), far below the limit set by the NNR. The NNR report also indicates the main radioactive isotopes that contributed to the accumulated radiation exposure.</p>
10	Mr Morgan Griffiths Wildlife and Environment Society of South Africa	It is important that we understand how many water loops exist at a power station. Is it correct to assume that given the number of loops, there should be no radioactivity going back to the environment/sea?	<p>Using Koeberg as an example</p> <p>A pressurized water reactor has three independent cooling loops. The primary cooling loop circulates water through the reactor and through tubes in the steam generators or heat exchangers. The heat energy in the water in the primary circuit is transferred through the tubes in the steam generator to water in a secondary</p>

No	NAME & ORGANISATION	COMMENT	RESPONSE
		<p>Are the radioactive gases released through air emissions or where else are they released?</p>	<p>loop, causing this water to boil into steam that drives the turbines. The steam is cooled and transformed back to water in the condensers and then goes back to the steam generators. The water in the primary loop does not come into contact with the water in the secondary loop – they are kept separated by the walls of the tubes in the steam generator. In a third loop, sea water flows through the condensers (which are also heat exchangers) removing the heat from the steam, and cooling and transforming the steam back into water. The sea water in the third loop does not come into contact with the water in the secondary loop. Thus the sea water does not come into contact with the water in the primary circuit, which flows through the reactor.</p> <p>There are procedures and monitoring in place to detect leakages of the tubes in the steam generators and hence prevent any unplanned release of radioactive liquids into the environment.</p> <p>The permitted release of radioactive gases and liquids takes place into the air and into the sea at the point where the sea water used to cool are released into the environment in radioactive effluents.</p>
11	Mr Johann Smuts Bushmans Kariega Estuary Care Forum	What is the difference between the existing Koeberg and the proposed plant types?	The Pressurised Water Reactor (PWR) type technology that Eskom is considering for the proposed NPS under consideration for this EIA is a modernized version (i.e. more advanced) of the technology used at Koeberg.
12	Mr Hilton Thorpe St Francis Bay Residents St Francis Kromme Trust	Can the plant melt down? Is it inherently safe? It is quite an important safety level that should be achieved before implementation.	The nuclear safety and the risk of a nuclear accident at the proposed power station will be independently assessed by the NNR. 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 acceptably low.

No	NAME & ORGANISATION	COMMENT	RESPONSE
		He also enquired about the safety of the Pebble Bed Modular Reactor (PBMR).	This EIA is for a proposed NPS and associated infrastructure. There is a separate EIA process for the PBMR.
13	Mr Hennie Swanevelder Dept of Economic Development and Environmental Affairs	Are the drums made of any special material?	<p>The question referred to the containers in which low and intermediate level radioactive waste is placed. Using Koeberg as an example:</p> <p><b>Low-level radioactive</b> waste consists of day-to-day refuse such as paper, gloves, plastic containers, disposable overalls, overshoes etc, which have low traces of radioactive contamination. It is compacted into metal drums (200 litre drums). These drums are transported by road to Vaalputs, the National Radioactive Waste Disposal site in the Northern Cape for near surface disposal. Vaalputs is managed by Necsa on behalf of the State, in terms of a licence issued by the NNR. The level of radioactive in the metal drums decreases with time; after approximately 30 years, the level of radioactivity is equivalent to natural background levels.</p> <p><b>Intermediate level waste</b> consists of radioactive resins and sludges, spent filter cartridges and scrap pieces from maintenance work. Intermediate-level waste is solidified by combining it into a sand/cement mix, which is poured into concrete containers and transported to Vaalputs for near surface disposal. The level of radioactive in the concrete containers decreases with time; after approximately 300-400 years, the level of radioactivity is equivalent to natural background levels.</p>

No	NAME & ORGANISATION	COMMENT	RESPONSE
14	Mr Hilton Thorpe St Francis Bay Residents St Francis Kromme Trust	Are these drums capable of lasting 30 years?	The level of radioactive of the materials in the metal drums used for low level radioactive waste decreases with time; after approximately 30 years, the level of radioactivity is equivalent to natural background levels. The drums and the Vaalputs National Radioactive Waste Disposal site are designed and are licensed to contain the radioactive materials for the required period.
15	Ms Megan Hope East Cape Conservancy Association	Where would our Vaalputs be (referring to Eastern Cape if Thyspunt site is selected)?	<p>There is only one National Radioactive Waste Disposal Site for low- and intermediate-level radioactive waste in South Africa, which is Vaalputs, located near Springbok in the Northern Cape Province.</p> <p>For the proposed NPS, Eskom will follow the same arrangement as for the Koeberg NPS, i.e. low- and intermediate-level radioactive waste is transported in closed trucks via road to the Vaalputs National Radioactive Waste Disposal Site.</p>
16	Mrs Sue Hoffmann East Cape Conservancy Association	What happens to the high-level radioactive waste?	<p><b>Using Koeberg (as an example):</b>  <b>Spent fuel or high-level radioactive waste:</b> The spent fuel is retained at Koeberg in spent fuel storage facilities (pools and casks) licensed by the NNR. The pools and casks have sufficient capacity for the 40-year design life of Koeberg.</p> <p>The SA Cabinet approved a National Radioactive Management Policy and Strategy in 2005. The Department of Minerals and Energy (DME) is currently drafting legislation to implement the Policy. Two options for the long term management of spent fuel are possible: (a) direct final disposal of the spent fuel in a deep underground geological disposal facility, or (b)</p>

No	NAME & ORGANISATION	COMMENT	RESPONSE
			<p>reprocessing of the spent fuel to extract unused uranium and plutonium for re-use and concentration and disposal of the residual (about 3-4 % of the spent fuel) high level waste in a deep underground geological disposal facility. Both options are being pursued internationally.</p> <p>For the proposed NPS, Eskom intends to follow the same practices for the management of radioactive waste as Koeberg, under the regulatory control of the NNR and subject to the requirements of the National Radioactive Waste Management Policy and Strategy and any associated legislation or regulations.</p>
17	Mr Morgan Griffiths Wildlife and Environment Society of South Africa	Referring to the slide showing pools where spent fuel is stored - it appears as if there is not sufficient space for high-level waste?	The spent fuel is retained at Koeberg in spent fuel storage facilities (pools and casks) licensed by the NNR. The pools and casks have sufficient capacity for the 40-year design life of Koeberg.
18	Mr Johann Smuts Bushmans Kariega Estuary Care Forum	<p>There is a narrow gorge below Cahora Bassa that has greater capacity to assist with hydropower generation. Geotechnical investigations were done in 2000 and South Africa has not utilised such opportunities, why?</p> <p>Eskom deals with Department of Minerals and Energy who are part of the New Partnership for African Development (NEPAD). He does not understand why Eskom does not consider this Mphanda Nkuwa as an option. This will be the cheapest kind of energy generation for South Africa.</p>	<p>The Mphanda Nkuwa project is a dam and hydro power project in northern Mozambique proposed by the Government of Mozambique. The feasibility study was completed, however, there are a number of financial, social and environmental issues, which have still not been resolved., It is thus not correct to assume that the project would provide the cheapest kind of electricity generation for South Africa. Eskom is engaging with the project to take a portion of the electricity produced once the project is realised, subject to acceptable technical and financial parameters.</p> <p>More information can be obtained from the website <a href="http://www.utip.org.mz/home/index.htm">http://www.utip.org.mz/home/index.htm</a> or by performing a Google search on Mphanda Nkuwa or Mepanda Uncua.</p>



No	NAME & ORGANISATION	COMMENT	RESPONSE
22	Mrs Sue Hoffmann East Cape Conservancy Association	Concerned about the credibility of the company undertaking the Air Quality Specialist Study due to their previous findings and input on another project.	<p>The Project Team requested Ms Hoffmann to provide further details so as to better understand the issue.</p> <p><i>Subsequent to this meeting, Ms Hoffman rectified her comment and provided both ACER and ARCUS GIBB with the correct information that was published in the "Eastern Province Herald dated Friday 15 July 1996".</i></p> <p><i>A (i) newspaper cutting and (ii) Ms Hoffman's covering statement is available from ACER upon request.</i></p>
23	Mr Hilton Thorpe St Francis Bay Residents St Francis Kromme Trust	How does the National Nuclear Regulator (NNR) enforce safety criteria?	<p>The NNR is the statutory authority responsible for the licensing of Nuclear installations in South Africa. It obtains its mandate and statutory powers from the National Nuclear Regulator Act and associated regulations.</p> <p>In terms of the Act, no person may site, construct, operate, decontaminate or decommission a nuclear installation, except under the authority of a nuclear installation licence issued by the NNR. The nuclear safety of, and the risk of a nuclear accident at the proposed power station will be independently assessed by the NNR. 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> <p>NNR inspectors monitor the operations and maintenance of licensed facilities to ensure compliance against the licence conditions and the safety standards.</p>
24	Mr Hennie Swanevelder Dept of Economic Development and Environmental Affairs	Can the findings of the Transmission Line EIA rule out an alternative nuclear site?	A fatal flaw in the EIA for transmission lines can invalidate a nuclear site. The transmission line EIA is being aligned as closely as possible with the EIA for the proposed nuclear power plant to ensure effective decision-making.

No	NAME & ORGANISATION	COMMENT	RESPONSE
25	Mr Johann Smuts Bushmans Kariega Estuary Care Forum	In terms of costs, why is Eskom not putting a power station next to the Koeberg NPS? Would that not be the most economical and cheapest option?	The Duynefontein site is one of the five alternative sites being investigated in this EIA. However, Eskom cannot pre-empt the outcome of the findings and recommendations of the EIA,
26	Mr Norbert Klages ARCUS GIBB (Pty) Ltd	In terms of the projected demand, how much of this electricity is for the electrification programme? Is the projected demand because of domestic growth or because we need to feed industry?	In South Africa domestic households account for less than 20 % of the electricity that is consumed (reference Energy Outlook for South Africa: 2002, available off the DME website <a href="http://www.dme.gov.za">www.dme.gov.za</a> ). The projected demand for electricity is driven proportionately by industry, commercial activities and domestic use. Demand side management forms an integral part of Eskom's and Government's electricity planning strategy. Eskom has committed to achieving a goal of a saving of 3000 MW by 2012 and 8000 MW by 2025 through energy efficiency and various demand side management initiatives.
27	Mr Johann Smuts Bushmans Kariega Estuary Care Forum	In terms of the peak demand, industries currently can run their plants all the time. Is Eskom looking at creating benefits to industries using power with a view to saving or managing the demand?  Follow-up question - is there anywhere to find out more about programmes that will reduce the demand, creation of incentives, etc?	Demand side management forms an integral part of Eskom's and Government's electricity planning strategy. Eskom has committed to achieving a goal of a saving of 3000 MW by 2012 and 8000 MW by 2025 through energy efficiency and various demand side management initiatives.  The Eskom website <a href="http://www.eskomdsm.co.za">www.eskomdsm.co.za</a> provides more information and contact details regarding demand side management initiatives.

No	NAME & ORGANISATION	COMMENT	RESPONSE
28	Mr Hilton Thorpe St Francis Bay Residents St Francis Kromme Trust	He enquired whether there are any options for municipalities to save electricity.	Municipalities are encouraged to participate in energy efficiency programmes. Eskom is involved in a number of projects with various municipalities. The Eskom website <a href="http://www.eskomdsm.co.za">www.eskomdsm.co.za</a> provides more information and contact details regarding demand side management initiatives.
29	Mr Norbert Klages ARCUS GIBB (Pty) Ltd	In terms of the alternatives, are generation activities as activities being identified as options or are only the nuclear site alternatives being investigated? Is the EIA applying for exemption from investigating alternatives?	No application for the exemption of reviewing alternatives has been made to DEAT. The EIA will look at all viable alternatives, including generating technologies. The Draft Scoping Report (DSR) will contain a detailed discussion on all practical alternatives.
30	A Stakeholder	Wave power, ocean currents, etc, these are generation alternatives, which should be looked at by Eskom?	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.
31	A stakeholder	Surely Eskom has looked at wind as an option for power generation?	Eskom is currently busy with an EIA that is investigating the development of a commercial wind farm on the West Coast near Vredendal. The plant will have an initial capacity of 100 MW. The turbines are to be erected in an area that is approximately 25m <sup>2</sup>  Eskom is continuously investigating new technologies for the cost-effective generation of electricity.
32	Mr Johann Smuts Bushmans Kariega Estuary Care Forum	What has happened to solar panels developed by the Rand Afrikaans University?	This technology is still under development. The website <a href="http://www.johanna-solar.com/en/company/index.html">http://www.johanna-solar.com/en/company/index.html</a> contains more information about the status of this development.

No	NAME & ORGANISATION	COMMENT	RESPONSE
33	Eastern Cape Regional Coastal Working Group Member	<p>In every case, development always takes precedent over the environment. She has mentioned this to the Minister.</p> <p>According to her, for every development that takes place, the environment should be considered important.</p> <p>She has been nuked for cancer. She has personally taken the maximum dose, so what does this NPS mean for her?</p>	<p>Comment noted.</p> <p>This is precisely why an EIA is being undertaken for the proposed NPS. The aim of the EIA is to assess potential environmental impacts (negative, positive or neutral) of the proposed power station and to suggest mitigation measures to reduce or enhance these impacts.</p> <p>The radiation dose arising from a nuclear power station accounts for less than 0.04 % of the total radiation dose from all sources. In this context the proposed nuclear power station will have negligible impact on any person living in close proximity.</p>
34	Mrs Sue Hoffmann East Cape Conservancy Association	If solar power is not efficient enough, surely if people are able to sell back energy to the grid it should be efficient.	Government (Department of Minerals and Energy) is currently investigating incentives to promote renewable energy – this includes evaluating the concept of “feed-in” tariffs. The regulatory framework to facilitate these incentives will be developed by the NERSA.
35	Mr Morgan Griffiths Wildlife and Environment Society of South Africa	<p><i>Mr Griffiths asked this question and not necessarily expecting a response at the meeting – a response could be provided in due course.</i></p> <p>What is Eskom’s policy in terms of the renewable energy?</p> <p>What is Eskom’s commitment to renewables?</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><b>Hydro power:</b> 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</p>

No	NAME & ORGANISATION	COMMENT	RESPONSE
		Suggested that the Renewables Energy Policy be made available on Eskom's website.	<p>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.</p> <p><b>Wind energy:</b> 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, 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.</p> <p><b>Solar energy:</b> An EIA has been undertaken and an environmental impact report has been submitted to the DEAT 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.</p> <p>Suggestion noted.</p>
36	Mrs Sue Hoffmann East Cape Conservancy Association	South Africa is only going to be part of the Kyoto Protocol in 2012. If we have to build another power station after 2012, would South Africa be allowed?	South Africa is a signatory to the Kyoto Protocol as a developing country. As such South Africa currently has no targets to reduce its GHG emissions. The Kyoto protocol is valid up to 2012. International negotiations for the period thereafter have recently commenced and hence no firm decisions have thus been made regarding future commitments.

No	NAME & ORGANISATION	COMMENT	RESPONSE
			<p>However, Eskom has taken the stance that South Africa will be required to reduce its GHG emissions and therefore Eskom has developed a climate change strategy which is focused on energy efficiency, reducing the demand for electricity and low CO<sub>2</sub> emitting technologies such as renewables and nuclear.</p>
37	<p>Mr Hilton Thorpe                      St Francis Bay Residents                      St Francis Kromme Trust</p>	<p>The fragmentation of the whole process in terms of waste disposal is a cause for concern. For decades the nuclear industry has not faced up to the Nuclear Programme and now South Africa is going ahead.</p> <p>He is uncomfortable with the argument that improved technology will make high-level radioactive waste sites safer. In England they have failed to get the nuclear license because it is a political decision. No one wants to have high level radioactive waste near their homes.</p> <p>This is a political problem not a technical problem (looking at experience of the United Kingdom). The opinion was voiced that radioactive waste will remain on nuclear generation sites indefinitely.</p>	<p>Comments noted.</p>
38	<p>Mr Hilton Thorpe                      St Francis Bay Residents                      St Francis Kromme Trust</p>	<p>The viability of the Thyspunt site. Thyspunt is no longer viable for the Pressurised Water Reactor (PWR)</p> <p>It has been mentioned that the Emergency Planning Zones (EPZ) for the latest PWR technology may be reduced to five km or less. All nuclear power generation remains a potentially hazardous process. Whatever the emergency planning zone requirements are for the PWR at Thyspunt, it does not remove the fundamental requirement to ensure adequate provision for evacuation in an emergency.</p>	<p>The viability of any site will be assessed through both the EIA and NNR licensing process</p> <p>Comment noted</p>

No	NAME & ORGANISATION	COMMENT	RESPONSE
		What will be the procedure in the event of an accident?	The procedures in the event of an accident will be developed and approved by the NNR
39	Mr Hilton Thorpe St Francis Bay Residents St Francis Kromme Trust	The latest census was incompetently conducted. Approximately 50 % of the population was not recorded. Therefore, it is incorrect to use the 2001 census data for planning purposes. This is due to seasonal fluctuations in the Greater St Francis area.  The NNR needs to assess accurate demographics during peak periods.  If you need to consider Thyspunt - the NNR should check the viability of the Thyspunt site.	Comment noted. The Social specialists have been instructed to include seasonal fluctuations in population in their specialist reports.  The viability of any site will be assessed through both the EIA and NNR licensing process
40	Mr Hilton Thorpe St Francis Bay Residents St Francis Kromme Trust	The planning of the Municipalities is also based on the faulty census data from 2001 - this needs to be taken care of. The social and geographical environment should be considered.	Comments noted. The viability of any site will be assessed through both the EIA and NNR licensing process
41	Mr Hennie Swanevelder Dept of Economic Development and Environmental Affairs	In terms of the Kouga Coast Sub-Regional Structure Plan, which was funded by Eskom - it indicated that no schools, etc would be built within the emergency area. Does this still stand?	All current planning will be taken into consideration during the investigations. In addition, the social and socio-economic specialist will consider various planning frameworks.  The NNR will determine the number and size of emergency planning zones for the proposed power station.  In the case of the Koeberg NPS, two emergency planning zones are in place. The first zone is up to approximately five km from the power station, within which no further development may take place. The second zone is from five km up to approximately 16 km from the power station, within which limited development may take place.

No	NAME & ORGANISATION	COMMENT	RESPONSE
			<p>For the proposed NPS Eskom is considering the latest design of Pressurized Water Reactor (PWR) technology. Internationally, these designs have formal emergency planning zones less than 16 km. The NNR will, however, determine the extent of the required zone based on a safety assessment of the design of the proposed nuclear power station and the proposed site and environment.</p>
42	<p>Mr Morgan Griffiths                      Wildlife and Environment                      Society of South Africa</p>	<p>The footprint of the NPS is not relatively large. It is large when the construction of roads, construction site, etc is taken into account.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>The influx of people</b> – when people come to the area searching for jobs and never leave.</li> <li><input type="checkbox"/> Are there any lessons being learnt from other big power station projects, which could be used for the proposed NPS?</li> <li><input type="checkbox"/> The Social and Socio-economic specialist should look at all these issues.</li> <li><input type="checkbox"/> As an example, Coega has built a bigger area, which in reality should have taken care of social issues, etc. From Coega’s experience, although the measures are huge they still have not addressed the social issues.</li> </ul>	<p>Comments noted with thanks. All comments will be communicated to the respective specialists to be included in their assessments.</p>
43	<p>Mr Hilton Thorpe                      St Francis Bay Residents                      St Francis Kromme Trust</p>	<p>How much uranium do we have in the area to take care of the requirements of the fleet of NPS proposed by Eskom in the future?</p>	<p>Every 1 000 MW of nuclear power capacity needs approximately 200 tonnes of natural uranium per annum. Thus, 20 000 MW of nuclear power operating for a 60 year period would require about 240 000 tonnes of natural uranium.</p> <p>South Africa’s Reasonable Assured Resources (RAR) of uranium is estimated to be 521 000 tonnes, with a further 211 000 tonnes as inferred resources. [Reference: IAEA/NEA “Uranium 2005: Resources Production and Demand” – the “Red Book”]. Thus,</p>

No	NAME & ORGANISATION	COMMENT	RESPONSE
			South Africa has enough uranium resources to support a 20 000+ MW nuclear programme for the envisaged 60 year lifetime of the modern nuclear power plants.
44	Eastern Cape Regional Coastal Working Group	Enquired about the costs of the plant being built in Finland?  Why is plant behind schedule?	Those costs would be confidential between the Finish utility, TVO, and the vendor, AREVA of France.  Information regarding the project is available from the Finish Utility (TVO) website <a href="http://www.tvo.fi">http://www.tvo.fi</a> . An August 2007 press release by TVO on this web site states "the progress of the reactor building civil construction works will be slower than originally planned by the Supplier, as the Supplier has reported that the execution of the works, in particular the need to satisfy the safety requirements of the new plant, is more demanding than the Supplier had anticipated".
45	Mr Norbert Klages ARCUS GIBB (Pty) Ltd	If we put radioactivity aside, whenever a NPS is built there is always a problem with cooling.  We need to understand that much water is required for the cooling process. Although, there is much water in the sea, it is a habitat for specific animals with specific needs.	This statement is incorrect. All thermal power stations, regardless of technology, require cooling. In the case of the proposed nuclear power station these needs will be met by seawater.  Comment noted. This will be addressed as part of the EIA process.
46	Mr Morgan Griffiths Wildlife and Environment Society of South Africa	Warm water results in excessive growth of algae.	Comment noted.
47	A stakeholder Eastern Cape Regional Coastal Working Committee	If you are looking at five power stations, over what period of time will Eskom be implementing them?	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

No	NAME & ORGANISATION	COMMENT	RESPONSE
			<p>Bassa or on the transmission lines between Cahora Bassa and South Africa). 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. The Eskom Board has approved the investigation of up to 50 % (i.e. 20 000 MW) of the required capacity to be supplied by nuclear power.</p>
48	Cllr Stanford Slabbert Nelson Mandela Bay Municipality	<p>Seasonal influx of people in December and January in the area surrounding the proposed Thyspunt site is probably 10 to 25 times that of the remainder of the year. The infrastructure of this area is already stretched, so it will be stressed even further during the construction period. This needs to be considered during the investigations.</p>	<p>Comment noted and will be included in the specialist studies.</p>
49	Mrs Sue Hoffmann East Cape Conservancy Association	<p>In terms of the Nuclear Awareness Programme, is it possible to add the energy saving dimension?</p>	<p>This will be included in the nuclear awareness programme.</p>
50	Mr Johann Smuts Bushmans Kariega Estuary Care Forum	<p>The life span of these NPS can be up to 60 years. Therefore it may not be necessary to build a new one but to extend the lifespan of the existing Koeberg NPS.</p> <p>Is this possible when considering that the proposed NPS will be using modernised technology?</p>	<p>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 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.</p> <p>Koeberg has a net "sent out" capacity of 1800 MW. Hence life extension of Koeberg, which is an option under consideration, would not be sufficient to meet the projected requirements by 2025.</p>

## APPENDIX 1: 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](http://www.eskom.co.za/eia)) or requested from ACER (Africa) at [nuclear1@acerafrica.co.za](mailto:nuclear1@acerafrica.co.za) or 086 010 4958

## **APPENDIX 2: ATTENDANCE REGISTERS**

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