ENVIRONMENTAL IMPACT ASSESSMENT (EIA)
EIA: 12/12/20/944

FOR THE PROPOSED ESKOM NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE

DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

PUBLIC MEETINGS, WEEK 2 – EASTERN CAPE

12 – 15 APRIL 2010

PROVINCE	AREA	DAY AND DATE	VENUE	TIME
Eastern Cape	Oyster Bay	13 April 2010	Oyster Bay Community Hall	18H00 – 20H30
Eastern Cape	Humansdorp	14 April 2010	Humansdorp Country Club	18H00 – 20H00
Eastern Cape	St Francis Bay	15 April 2010	St Francis Links Golf Club	18H00 – 21H30

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PREFACE

The presentations at the Public Meetings were uniform in nature and, therefore, one set of proceedings has been prepared. Slides of the presentation are provided in Appendix 2. Interested and Affected Parties (I&APs) raised a variety of issues at the three public meetings and for ease of reference, these have been captured in Appendix 1, providing I&APs from the three public meetings an opportunity to cross reference issues raised at the individual meetings.

Should participants who attended the meetings require any changes to these proceedings, please notify the Public Participation Office in writing within 14 days of receipt.

"Unidentified I&APs" refer largely to persons who attended meetings and verbally raised issues without providing their names. This in no way diminishes the value of the issue raised. Should you recognise your issue and would like to have your name recorded next to it, please advise the Public Participation Office.

IMPORTANT NOTE

The EIA presentation was not given at the St Francis Bay Public Meeting. The I&APs stated that they did not want to spend time on a presentation. The meeting was therefore a question and answer session. Stakeholders wishing to read a record of the St Francis Bay can check the issues and responses, which are captured in Appendix 1.

1. ATTENDANCE

1.1. Attendance – Interested and Affected Parties

- As per attendance register.

1.2 Attendance – Eskom Holdings Limited

Name	Position/Role
Mr Tony Stott	Senior Manager - Stakeholder Management Generation Business
Ms Deidre Herbst	Senior Manager – Environment Generation Division
Mr Gert Greeff	Manager - Nuclear Sites
Ms Carin de Villiers	Manager Stakeholder Management and Communication - Nuclear Division
Mr Mervin Theron	Manager Regulatory and Localisation – Nuclear Division
Mr Kevin Leask	Chief Engineer – Strategic Grid Planning
Mr Mandla Mbusi	Senior Advisor - Stakeholder Management

1.3 Attendance – Environmental Consulting Team

Name	Organisation	Role in the project
Ms Jaana-Maria Ball	Arcus GIBB (Pty) Ltd	Nuclear-1 EIA: Project Manager
Mr Reuben Heydenrych	Arcus GIBB (Pty) Ltd	Senior Environmental Scientist
Ms Bongi Shinga	ACER (Africa)	Public Participation Consultant
Ms Karin Bowler	Karin Bowler Enterprises	Independent Facilitator

2. WELCOME AND INTRODUCTIONS

The Facilitator, Ms Karin Bowler, welcomed everyone to the meeting. She explained that the presentations were in English. She explained that participants are welcome to use the language of their choice as the EIA Team could communicate in English, Afrikaans and Xhosa.

She advised participants that the meeting is being recorded to ensure the accuracy of the minutes

Due to late arrival of participants at some public meetings, the starting of some meetings was delayed by a few minutes later than the advertised times. In this instance, the Facilitator advised participants that the time would be added on at the end of the meeting (if required) to ensure sufficient time for questions.

She asked that points of clarification be held over until the discussion period.

3. FACILITATORS INTRODUCTORY REMARKS

3.1 Conduct at Meeting

The Facilitator read through the points presented on the slide, which provided guidelines with respect to the conduct of all participants and for achieving a constructive debate and discussion. These points are contained in the main presentation, which is provided in Appendix 2.

She requested all participants to assist the team by having a constructive debate at the meetings.

3.2 Objectives of the Public Review Meetings

The purpose of the Public Meetings is three-fold, *viz*.:

- To present and discuss findings of the various specialist studies undertaken during the Impact Assessment Phase.
- To present the conclusions and recommendations of the Draft Environmental Impact Assessment Report.
- Provide an opportunity to Interested and Affected Parties to comment on the specialist study findings and the outcomes of the EIA.

3.3 Summary of Issues Raised during Scoping Phase

The Facilitator explained that the facilitator from the previous round of meetings thought it prudent to summarise a couple of key issues that came out of the process leading up to the EIA Report and also just to list some of those key issues. Having gone through the Issues and Response document, it is quite clear that these are only a few of the issues that were raised. Not all of them are relevant to the EIA process. Some of these issues belong to the NNR process.

For continuity purposes, the Facilitator briefly mentioned some of the issues:

"Some people are opposed to and some are in favour of the proposed Nuclear Power Plants at Bantamsklip, Thyspunt and Duynefontein sites. There are concerns about the potential impact on health and safety issues. The community living in close proximity to the power station are concerned about their sense of place. They are also concerned about the visual impact of a power station. The affect on tourism is also an issue of concern. Altered sea temperatures could potentially affect marine life. Commercial and recreational fishing might be negatively impacted. Light pollution from the plant. Concern over property values have also been raised. Some people have expressed a lack of trust in the EIA process. Issues regarding the storage of hazardous waste. Consideration of alternatives such as renewable energy".

She emphasised that it is important for stakeholders to verify that issues, which were raised during the Scoping Phase, have been taken into consideration during the Impact Assessment Phase.

4. PRESENTATION: FINDINGS ON THE DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

Ms Jaana-Maria Ball and Mr Reuben Heydenrych representing the Independent Environmental Assessment Practitioners, Arcus GIBB, presented the findings on the Draft Environmental Impact Report (EIR).

By way of introduction, Ms Ball, EIA Project Manager, thanked all present for their time and indicated that Arcus GIBB is pleased to be at the stage of presenting the findings of the specialist investigations and the outcomes of the Environmental Impact Assessment phase.

Ms Ball and Mr Heydenrych then presented the findings on the Draft EIR (refer to presentation slides provided in Appendix 2).

The issues raised and discussed following Arcus GIBB's presentation are captured in the table presented in Appendix 1.

5. ISSUES AND COMMENTS RAISED AND DISCUSSED

5.1 Issues and Comments raised

The table contained in Appendix 1: "Record of Issues Raised and Discussed" details the issues, comments and concerns, which were raised and discussed at the meeting.

6. WAY FORWARD AND CLOSING REMARKS

6.1 Minutes of Meetings

Ms Ball indicated that the EIA Team would endeavour to distribute the minutes of meeting to I&APs within 21 days of the date of the meeting.

I&APs will have 14 days to verify the minutes and provide their comments to ACER.

6.2 Timeframes

In terms of the timeframes, I&APs were reminded that the public review period of the Draft EIR ends on 10 May 2010. Arcus GIBB has allocated a 66 day comment period, recognising that there are long weekends, school holidays and the Easter Weekend within the period 06 March – 10 May 2010.

Post-meeting note: **Following a request at subsequent public meetings, the end date for the public review period was extended to 31 May 2010, thus providing an 87 day comment period.**

Ms Ball encouraged all present to submit their comments to ACER (Africa) using one of the following methods:

- By mail: Public Participation Office, Nuclear-1 EIA, PO Box 503, Mtunzini, 3867
- By fax: 035 340 2232
- By email: nuclear1@acerafrica.co.za

Comments received on the Draft EIR are recorded and addressed the form of an Issues and Response Report (IRR). Comments received will be used to produce the Final EIR, which will then be submitted to the Department of Environmental Affairs (DEA) for their consideration.

The timeframe for submission of the Final EIR will depend on how long it takes to finalise the report as well as on the type of comments that are received from I&APs during the review period.

A letter will be sent to all registered I&APs informing them of the Authorities' decision.

6.3 Facilitators Concluding Remarks

The Facilitator stated that the onus of responsibility on your shoulders is to act as a reviewer to make sure that this process is robust and that your issues are answered. If not answered, it must be taken within the process. She encouraged everyone to make use of opportunities given to the stakeholders in terms of the National Environmental Management Act (NEMA) and the constitution.

The Facilitator thanked everyone for constructive engagement and encouraged I&APs to submit written comments and closed the meetings.

Interactions between I&APs and the Project Team continued after the meeting. However, ACER did not record discussions, which took place after the meeting.

APPENDIX 1: RECORD OF ISSUES RAISED AND DISCUSSED

OYSTER BAY PUBLIC MEETING (13 APRIL 2010)			
No	**Name**	**Comment**	**Response**
1	Mrs Una Bornman - Pensioner, Oyster Bay Resident	Mrs Boardman said that the exclusion zones had not been mentioned and she would like to know about them.	Ms Ball replied that she was not an expert on these so she would pass this one to Eskom. Although the international norm for Emergency Planning Zones (EPZs) are detailed in the EIR and used to depict likely scenarios, the NNR will finally decide on the exclusion zone after the site safety studies are undertaken by Eskom's appointed independent consultants. Mr Stott: Eskom will certainly not build a power station that is not safe to the public and Eskom employees. Eskom has to abide by international rules as well as the NNR rules. The modern nuclear power stations have an exclusion zone of 800 m in which people cannot live.. Outside of the 800 m should never have to be evacuated. The design of the plant is crucial as whoever designs the plant has to conform to these requirements. Mr Stott went on to explain further that there is also a 3 km boundary so between 800 m and 3 km people might have to be sheltered and stay inside for up to a week. Finally, it is the NNR who decides if 800 m would be acceptable to comply with international standards or would they want a larger area. Eskom has no indication from them that it would be any more than 800m and 3 km at this stage. Ms Ball added that the diagram where Oyster Bay is indicated as 5.5 km from the proposed power station so they are well outside of the likely exclusion zone.
2	Mrs Laura Nixon Local Resident	Mrs Nixon stated that in discussions at previous meetings a 10 km zone from Oyster Bay was spoken about. The implication was that the Oyster Bay	Ms Ball confirmed that Ms Nixon was correct as in previous meetings other exclusion zones were displayed. However, as the nuclear power plant generation technologies improve

OYSTER BAY PUBLIC MEETING (13 APRIL 2010)			
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		community would not grow because it falls within that zone. She questioned if 10km is no longer the exclusion zone for the proposed nuclear power station. It was also mentioned that we (referring to community area) would not be the housing area, it appears that different information has been presented at the meeting.	around the world the exclusion zones have been reduced. As Mr Stott has indicated it will be up to the NNR to decide on the size of the zones. Arcus GIBB has therefore updated the reports accordingly to reflect current internationally accepted planning zones. **Post-meeting note: The 800 m and 3 km EPZs were used in the EIA for assessing of potential impacts of the proposed nuclear power station.** **The housing area for construction workers would not be situated in Oyster Bay.**
3	Mrs Laura Nixon Local Resident	Mrs Nixon enquired about housing in the area for the construction site and asked if the housing would be in Humansdorp. Mrs Nixon said there were grave concerns around the housing issue. She added that the idea of the 10 km zone would not have been as much of a concern. Mrs Nixon repeated her concern regarding the housing in Humansdorp. There had been an impression given that Oyster Bay would not be allowed to grow at all because of it being so close and therefore a security risk. Now the consultants are saying the access roads will have a huge affect on Oyster Bay and pass through the village. Oyster Bay is a tiny village.	Eskom's plans for housing have not been finalised. **However, Eskom has carried out preliminary investigations and these aspects were considered by the social specialist.** Eskom planned to investigate housing requirements in more **detail and obtain certainty on this aspect, once the preferred site was identified through the EIA process.** The preliminary discussions that Eskom has held with municipalities are that they would be looking in the areas of Humansdorp and Jeffreys Bay to house the majority of the construction and operational staff. If, however, an employee of Eskom felt that they wanted to buy property in Oyster Bay for example, that would be their right to do so. Eskom has no plans for a housing development In Oyster Bay. It has always been stated that access roads are needed on both the eastern and western sides of the Eskom owned property. T**he detail of these proposed access routes has not been discussed before in the EIA process as the specialists needed to undertake their assessments and indicate their**

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			preferred corridors for these access roads. A Focus Group Meeting is planned for 25 May where the access roads will be discussed in more detail. Mr Stott explained that when the Koeberg Nuclear Power Station was designed and constructed there were vastly different types of emergency plans. The exclusion zone for Koeberg is from 5 km and out to 16 km. There would be restrictions under that type of scenario for development in that 5 km to 16 km zone. However, international standards now require only an 800 m exclusion zone.
		Mrs Nixon then stated that they were also told that there would be certain housing requirements. Potentially, there could be 20,000 workers coming to look for work. If 7,000 of these people get jobs that means there would be 13,000 unemployed people. They will need to be housed, to be fed and if the jobs are not available that means huge social problems.	The facilitator then asked if the social studies included in-migration as an impact related to construction activities. At the peak of construction there will be about 7 700 employees needed to construct the nuclear power station. The peak construction period is short (2 – 3 years) and then the numbers will decrease. During the operational phase there will be about 1 400 employees on site. Social issues, including the potential impacts of the influx of temporary workers have been assessed in the EIA. The social specialist found that in terms of the increase in the possibility of wage requirements and dairy farmer workers being enticed to work on the nuclear construction site, this is unlikely to happen as these are quite different types of work with respect to skills required etc. She said that in the opinion of the independent social specialist the construction of a nuclear power station should not negatively affect the dairy farmers in the Thyspunt area.
		Mrs Nixon voiced her personal displeasure at the fact that the exclusion zone has been changed. She could not believe that international criteria would be for only	The facilitator enquired about the information in terms of the new technology and asked when it became available,

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		an 800 m exclusion zone. She queried how this could have changed between this meeting and the last meeting. They had always been led to believe that there was a 10 km exclusion zone and that they were protected.	specifically around the exclusion zone. Mr Stott said that the international standards and guidelines came into effect a few years ago. Before this EIA had started, but at that time Eskom were still under the impression that the NNR would impose the 'Koeberg type' of limits on Eskom. It was only when Eskom went to the actual vendors and asked if they could build to international specifications, subject to NNR agreement, that the exclusion zone was modified for Nuclear-1. This was in the latter part of 2008.
3	Mr Kobus du Toit Oyster Bay Resident	Mr du Toit stated that he is a private home-owner in Oyster Bay and he is very prejudiced as it is a holiday home and he comes to this place often. Principally he cannot understand, why humans have this tendency, while there are centres of economic activity in the country, there is a trend to go outside of those centres and spoil a pristine environment by putting up a commercial enterprise such as a nuclear reactor. He is not against nuclear energy *per se*, He is in fact for it because he regards it as the only viable option for the country's power requirements. However, he asked why put up a commercial development in a place like this? People accept that, in terms of the Eastern Cape, the area where the greatest input of energy is required, is the Port Elizabeth area. Why consider areas outside of the Coega area, where the energy will be required? Mr du Toit went on to say that his other concerns are the social concerns. This whole issue is going to change the Oyster Bay area. The social aspects will	Ms Ball replied and explained that Eskom started the Nuclear Site Investigation Program (NSIP) in the early 1980s. It was a 10-year independent study, which included various specialists studies. Many aspects were taken into consideration, including social, biophysical and, very importantly, seismic risk and stability of the underlying geology for a nuclear power station. The Environmental Evaluation Unit of the University of Cape Town proposed a number of suitable sites along the entire South African coastline. The sites identified as being most suitable in that NSIP process were included in this EIA as alternative sites. In terms of the social aspects that were assessed in the EIA, a full Social Impact Assessment (SIA) team looked at a whole range of issues, including the influx of workers, change in population demographics etc., and that specialist has indicated that with very careful management and mitigation, the potential negative impacts can be reduced to acceptable levels at all the sites. Mr Tony Stott added that initially two sites were selected through the NSIP in this area, namely Bonthys and Tony's Bay.

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		need very careful management and he is not sure whether the capability exists within Eskom or in the country to manage this.	These sites were combined to form the Thyspunt site which was selected as the most suitable nuclear site in the Eastern Cape. Mr Stott agreed with Mr du Toit regarding the importance of social aspects and added that they are very critical and they would have to be handled very carefully, should a nuclear power station be built at Thyspunt.
4	Mr Jan Norman Eskom Holdings Limited	The facilitator provided an opportunity for Mr Jan Norman from Eskom to provide clarity on housing requirements for the nuclear power station	Mr Norman stated that he works for Eskom on the Nuclear-1 project; and his focus is infrastructure for operational staff who will work at the plant for the next 60 years. Studies have shown that there is no requirement for Eskom to build any houses for the staff as there is a vast number of available serviced land in Jeffrey's Bay and Humansdorp. The discussions with the local municipalities have shown that the local property developers have indicated that staff could be accommodated in these towns. There will be a build up of people during the construction period over approximately 5 years, and there will not be an influx of 1 000 people per year. Construction staff will either come from the local community or will move into the local community. They will buy houses or land. For the construction staff, there will be accommodation requirements to accommodate approximately 7 000 people. This will include both accommodation for senior staff and single accommodation. At this stage a consultant has been appointed to investigate possible availability of land and they have identified five large tracts of land in the region. This land has also been identified by the municipality for property development. This land is in the Jeffrey's Bay area and Humansdorp.
5	Mr Zandisile Ndamase Local Resident	Mr Ndamase said she would like clarity on whether would it make any difference to engage in discussions	Ms Ball referred to a diagram in the presentation that indicated the issues. She went on to explain that in order to address the

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		or has a decision has been made.	question regarding what is needed, she recommended that Ms Ndamase check specific the issues documented in the Draft EIR and submit her comments to ACER. Everything that is discussed tonight will also be captured in minutes and in the Issues and Response Reports and will be used to update the EIR. No decisions have been made in terms of this EIA or in terms of any of the other decisions such as the NNR decision regarding site and plant safety. Ms Ball also explained that she and Mr Heydenrych are presenting the specialist findings. Eskom wants to build a nuclear power station but it does not mean that they are going to build a power station. Eskom has to get authorisation from a number of authorities first. The facilitator added that the first authorisation that is required, is environmental authorisation. The authorisation can either be positive, which says to Eskom it can go ahead and build or it can be negative. After that, if there is a positive authorisation, there can be appeals. A positive authorisation is not necessarily the end of the process. Mr Stott also explained that there are about 33 permits that are needed. Of these, two are very important, the Nuclear License and the Environmental Authorisation. Prior to these decisions a decision needs to be confirmed as to whether South Africa will build nuclear power stations. This decision will be taken in the Integrated Resource Plan, an energy plan which examines the different kinds of technology that should be allowed in South Africa. The Department of Energy expects to issue this plan by the middle of 2010 for public comment.

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			Mr Stott went on to explain should the Department issue the plan then Eskom has to resume the commercial process. The nuclear licence is issued by the NNR. They look at the health issues, the emergency plan, etc. and only once they are satisfied and give Eskom a licence to construct the power station can the utility start with construction. There are other permits such as water licences, natural heritage permits, etc. Eskom does not expect to get the nuclear licence until approximately a year after the decision is made, if it is a positive decision.
6	Mr Nick Bornman Oyster Bay Beach Lodge	Mr Bornman asked what would happen to this property if the site were not approved. He thought that if developer had to buy it and build four or five thousand houses, this might have a worse affect on this area. The facilitator asked if Eskom would consider selling the land. The facilitator noted that it would be a change of land use if any person decides to develop the property (Thyspunt). So whatever development occurs, it will have to go through an EIA process.	Mr Heydenrych said that the **Thyspunt** property could be sold and there may be a number of different plans. In terms of the biophysical specialist, there could be a conservation benefit by conserving the remainder of the 2 400 ha site. Approximately 31 ha will be development that is a significant conservation benefit for the area. Currently the area is not conserved. Those are the options for the public to weigh up. Ms Ball added that there are also other possible spin-offs that some of the specialists have recommended. For example, Eskom could buy up tracts of land and extend the nuclear plant up to the eastern access route towards Cape St Francis. Eskom would have to purchase land for the eastern access road should the authorisation be granted (**this area includes the Langefontein Wetland Complex**). Mr Stott replied that in terms of legislation Eskom are allowed to buy property for future use. However, if Eskom is never going to use the land in question, the utility will be obliged to sell it as they cannot just hold onto the property.

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7	Ms Charmaine Kettledas Local Resident	Ms Kettledas said there are many rumours regarding the power station. She wanted to know if it is true that there will be a housing development at KwaNomzamo.	Ms Ball explained that in discussions with the municipality early on in the EIA process, it was agreed not to consider Oyster Bay for staff housing due to the restricted water, sewage, access roads and a whole host of other issues. So Oyster Bay has not been considered for housing by Eskom. Eskom will not be building any houses for staff but the appointed contractor may.
8	Mr Zolani Mayoni Local Resident, ANC	Mr Mayoni wanted clarity about the housing development. He asked if the consultants are saying that the municipality said to Eskom that they could never the place a housing development because of water related constraints in the area.	Mr Norman answered that Eskom will not build any residential homes for their staff. The contractor will require residential accommodation for his staff. There will be approximately 7,000 people and they would like to build housing in one place for these people. When Eskom mentioned to the municipality that they require a large tract of land for a mixture of married and single accommodation, they asked us please not to consider the Oyster Bay area. They did not tell us where to consider but only not to consider Oyster Bay. Eskom employees will be scattered. However the contractor needs one location due to the logistics of transporting people to the site.
9	Ms Charmaine Kettledas Local Resident	Her understanding was that the Kouga Municipality would not build houses for the KwaNomzamo community because of Eskom's development.	The facilitator explained that the development being discussed in this EIA was separate from the development plans being referred to by Ms Kettledas. **Post-meeting note: Eskom has not restricted the building of houses for Kwa Nomzamo.** Mr Stott reiterated that the municipality were very clear that the construction of housing would not be in Oyster Bay.
10	Mr Barry Bothas Local Resident	Mr Bothas asked if small businesses in the area will be given the opportunity to perform minor projects or will all the work go to the larger enterprises.	Ms Ball responded by saying that this is a recommendation from the specialist that there be use of local labour and local businesses. This is also in the agricultural study where there is the prediction that there will be an increase in the demand for milk. There will certainly be an increase for the demand for all

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			local services. Ms Deidre Herbst said that if the example of large coal fired plants that Eskom is involved in Lephalale and also pumped storage scheme in the Drakensberg is used, Eskom has enforced the use of as much local labour and businesses as possible. Eskom stipulate targets within contracts to use local labour and businesses. Obviously the large components are going to come from overseas.
		The facilitator asked if there is a vendor listing process.	Ms Herbst said that this is not currently in place, but once approval is granted and Eskom is certain about construction, then the team will come into the area and start engaging with local forums and communities.
		Mr Bothas, as an example said that if he wanted to provide a service such as fixing punctures for the vehicles – would he be able to tender for this type of job.	Mr Stott added that in terms of the actual contracts with the suppliers, vendors have to specify how much localisation is going to take place, i.e. how much work they will give to local businesses, how much local labour will they use, how much of the localisation will they use. There are some points allocated to the minimum requirements, which need to be met by the vendors, if not then they will be penalised. These follow normal tender procedures. Eskom does try to encourage the use of local small business as much as possible.
11	Mr van Zyl Oyster Bay Resident	Ek was redelik betrokke van die begin van Eskom se onderhandellings af. My bekommernis is oor die hele proses. Ek praat nie namens die boere nie. Daar is so veel dinge gesê en wat nou later net verander. Ek wil 'n voorbeeld gee. Aan die begin is daar nooit gepraat van 'n kernkragstasie nie – dit was 'n PBMR	The Facilitator said there were some issues that need to be unpacked. One of the critical issues is the whole issue relating to the PBMR reactor and which was originally negotiated with the local landowners. There is a need to explain the timeframes when the original negotiations were done and when the PBMR only came into play so that those issues can be separated out

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		(korrelbed modulêre reaktor). Die eerste keer wat ek daarvan gehoor het was by verlede jaar se vergadering. Dit was die eerste keer dat ek gehoor het dit is nie meer 'n PBMR nie maar 'n kernkragstasie. Ook die paaie: ek wou kom hoor of Eskom gaan help met verbetering van die pad? Vanaand hoor ons vir die eerste keer van 'n westelike roete. Ek kan vir u nog voorbeelde gee, daar is 'n wantroue by die meeste mense, wat nie gesê word nie. **Translation** He indicated that he has been quite involved in the process since the start of Eskom's negotiations. He is concerned about the entire process but he is however not speaking on behalf of the farmers. There have been a number of things that have been said and later on are changed. As an example, he mentioned the following: ▪ The kind of power station to be built has changed. At first it was going to be a Pebble Bed Modular Reactor. Now it is a Nuclear Power Station. ▪ The first time he heard of this was at the previous meeting. That was the first I heard of it no longer being a PBMR but a nuclear power station. ▪ Also about the roads: is Eskom going to help improve the road? And today, for the first time, we hear about the western road. I could give more examples, and that is the reason for a lot of unspoken mistrust that people have.	factually in terms of time frames. The facilitator also said that the issue with the roads is very interesting, because yesterday at a Key Stakeholder Meeting, a stakeholder had also said that the issue around the roads had changed and that certain information had been given over at the meeting with the Local Municipality. There is some confusion in information that is going out into the public domain. Ms Ball said that she would only talk on the EIA as she could not comment on any land negotiations conducted by Eskom. In terms of the EIA there have been two sets of public meetings. All the minutes of every public meeting which are verified by the public, are posted on the website. She requested that all I&APs who do not have access to the internet to speak to her after the meeting so she could arrange posting of minutes of previous meetings. Ms Ball further explained that nothing has changed regarding the roads. At the beginning of the project it had been explained that access roads would be necessary on the site. Information that has been presented by Arcus GIBB at the meeting is based on specialist recommendations. Specialists recommended that the western access road be the preferred alternative. They also recommended in the transportation specialist study that the road from Oyster Bay all the way to the R330 needs to be upgraded. This does not mean that this will be accepted by DEA. If DEA does accept this, a condition of the authorisation will be that this obligation must be fulfilled before construction. In the scoping phase an initial picture was presented, and the fundamentals have not changed but there are more details now. She stressed that they are recommendations.

OYSTER BAY PUBLIC MEETING (13 APRIL 2010)			
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			Mr Stott added that there appears to have been some misunderstanding with this EIA and PBMR. The original studies done in the 1980s and 1990s were for nuclear sites and at that stage we had a different type of nuclear power station. Sites were investigated for the Koeberg type of nuclear power station. Then in 1993 to 1994, Eskom started looking for a suitable site for the PBMR. Again in 1999, Eskom looked if they could build PBMR at Bantamsklip, Thyspunt and at Koeberg. At the time, it was decided that because it is a demonstration power plant, it should be built at Koeberg. In fact that EIA was almost complete and then there was a court case and the EIA was re-started. It was only in 2006 that Eskom started the nuclear power station EIA. They started the EIA with 5 sites and now there are three sites being evaluated. This is a different EIA and this is perhaps what has caused the misunderstanding. In terms of the roads, until Eskom actually get approval to build the power station, they cannot start engaging in this debate nor can they put money into new projects for roads.

END OF OYSTER BAY MEETING

HUMANSDORP PUBLIC MEETING (14 APRIL 2010)			
No	**Name**	**Comment**	**Response**
1	Mr Francis Searle Local Resident	Mr Searle asked if there is any way that the public can become involved in ensuring that the mitigating factors are managed by the construction people assuming that the project goes ahead.	Ms Ball responded that they had put in a recommendation that an environmental committee be established which would involve key stakeholders from the area around the proposed site. Ms Herbst (Eskom) responded by saying that this has been implemented at other large new build projects and is very effective. In addition to this one of the power stations, the Ingula Pumped Storage Scheme, Eskom has established a partnership with key conservation NGOs to ensure the effective management of the conservation area of 8000hectartes.
2	Mr Rupert Gerber Local Resident	Mr Gerber asked about the exporting of products, particularly to the EU, produced in this area, he wanted to know if there is a possibility that anything will change in the future. For example could they ban the import of Chokka from this area. He asked if they are currently exporting any fish to any foreign country from the Koeberg area.	Ms Ball said that this issue was addressed in the agricultural study and the marine impact assessment. In terms of agriculture the specialist has firmly stated that this would be a low significant potential impact, it is highly unlikely, that there would be either contamination or that markets would refuse to take products from this area. In terms of the marine life, she explained that the background levels of Strontium that are in the ocean all around the world. Monitoring has been done at Koeberg Nuclear Power Station and the values have not increased. This specialist also stated that this is highly unlikely. Ms Ball said that according to the agricultural study there is a very mature wine industry around the Koeberg Nuclear Power Station and these wines are sold all around the world. There is also other mixed farming.
3	Ms Leila Mahomed Mainstream SA	She inferred that some of the information presented by the consultants was misleading.	Ms Ball asked that it be placed on record that in no way do the environmental consultants want to mislead anyone in this

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			presentation. Information has been taken straight from the specialist studies.
4	Ms Leila Mahomed Mainstream SA	She made the following comments: ▪ The no-go alternative is not an option. She is surprised to see that being given as an alternative. ▪ Base load – the recent study has shown that renewables can provide a base load because it follows the load flow of the country (use pattern) and can be considered as recent research suggests. ▪ Recent wind profile in SA – there is increasingly new information that is available internationally. Have all these options been assessed as part of the EIA. Ms Mahomed said that her understanding of baseload is if it can meet the demand during the day. If you look at the most recent wind resource study, it shows that the way the wind blows across South Africa, it follows the load flow pattern - she offered to forward the necessary documents on to the consultants. There is increasingly new research in South Africa and internationally that show this. Ms Mahomed asked if the no-go alternative would be put back on the table again.	Ms Ball replied that from Arcus GIBB's perspective, it is their understanding that there are problems associated with wind energy generation and its placement on to the 'grid'. Base load supply needs to have reliability and quality of supply. For example electricity has to always be available to the consumer, particularly for large industry and mining. Regarding wind she explained that as a company they are working on a number of EIAs for wind generation facilities. Worldwide there are problems in terms of spikes onto the grid and in terms of reliability of supply. Wind can also be too strong or too weak there is a study presently to map the wind around the country. Mr Stott added that around the country the wind blows differently. There is therefore the argument that if you put the equivalent of 2 000 MW in the Cape and then you put another 2 000 MW in KwaZulu-Natal and another 2 000 MW in Gauteng then that could provide the baseload of a power station needing 4 000 MW. This is not correct, because there will be days when there is no wind or the wind is not the correct strength. The definition of baseload is the ability to supply electricity for at least 75 % of the time. The renewable energy feeding tariffs that the NNR has published, show that wind energy can provide electricity for 27 % of the time. Ms Ball said that they were always happy to receive new information. Mr Stott said that not more than 20 % of their energy comes from that. There is no country in the world that gets more than

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			20 % of their energy from renewables. Ms Ball said the 'no go' alternative has been assessed.
5	Ms Nicoleen Swarts Mainstream SA	Ms Swarts wanted to comment on the stability of power generation. Her understanding is that wind generation does actually contribute to the stability of the base load.	Ms Ball said that her comment was noted and will be addressed in the issues and response report. **Mr Leask, from Eskom said that in certain circumstances this was correct on weak parts of the network when the wind was generating. However the difference is that we are talking about base-load capacity and the system reserve margins if a large generator is lost during system peaks. The problem with wind generators is that they are individually small units and do not contribute much to the system dynamic inertia. What we are saying is that Nuclear-1 has not yet been approved and if the Government decides it does not want nuclear then wind is one of the options. Even if Nuclear-1 is approved, there is still an opportunity for wind to come in in large amounts.** The facilitator said that Ms Swarts had raised an interesting point and she asked Ms Ball if these technical details are in the report, specifically in terms of alternatives. Ms Ball replied that these issues were covered to a certain extent but she asked Ms Mahommed and Ms Swarts to please send in as many details as possible regarding there issues. This will then be addressed and independent experts will examine this information and an answer will be sent to the meeting participants.
6	Ms Nicoleen Swarts Mainstream SA	Ms Swarts referred to the presentation and asked about the Peak Ground Acceleration (PGA) levels.	Mr Heydenrych replied that Koeberg itself is not a standard nuclear power station, it was built specifically to withstand high PGA values.

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			Mr Stott explained that due to the level of seismic activity, Koeberg was designed especially to cater for this. Underneath the nuclear reactor is the raft so that the whole structure can move.
		Ms Swarts accepted the PGA as ~0.3g. She asked if could another power station be built at Koeberg.	Mr Heydenrych said that it was possible but it would be much more expensive. Ms Ball said that economically this adds to the overall cost of the power station. Mr Stott said it is not to say the Eskom cannot build there, but if they do, they would have to make sure that the design took the uncertainty into account as it will definitely cost more and the economic factors have to be considered in the selection of a site. Ms Ball said the need factor had been considered for Nuclear-1, that is replacing this capacity in a short space of time.
		Is the proposed power station still a Pressurised Water Reactor type?	Yes, but a more advanced technology than Koeberg.

END OF HUMANSDORP MEETING

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1	Ms Trudi Malan Spokesperson for St Francis Alliance	Ms Malan stated as a point of order that the community do not feel that due process has been followed, nor that sufficient time has been allowed for comment. She stated that they do not accept the hour-long presentation, the Executive Summary has been published and as everyone has read it, the presentation should focus on issues not in the Executive Summary. The community would like more time to ask questions. Ms Malan again objected to the presentation being one hour long and the discussion period only 30 minutes.	The Facilitator said that this was respected and her point had been heard. She also stated that Mr Hilton Thorpe, representing the St Francis Kromme Trust and also the St Francis Bay Residents Association has requested formally to do a presentation on behalf of those communities. The facilitator said that the team must ascertain if Mr Thorpe does in fact represent all audience members and if everyone agrees to a presentation being given by Mr Thorpe. The facilitator proposed that the meeting be structured as follows: 1. Environmental Consultants Presentation 2. 30 Minutes discussion 3. 30 Minutes Mr Thorpe's presentation 4. 30 Minutes general discussion The facilitator explained that the presentation must be consistent across all meetings. She asked for a show of hands to see if everyone did not want the presentation by the consultants. There were a few people who wanted the presentation to go ahead. The majority of the members in the audience indicated that they were comfortable not to see the presentation. The facilitator conferred with the consultants and it was agreed that the meeting begin with the consultants answering questions posed by the audience.
2	Mr Hilton Thorpe	Mr Thorpe said that there was a meeting held with	Comment noted.

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	St Francis Bay Residents Association and St Francis Kromme Trust	various bodies and it was decided to form the Thyspunt Alliance and instead of doing a presentation there has been a number of questions prepared which will be put to the consultants. Therefore he asked that the meeting structure be changed to reflect this.	
3	Mr Hilton Thorpe St Francis Bay Residents Association and St Francis Kromme Trust	Mr Thorpe asked about the validity of the EIA process: How can an EIA be contemplated when the specific nuclear technology is not been decided upon?	Ms Ball replied the technology was a pressurised water reactor type, similar to the Koeberg Nuclear Power Station. Eskom has experience in constructing and operating this type of reactor. The plant type is unknown to the utility. Eskom has begun a commercial process together with government. An envelope of criteria has been used in this EIA. The criteria were obtained from Eskom and these were modelled. The specialists used these criteria to undertake their assessments. If any other vendor approaches Eskom through the commercial process, should this EIA be authorised, and Eskom gain the various other permits (about 30 other permits are required) the vendor would have to comply strictly with those set of criteria. The criteria are based on generation 3 plant types whereas Koeberg is a generation 2 type.
4	Mr Ryan Donnelly For A Safe Tomorrow	Mr Donnelly asked what material information the consultants had with regard to emissions and radioactive emissions in particular. Mr Donnelly objected to this because he said it was within the scope of the independent consultants and if they continually leave their job to Eskom, it is a clear indication that this process is not independent.	Ms Ball replied that Eskom would have to answer this question as to how they acquired these criteria. Ms Ball explained that an envelope of criteria was provided to them by Eskom, Arcus GIBB then gave this information to the specialists and they reviewed this information. Ms Ball said that there were many references and these can be found in the Air Quality Specialist Study as well

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		Mr Donnelly then asked if there had been any independent studies on radioactive emissions.	as the full reference list at the back of the report. There is a peer-reviewed reference list.
5	I&AP St Francis Kromme Trust	He stated that it has been mentioned that it is the generation 3 type that will be used but the report says that this is in fact the favoured one and that others will not be excluded.	Ms Ball replied that the envelope of criteria were for generation 3 type.
6	Ms Tania Jordaan The Window Secret	Ms Jordaan asked if the nuclear specialist came from one company or were a few companies used.	Ms Ball replied that the company was Colenco Engineering in Switzerland.
7	Mr Hilton Thorpe St Francis Bay Residents Association and St Francis Kromme Trust	Mr Thorpe then stated that because the specific technology is unknown, the NNR is unable to do anything. It is a concern that the role of the NNR has been separated from the EIA, even though the DEA and the NNR are going to work together. The process is not taking place in parallel, the reason for this is simply that Eskom has not identified a technology. He asked when an announcement would be made about the technology. He further stated that even though Eskom favours Generation 3, the government had halted negotiations with Areva and Westinghouse about 2 years ago due to their technology being too expensive. He therefore asked the question what other Generation 3 vendors there were in the World and if so do they have the same safety standards. The facilitator asked Eskom to explain if the NNR have to wait for a decision on a plant type to be made before they can continue with the permitting	Ms Ball replied that as far as she was aware there are no restrictions in the NEMA that there is a requirement to wait for any other processes that might be run by the applicant. Mr Stott replied that the NNR can only start its work once Eskom provides it with a safety case. The safety case is obtained from the supplier and it is a huge document, which assesses the safety of the plant. Therefore Eskom does need to know the exact design of the power station. This can only be done once commercial negotiations are completed with the vendor. The NNR is looking at different designs throughout the world. Mr Stott went on to explain that the government were in fact still determining whether South Africa would have any nuclear power stations. This is being done through the Integrated Resource Plan Process that is currently being completed. This plan is expected in June or July 2010. If this plan does provide for nuclear power stations, Eskom will re-open negotiations with vendors throughout the world. It is however Eskom's stance that they will only

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		processes.	accept Generation 3 technologies.
8	Ms Trudi Malan Spokesperson for St Francis Alliance	Ms Malan quoted from the Executive Summary, "With respect to this EIA, specialist studies relating to radiological issues have been included for information, as the DEA will not consider radiological impacts in their decision making". This means that this community must comment on the unknown affects of radiological issues, this, she feels is unfair and flawed. The facilitator acknowledged Ms Malan's comment and said that it is an issue that is raised at all the meetings. She requested the consultants to clarify this. The facilitator asked where specifically is the safety of the public taken into account. She asked if it would be part of the NNR process and then what happens if there is a positive authorisation of the nuclear site – will it become null and void if the NNR studies show that the safety concerns are not being taken into account.	Ms Ball replied that the consultants are governed by legislation and Acts such as the NNR Act, which clearly states that there is a place for co-operative governance and the NNR have the expertise and experience and capacity to assess radiological issues. In the Scoping Report as well as the EIA Report the co-operative agreement has been included and NEMA also provides for co-operative-type agreements. The DEA have informed the consultants that they do not have the capacity or experience to assess radiological issues. They have therefore tried to inform the public about this and it is the reason for the inclusion of four studies in this particular EIA that would not have typically formed part of an EIA. Ms Ball replied that there are two separate pieces of legislation. In terms of safety – this falls under the NNR Act. She went on to say that she assumes that if safety issues are not met Eskom would not be able to construct the plant. Mr Stott confirmed that if the NNR is not satisfied that a plant can be built and operated safely, they will not issues a nuclear installation licence, if Eskom does not have this licence, regardless of what other authorisations Eskom has, the plant cannot be constructed.
9	Mr Mike Simms St Francis Residents Association	Mr Simms asked Eskom to confirm that they are not presently negotiating or tendering for a Nuclear Power Station.	Mr Stott said that Mr Simms was correct. Eskom is not in a position to negotiate with any vendors until they get the go-ahead from government.

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		Mr Simms then wanted to know how Arcus GIBB could state in their report that construction would begin next year, 2011.	Ms Ball replied that Eskom would like to begin construction next year, it is not a given that they will, Eskom has also indicated that this was an optimistic target. She also said that all the slides from the presentation would be placed on the Arcus GIBB website and each slide will be numbered so that people may comment on specific slides. Obtaining all the permits will take a great deal of time. Also, all specialist reports will be reviewed by the public. Recommendations and mitigation proposed by the specialists are important, and typically the DEA will build these into the conditions of authorisation and some of those recommendations are extensive, particularly the Heritage Resource recommendations. Ms Ball further explained that Eskom may not start construction until every condition is fulfilled. The DEA will audit this process very carefully.
10	Mr Ryan Donnelly For A Safe Tomorrow	Mr Donnelly asked if the information about the studies regarding annual inhalation of dust could be updated. He also asked if the figure which shows a blue line of .50 sieverts which is considered an annual overdose of radionuclides. He noted that this includes Rebels Rus and the sanctuary area, he wanted to know what would become of these people, will they be relocated.	Ms Ball said that she would ask the specialist to examine the data and verify whether it is correct or if it needs correcting. Ms Ball further explained that there is an international standard of 250 microSieverts per annum. Koeberg has set its own limits and currently operates well below this figure. **Post-meeting note: It was established later in the meeting that Mr Donnelly had misinterpreted the graph in the report and what he thought was a higher reading than the limit was in fact a lower reading.**
11	Mr Alwin Malgas	Hy will net weet wat die veiligheid aspek betref. Is	The facilitator answered and explained in Afrikaans as

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	Sea Vista Forum	dit nie veronderstel om in die impakstudie te wees nie? Tweedens het Mnr Stott het genoem dat hy nie bewus is wanneer en of die regering ooit 'n kernkragsentrale sal bou nie. Maar in die volgende asem sê hy weer in Junie gaan ons hoor of ons [die voorgetelde planne goedgekeur is]. Translation He wants to know about the safety aspects. Shouldn't safety aspects be part of the Environmental Impact Study? Secondly, Mr Stott mentioned that he didn't know whether or when the government will build a nuclear power station. But the next moment, Mr Stott said that we should hear in June whether [the proposal has been approved].	follows: Die een belangrike aspek insover dit die veiligheids-aspekte aangaan is dat dit nie as deel van die omgewingsstudie gedoen word nie. Dit word as deel van die NNR regulasies gedoen. Die bekommernis was wanneer gaan dit gedoen word en kan dit gedoen word. Dit word ná die omgewingsstudie en in die publieke domein gedoen, en almal het die geleentheid om deel van daardie studies te wees en daarop kommentaar te lewer. Soos wat Mnr Stott verduidelik het, kan die kragstasie nie gebou word tensy al die studies gedoen word nie. Daar is sekere permitte wat goedkeuring moet kry en daardie proses word in die publiek gedoen. Sover as wat dit Mnr Sims se vraag aangaan: Mnr Stott het gesê eers in hierdie jaar Julie gaan die regering 'n besluit maak oor of daar wel 'n kernkragstasie gebou kan word op hierdie land. So hoekom word daar in die studies gesê dat die konstruksie in 2011 gebou gaan word? Wat Mv Ball gesê het dat dit optimisties is want daar is verskriklik baie wat van nou tot dan moet gebeur en daar is 'n baie sterk moontlikheid dat dit nie dan sal kan geskied nie. Translation The important thing to remember about the safety study is that it is not done as part of the environmental impact study. Safety falls under the NNR regulations and will be considered in their study. There was a question about whether this will be done and when it will be done. This

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			will be done after the environmental study and will take place in the public domain. Everybody will have the opportunity to be part of these studies. As Mr Stott explained, the power station may not be built unless all the studies have been done. Certain permits have to be issued, and that process takes place in public. As for Mr Sims' question: Mr Stott first said that the government would decide in June of this year whether a nuclear power station can be built on this land. So why do the studies say that construction will commence in 2011? What Ms Ball said, is that that is a bit optimistic, because there is so much that has to happen before then, that it is very unlikely that it will be done by then.
12	Mr Hilton Thorpe St Francis Bay Residents Association and St Francis Kromme Trust	Mr Thorpe asked about a technical term used in the EIA, that is the term material information. He asked Ms Ball to explain this term and whether the specific technology to be used is not possibly the classic example of material information.	Ms Ball responded by saying that her understanding of the term material information is enough information to make a decision or to undertake the assessment in order to make the decision. She corrected Mr Thorpe by saying that the technology is known it is only the plant type that is unknown. She feels this is not material information as they have the envelope of criteria that were used in the assessment. Vendors would not be able to submit a power station that does not within these criteria.
13	Mr Hilton Thorpe St Francis Bay Residents Association and St Francis Kromme Trust	Mr Thorpe raised the issue regarding alternative sites. Thyspunt site was selected 30 years ago on the basis of certain criteria (no-one seems to have seen these criteria). They are aware that the site is geologically stable, seismically stable, obviously hot water can be discharged into the sea. It is their view that the way in which the EIA was conducted does	Ms Ball replied that alternatives were examined in this EIA. During the Scoping phase, five suitable sites for nuclear power stations were chosen. Those sites came out of a Nuclear Site Investigation Programme (NSIP), which was undertaken in the early 1980s and comprised three phases. The first phase examined nationally, where regions were technically chosen. Then within

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		not address alternative sites. Many things have occurred during the past 30 years, politically, socio-economically, demographically etc. and this EIA should look at alternatives to Thyspunt.	these regions suitable sites were chosen and the Western, Southern and Eastern Cape were chosen. After this a detailed phase consisting of three studies which examined details of suitability. The site suitability was undertaken according to the current EIA procedure guidelines. Arcus GIBB started with suitable sites and these were investigated in the scoping phase. The NSIP report was reviewed and the 24 independent specialists were consulted. After more detailed investigations 2 sites were removed, *viz*. Brazil and Schulpfontein. This application is for one nuclear power station of 4 000 MW and if Eskom goes 1 MW over this limit they would have to start a new EIA from scratch. This application is therefore only for this specific power station. The alternatives were therefore; Brazil, Schulpfontein, Thyspunt, Bantamsklip and Duynefontein.
14	Mr Mike Simms St Francis Residents Association	Mr Simms stated that he feels Ms Ball is avoiding the issue. The issue being that Arcus GIBB were given 5 sites to inspect and these have been covered. These were chosen in 1980 when the social, political and demographic effects were completely different. Today there is a major industrial access between Port Elizabeth and East London where the power is needed, and where infrastructure, labour and skills exist. Yet, these areas have been left out of the study. Therefore alternatives have not been adequately addressed.	The facilitator added a question by asking if in terms of the terms of reference of the specialists were they asked to build on the socio-economic findings of 1980 and the changes that have arisen since then. Ms Ball responded by saying that the specialists were asked to start afresh with independent studies on the current situation and projected future situation. The 24 specialists found no fatal flaws in any of the 3 sites.

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15	Mr Ryan Donnelly For A Safe Tomorrow	Mr Donnelly voiced his support of Mr Simms and said these sites were chosen three decades ago and Arcus GIBB have responded that these three sites had no fatal flaws. He felt that the question had not been answered as Mr Simms had asked had other alternative sites been investigated.	Ms Ball explained that because the Nuclear Siting Investigation Programme (NSIP) report was compiled in the 1980s, they asked all the specialists to investigate the impacts currently. In terms of the EIA Regulations, NEMA talks about looking at reasonable and feasible alternatives. Other alternatives have been put on the table by I&APs, these can be tracked in the IRR.
16	Mrs Sandra Hardie St Francis Conservancy	Ms Hardie referred to the social impact of the possible nuclear plant. She stated that it is her understanding that there are two plants planned and not one as stated by Ms Ball. These are being planned on pristine ground where people live for peace and tranquillity. They did not move to St Francis Bay to have a nuclear power plant on their doorstep. She asked if there are radionuclides emitted from Koeberg. If so, what is the cumulative impact and what is the delay period in natural levels.	Was there no answer???
17	Ms Tanja Lategan Supertubes Surfing Foundation	Ms Lategan said there was an article in the Cape Times in 2009 saying that the CEO of the Coega Development Corporation had said that there was a feasibility study of combined gas and coal power station to be erected at Coega which would be able to generate 3 000 MW. The balance of power would then be from wind power. She asked why then would 4,000 MW of nuclear power be needed. The facilitator asked for clarification if the Coega Development Corporation could contribute to the national grid and is it an option that would avoid	Ms Ball stated that by 2025 Eskom needs to replace 40 000 MW of generation capacity in the country. Many of the power stations are coming to the end of their lives. 4 000MW is this particular EIA application with a base load power station. There are two options that are commercially viable for base load, coal-fired power stations and nuclear power stations. She said she was not too sure about the close cycle gas turbine plant but she was sure it was not a base load power station, as it is run on diesel and is extremely expensive. Mr Stott replied that it is estimated that South Africa will need 50 000 MW of new capacity by 2028. That

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		looking at a nuclear plant in the area.	assumes that 10 000 MW of coal-fired power stations will shut down as they come to the end of their lives. Those power stations are needed in various parts of the country to ensure that Eskom can adequately supply electricity to the whole country and keep the grid strengthened. Eskom needs more than one power station in the Eastern Cape and more than one in the rest of the country as well. Therefore 50 000 MW required at 4 000 MW each. Certainly Eskom also needs open-cycle gas turbines and combined cycle gas turbines, they need wind, they need solar, they need nuclear and in the longer-term, coal. It is not a question of if you build one, you do not need the other one, South Africa needs them all.
18	Mr Joe Oosthuizen St Francis Residents Association	Mr Oosthuizen went back to the question raised by Mr Simms because he felt it had still not been answered. The question was very clear, working with 30 year old figures is unacceptable. In view of the fact that sites were selected 30 years back, did you get the instructions from Eskom to specifically look at 20 different sites along the whole coast line and evaluate them. What about Port Elizabeth and East London. The actual question that has to be answered is, "How many sites did the team evaluate in the Eastern Cape"? The facilitator asked Ms Ball if Arcus GIBB had accepted the report that was published in the 1980s, without question that these were the only	Ms Ball answered by saying that Arcus GIBB started off with 5 sites that were provided by Eskom, these sites were checked and assessed as part of the scoping phase to see whether they were still suitable. It was found that technically they are all suitable sites. The specialists then did detailed studies from 2007 until now. **I&AP's are referred to the scoping report where the site selection process is discussed in detail. The site selection process was also discussed during the scoping phase public meetings.** Ms Ball answered that there have been other sites investigated. Coega has been put on the table at the PE stakeholder meeting. The answer to this site was that it

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		sites that were available on which to base your studies. Did Arcus GIBB have the liberty to examine any other alternatives as opposed to those that were given to them as part of the initial study that was done. She went on to re-iterate that this leads on to how valid those studies are in the present day. The facilitator then asked that in terms of NEMA, alternatives must be assessed. She asked what the authorities' view had been on the alternatives (as had signed off on this study). Were the authorities satisfied that these sites, selected so many years ago, would form the basis of the alternatives to be assessed?	was not technically reasonable or feasible for Nuclear 1 given the time frames. Assessing new sites takes 10 years and in the opinion of Arcus GIBB there were enough alternatives for this EIA in terms of legislation. Ms Ball said that the facilitator was correct and she had recommended to Mr Thorpe that he could also consult with the authorities as they had approved the Scoping Report and they have also approved the Revised Plan of Study. **Post-meeting Note: The Department of Environmental Affairs (DEA) has approved the Scoping report, which is based on the premise that only the sites identified in the Nuclear Site Investigation Programme need to be considered as they are the only sites that have been proved to be technically feasible.**
19	Ms Trudi Malan Spokesperson for St Francis Alliance	Ms Malan categorically refused to allow Eskom to respond. Ms Malan as a follow up question asked Ms Ball to clarify that she had said that if Eskom go 1MW over they would have to start the EIA over again. Ms Malan then quoted from the Executive Summary, "The area of the footprint assessed in the EIA makes provision for the potential future expansion of the power station to allow for a total capacity of 10,000 MW". Now Ms Ball has said that recent studies have been done in 2007. She wanted to know why the Social Impact Assessment	Ms Ball responded by saying that if Eskom wants to build a nuclear power station of 4,001 MW they will need to start a full EIA again. Arcus GIBB asked the biophysical specialist, how much land, from a footprint perspective, is available. Arcus GIBB have therefore not assessed any more than 4,000 MW of an output or an input. In summary, if Eskom want to add on to this nuclear power station they would have to start an EIA for the new facility.

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		had been based on 2001 figures. She went on to state that the technical studies needed to construct the power station have been brilliantly executed, they have spent time on the site. However, the social impact that affects the community has had no money spent on it whatsoever. Census figures for 2001 have been used, this she feels is atrocious. She went on to say that Eskom must get off the nuclear bandwagon and start informing people about alternatives. Not only solar and wind but also smart grid systems and virtual power stations. She also stated that it takes so long to construct a nuclear power station that by the time it is up and running it would be a waste of time. It is the most expensive electricity in the world. In Finland, they are currently 4 years behind on time and 50% over budget. The same thing is happening in France.	Ms Ball admitted that the figures used by the Social Impact Study has been raised as an issue previously. The social specialist used the most recent data available. Ms Malan's concerns have been noted. **Post-meeting note:** **The assessment of issues in the Social Impact Assessment were based on information gathered from:** • **Issues identified during the Scoping Process;** • **Planning and policy documents pertaining to the area;** • **Interviews with key interested and affected parties;** • **Social issues associated with similar developments; and** • **The experience of the author in the field of SIAs.** **Post-meeting note: Short delays were experienced in France during concrete pouring but they are now on track for commercial operation 2013** The facilitator then placed on record that an issue was raised about Eskom and in terms of certain objections and fairly strong statements were made. The facilitator wanted Eskom to respond but Ms Malan declined the proposal that Eskom to reply to her.
20	Prof Richard Cowling FOSTER	Prof Cowling asked Ms Ball about the choice of site and fatal flaws and risk. He asked if she could	Ms Ball replied that Arcus GIBB had appointed a Dune Geomorphology Specialist on the team, a geologist, a

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		describe the process used by the team to assess the risk of building a nuclear facility on a mobile dune system that is full of surprises. It delivered a very interesting surprise in November 2007. Did they have insights into this area and specifically this unique dune system? Prof Cowling responded by saying Arcus GIBB cannot treat the system piecemeal as it is all inter-related.	geohydrologist, etc. and the specialists have confirmed what he has said, that is, that the Oyster Bay headland bypass dune system is extremely rare, extremely unique from many perspectives. The proposed position of the nuclear power station would need to take this into account and the specialists have recommended that it not be built on that dune system itself, but rather on the more hardened dunes. Ms Ball stated that Dr Werner Ellenberger is the specialist and he has been liasing with colleagues at the Nelson Mandela Metropolitan University (in Port Elizabeth). Ms Ball asked Mr Heydenrych to explain the sensitivity maps which he did using maps from the presentation. Ms Ball then explained that these are draft reports and asked that if audience had any details to add to the drawings they must please submit them and these will be forwarded on to the specialists. In answer to a request maps of the proposed access roads were also displayed and explained.
21	Mr Ryan Donnelly For A Safe Tomorrow	Mr Donnelly voiced an objection that this EIA is not a platform for the developer to further their agenda. Every time the independent consultants pass over a question to the developer it should be outside of the scope of the independent consultants. Mr Stott answered a question on need and alternatives and that is within the scope of the independent consultant. He then asked who, other than Eskom, has the independent consultants, consulted,	Ms Ball replied that as she has previously stated, they had investigated alternatives to base load and they had used peer-reviewed documents, a full reference list is available in the report. Ms Ball also stated her objection, as she felt that she has not passed any question on to Eskom that relate to the EIA and she declared publicly both her and Arcus GIBB's independence. In the Final EIR there will be a

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		specifically other energy organisations such as the one he represents (For a Safe Tomorrow). The facilitator explained that there are certain aspects that the independent consultant is obliged to answer and then there are certain issues, which the developer has to answer.	declaration signed in front of a Commissioner of Oaths, stating this.
22	Ms Donna Jooste Coetsee Nature's Calling Magazine	In terms of the hot water being released into the sea, has any consideration taken into account the fragile eco-system in terms of the sea and how this water, which is being flushed into the sea, is going to slowly degrade the fragile system, no matter which site is chosen.	Ms Ball explained that through the operation of this nuclear power station heated water is released into the ocean. A number of studies assessed this. The Oceanography study modelled the sea bed and currents for all three sites. Furthermore the Marine Specialist Study also investigated this issue. The potential impacts on the marine environment are quite similar on all of the sites. The specialist found there were a number of potential impacts such as the disposal of sand, particularly the fine sand, as at two of the sites extensive excavations need to be done. The specialist has recommended, particularly at Thyspunt, because of the Chokka spawning, that based on the modelling undertaken, that the pipeline that takes the sand out would have to be 1.7 km. The pumping rate is also important in terms of sand disposal, and a medium pumping rate has been recommended to try and contain the sand in an area of 3 km^2. In the opinion of the independent specialist, Prof Charlie Griffiths and Dr Tammy Robinson this is an acceptable

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			impact and it is a low impact after mitigation measures are applied. The area around the pumping outfall will be sterilized for a long period of time, but after a long time, it will recover after 60 years. **Post-meeting note:** The specialist Marine Assessment reports that while spoil will be discarded only during the construction phase, the open water environment will be affected in the short term but the benthic environment will be negatively impacted for many years. In terms of sea water cooling, they have recommended specific mitigation measures in terms of a pipe (not a channelised pipe) out to sea and at a very fast pumping rate. In terms of brine, at all of the sites a desalinisation plant is included in the application as water is a scarce commodity in this area. The brine, or concentrated sea water, would also need to be pumped out to sea and the potential impact which during the construction phase would be the most intense, would have to released, according to the specialists, at the surface zone. During the operational phase it would be mixed with the normal outflow water.
23	Mrs Bridget Elton St Francis Bay Resident	Mrs Elton said that the people who live in Santerene know what it is like to live on a Sand Dune. Hardened or not it was proclaimed that houses could be built on them. They all have problems in their houses, which are on sand dunes. They have a unique sand river and unique dune system, hardened it might be, but it has not been	Ms Ball clarified that her company was not going to build a power station anywhere; Arcus GIBB is the independent consultant and have only made recommendations. **The aspect relating to the stability of the dunes and the impact on the nuclear power station: This is a**

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		tested. Building anything like a nuclear power station on this system will cause problems. Houses have many problems such as mirrors, shower doors and floor tiles that crack. Sand moves, hardened or not. If a nuclear reactor is to be built on a dune that no-one can guarantee or has sound scientific evidence about this unique area, then she asked that this be investigated.	**very important aspect and will be incorporated into the final design of the nuclear power station. The footprint of the power station lies between the dune and the sea.**
24	The Facilitator	The facilitator confirmed that many of the issues being raised at the meeting relate to safety of design. The questions being asked by stakeholders are about the suitability of the sites. What are the criteria that the environmental consultants have looked at and what have been their envelope for the criteria that they have got to evaluate in terms of suitability. Where do the terms of reference start and stop and what are they evaluating in terms of the design of the site, in terms of suitability for the building on that site. She asked Ms Ball if these were part of the terms of reference.	Ms Ball responded by explaining that out of the 24 specialist studies the largest majority of studies relate to geology and geohydrology, which she then listed. All of these studies stated that with mitigation, it is technically, from an environmental aspect, possible. Decisions on the radiological and the safety issues do not fall within the ambit of this EIA they form part of the NNR process.
25	Ms Karen Hawinkels Local Resident	Ms Hawinkels referred to the Executive Summary and noted that it constantly refers to the fact that Thyspunt is not really the best place to build this power station. It states that there is a huge impact on the dunes, on the flora and fauna. Why, she asked, was this site then being pushed through when categorically it is stated that this is not the best place to build. Her second question was regarding the EIA, someone may be considered an expert in 2010, in	Mr Heydenrych responded that Ms Hawinkels was correct in her understanding of the Executive Summary. There are some potential significant impacts at the site. The area where the proposed site is proposed to be constructed has the lowest sensitivity on the site. He further explained that there was an integration meeting with all 24 specialists, and all of them agreed on a number of criteria according to which the most appropriate site would be chosen. Those criteria are listed in the report, they are technical, biophysical, social

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		2015 they may no longer be considered an expert on that particular subject, but the community have to accept what they have advocated in 2010. Does the EIA allow continual assessment of the project?	and environmental criteria. According to those criteria, which were agreed with the specialists, Thyspunt was chosen as the preferred site. One of the significant benefits that they identified with regards not only to Thyspunt, but also with regards to Bantamsklip is that there is no formal conservation status on these sites. Considering the fact that the power station and its associated infrastructure is only going to take up 31 ha of the site means that the rest of the site can be effectively conserved as is the case currently with Koeberg. All the biophysical specialists agreed that that would be a significant conservation benefit for the sites. Ms Ball then answered the question about on-going studies by stating that they have had some good suggestions at the Bantamsklip round of meetings where the SANBI has volunteered to undertake monitoring and species surveys of the site on an on-going basis and a number of specialists have recommended on-going monitoring and on-going studies at the sites.
26	The Facilitator	The facilitator felt that a critical challenge in terms of any EIA project and in particular this one is the integration of all of the specialist studies. For example the integration of the access roads and have the specialists actually looked at the impact of these roads in terms of all the studies and has this been sufficiently covered and is it captured in detail	Ms Ball responded by explaining that the specialists were clearly given the entire proposed infrastructure, which encompasses the nuclear power station, and this does include access roads. She said that if each specialist report is examined in detail it could be ascertained that they made all the

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		within the reports. She went on to explain that the instructions to the specialists must include the long-term impacts and she asked if Arcus GIBB were given instructions to look at the environmental management programme and the plan in terms of mitigation and in terms of managing the site during the construction phase.	necessary assessments and these were integrated into summary tables at the end of each report. In Chapter 9 of the EIA Report these summaries are detailed. Regarding the access roads, Ms Ball stated that the specialists had been asked to set a road corridor. The specialists all visited the site together and examined the corridor and what is indicated on the map is the centre line of this corridor. It is not the exact position of the road. The key recommendation from the study is that the specialist will need to make a further site visit before the final route is selected.
27	Ms Patricia Honey Resident of Cape St Francis	Ms Honey asked that the map of the access roads be shown. Her comment was that she did not know that there would be an access road from St Francis Bay to the site. She had not come across such information when asked to comment during the Scoping Phase. She wanted to know if the trucks carrying loads would go over the Kromme River, over the bridge, down past St Francis and how many trucks would use this route every day.	Ms Ball replied that in the Scoping Phase the application form had listed various activities and access roads was one of these activities. At the scoping phase public meetings it was also stated that access needs to be found to each site. This is a large facility, which will have about 7 700 workers in the peak of construction and about 1 400 during operation, which equates to about 850 vehicles in the morning and about 900 vehicles in the day. The construction period will be about 7 years. Typically, for a coal-fired power station, there are approximately 200 heavy vehicles per day during the peak of construction. In terms of the scoping phase, eastern and western access roads were needed to be found. A process with specialists was conducted to find suitable corridor routes and some of those routes were rejected and others were

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			verified. In terms of upgrades, the transportation specialist has recommended a number of upgrades of these transportation routes.
28	The Facilitator	The facilitator noted that the meeting had reached the time of 20h00 and she asked for verification that the meeting continue until 20h30 for a further check on time.	Participants agreed for the meeting to continue.
29	I&APs	It was noted that Mr Hilton Thorpe was appointed as spokesperson for many of the organisations and many questions had been formulated as a group and Mr Thorpe therefore needs time to ask these very specific questions that are key questions.	The facilitator then asked that Mr Thorpe ask his questions after the next two speakers.
30	Mr John Elliot Resident Cape St Francis	Mr Elliot asked if it is correct that the document will remain unchanged unless there is an objection to certain aspects within the EIA document, and unless the consultant agrees to the objection, it will remain unchanged. He asked if this is correct. He went on to explain the reason for his question, it had been stated that Thyspunt will benefit from the conservation plan within the nuclear power plant area. Building anything in a natural area is not beneficial, there are a host of other ways to benefit a natural area but building a nuclear power station and then stating in a document that it will benefit conservation is ludicrous. This statement should be removed from this document.	Ms Ball thanked Mr Elliot for his comment and said that his concerns were noted and would be fed back to the specialist. She explained that she was reporting on what the specialists had stated at the integration meeting. She further clarified that it is a draft report. She went on to explain about the process. The independent environmental consultant is obliged to note all comments. There will be track changes used in the report so that all changes can be clearly seen. The DEA check every issue and response. She asked all present to check if their issues during the Scoping phase had been adequately addressed. The facilitator added that the statement regarding conservation had come from a specialist report. She

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			encouraged Mr Elliott to read the specialist report and see what the methodology was and how this has been assessed and to also look at the overall recommendation. If he then disagrees with this, put this in writing and submit as a comment.
31	Dr Shirley Cowling FOSTER	Dr Cowling expressed some concerns about the access road. The EIA has considered a specific area but they have not considered other areas. She asked if the experts had driven on the road past the Sand River bend and down the Seekoei Pass. They should have considered the dirt road past Oyster Bay which the Oyster Bay people have been begging for and considered taking the by-pass Elandsjag Dam which avoids another river pass. She therefore suggested that the specialist become familiar with the greater area. She then stated that she had read the reports very carefully, the wording is very strong that the yellow road, the eastern road is a non-negotiable and just has to happen. It does not, however, explain why.	Ms Ball explained that the eastern access road is a new access road and the alignment is fairly straight and the topography is fairly flat. The road would be 22 m wide (including the road reserve), and would be a tarred road. The transportation specialist, the noise specialist both did extensive studies along the R330. Any upgrade to a road outside the various lines, or any new road, triggers a listed activity and an impact assessment has to be undertaken. The transportation specialist and the noise specialist have both made recommendations in terms of routes and the effects of the roads. She asked Dr Cowling to come and speak to her after the meeting to clarify the other routes that she had proposed. This route was selected from an engineering perspective in terms of the gradient, as there are ultra heavy vehicles (42 m x 8.3 m) that would be using the roads. The report will be amended to show reasons why this route was selected.
32	I&APs	They questioned the yellow mark on the map (Ref:	The yellow mark on the map is an unknown and Ms Ball

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	St Francis Bay Public Meeting	Slide No 60, Title: Access Road Alternatives) – what it represented in relation to the development. Some I&APs suggested that it represents a housing development for the construction workers.	undertook to find out what it represents and to report it to the Key Stakeholder Feedback meeting at Cape St Francis the next day (16 April 2010).
33	Mr Hilton Thorpe St Francis Bay Residents Association and St Francis Kromme Trust	Mr Thorpe said that everyone was extremely conscious of the impact that the road system would have. He has read as many of the reports as possible, including the traffic impact report, the noise impact report and the social impact report. He said that everyone is most concerned about the social impact on this area. It will change the entire character of the area forever. He then asked how seriously are the specialists approaching the issue of the social impact of this whole proposed project. The social impact report says almost nothing about the impact of the road going past St Francis Bay. It states that certain noise mitigation measures will need to be taken. The noise study focuses almost entirely on noise at the construction site and has no comment about the noise of the traffic. How seriously, he asked, therefore, are the practitioners considering the social impact of this proposed project. This goes back to the question of alternative sites and Ms Ball has dismissed Coega. The consideration of the infrastructural cost and roads is one of the major costs, and the cost of	Ms Ball answered that she has asked Mr Thorpe to provide her with as much specific details as possible. Arcus GIBB have taken the studies seriously and she disagreed with Mr Thorpe when he stated that the noise specialist only examined noise at the construction site, that is not correct, she has looked at the specialist study and also contact the specialist telephonically to confirm information. Two areas within Cape St Francis and St Francis Bay were monitored. These points were opposite Sea Vista and at the Kromme River Bridge. Regarding the Social Impact Assessment, Ms Ball explained that the Social Assessment specialist was assisted by another Social Specialist Dr Neville Bews and everyone is aware that social issues are huge. There are a number of recommendations in that report, for example, the housing for the workers needs to be in one place. Sites have been investigated in Humansdorp and Jeffreys Bay for the construction phase but for the operational phase workers would be integrated into the communities. Arcus GIBB believe that the SIA is a thorough assessment but should anyone has issues please submit them as it is a draft report.

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		roads and transmission lines is considered to be approximately R10b. He asked Eskom what they could do with this money to mitigate any shortcomings in the Coega area. Seismic inadequacies does not mean the site is automatically ruled out. If you have R5b to R10b to spend – what could Eskom do? When the social impact is considered, the dismissal of all the alternatives, there are many things that could be done to mitigate the Coega site. Mr Thorpe, as a follow up question, asked about the social side where the almost certain influx of thousands (unpredictable numbers) of unemployed job seekers will occur. These will be unskilled labour and very few will obtain work. How will these people be dealt with when they do not obtain work and they do not leave the area? The Facilitator stated that the levels of surety that the residents are asking for is that their safety is not going to be compromised in terms of assuring them that the in-migration of the labour is going to be really well controlled.	Ms Ball said that the social specialist did assess the job seekers and has provided estimates of the influx of people into the area. He has also looked at potential mitigation measures. Ms Ball also stated that the social specialist has made recommendations regarding the influx of workers. Eskom has also provided information on how they deal with labour on other sites. Two good examples are currently running, one is the Kusile Coal-fired Power station the other one is the Braamhoek Pump Storage Scheme. Mr Stott explained that at other power stations that are presently being built, Eskom do not allow recruitment to take place at the gate of the power station. Recruitment can only take place in the nearest town. This avoids influx into the immediate area. Mr Stott stated further that Eskom has been in consultation with municipalities regarding construction housing. In this instance the housing would be in Humansdorp or Jeffreys Bay or even a combination of these two. The contractors would then have to bus the workers to site. Eskom is conscious of the social problems around this issue and are implementing management methods. Ms Ball then stated that the Economic Specialist examined the infrastructure costs in their modelling for both the transmission lines and the road upgrades. The Coega site was considered in the scoping phase but was

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			considered unsuitable for Nuclear-1, therefore a comparative analysis has not been done.
34	The Facilitator	The facilitator drew the meetings attention to the fact that it was 20h30 and there were still 4 questions remaining. She suggested a break and then take questions. It was decided to go ahead with the meeting until 21h00. A stakeholder stated that there were so many issues that still had to be dealt with, in fact they needed another evening, as every question seems to raise further issues, which need to be addressed.	All participants agreed for the meeting to continue.
35	Ms Donna Jooste-Coetsee Nature's Calling Magazine	Ms Jooste-Coetsee asked if there could be another meeting held.	Ms Ball responded by saying that there is a Key Stakeholder Meeting being held the next day. If there are issues that have not been dealt with at this meeting, stakeholders may raise them at the meeting the next day. Should the alliance that has recently been formed require a meeting they should ask and a meeting will be arranged.
36	Ms Trudi Malan Spokesperson for St Francis Alliance	Ms Malan again referred to the Executive Summary, the points that have been examined for decision-making exclude social impacts. She found the exclusion of social impacts strange, because they are huge in the area. This study cannot use information from Koeberg, which is a 1,000MW power station. She went on to say that the impacts as stated by the social impact expert, are: ▪ No schools in the area - they will build more schools.	Ms Ball responded by saying that the Executive Summary must be read in context. The statements regarding significant impacts without mitigation. In terms of specific details on specialist studies, such as the economic study, she could not comment, if there are errors in the report she asked that they be submitted in writing as these are draft reports. If these reports need to be revised, this will be done, even if it alters the end findings. Ms Ball went on to say that the environment comprises economic, social and biophysical. Regarding the

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		She asked who is going to build the schools. The social impact states that every school in this area is over-supplied. There is not one school in this area that can take one more child. That is not taken into account. She then quoted, "The most important argument in favour of Thyspunt with regards to biophysical impacts is the conservation benefits". This, Ms Malan said is what makes this study ridiculous. She said social impacts were not considered. There will be people, whether they are in Humansdorp of Jeffreys Bay, but there are no schools. The SIA states that the hospital has 15 doctors. The hospital in Humansdorp has not had 15 doctors in its entire life. This specialist must re-assess this. There are no clinics to deal with the influx of people, why were social impacts not considered, she asked. There appears to be 2 sites now, Duynefontein and Thyspunt. Bantamsklip is out because economically it is unviable for Eskom. She went on to say that there are errors in the economic impact study. This study states that there will be no delays at Thyspunt because no sand and bedrock need to be removed. Yet, three pages before, it states the cost of this removal. She stated that everyone has heard that Thyspunt was the selected site from the beginning. What is	economic impact, a macro-economic study was undertaken as well as an economic efficiency study. Ms Ball asked that people should read Chapter 9 of the EIA Report where full details of assessment is recorded. Particular impacts, after mitigation were then graded and ones which were not equal at all of the sites. These were used as the basis for site selection. The facilitator reiterated that Ms Malan had raised issues that were omitted and these must be flagged and answered.

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		being shown here is smoke and mirrors.	
37	Ms Anderson I&AP – St Francis Bay Public Meeting	Ms Anderson wanted to know about the transport system. The nuclear waste has to be removed. To her knowledge, the waste retrieval site is on the west coast, which is a far way from Thyspunt and Kouga. The second point she wanted to make was that if this was still in the apartheid era, migrant workers could be controlled, but this cannot happen today. She wanted to know how Eskom thought they would be able to control people who are looking for work. Ms Renee Royal asked about high-level waste.	Mr Heydenrych replied that as far as waste is concerned, there is only one site for disposal of low and intermediate level radioactive waste, that is Vaalputs, which is in the Northern Cape. So it is correct that waste will be transported to that facility. The intermediate level and low-level waste will be transported by standard trucks (not an extra heavy load). The intermediate level waste is contained in drums, which are encapsulated in concrete according to international standards. People can stand next to the drum and there will be no effect from the waste. The low-level waste – things such as clothing, protective gloves, etc. these are stored in steel drums and also transported to Vaalputs. The high-level waste, which is spent fuel, will be stored currently indefinitely within the nuclear power station in a contained facility. There are no facilities in South Africa that accept high-level waste. Ms Ball said that waste is governed by the **National Nuclear Regulator Act, 1999 (Act No. 47 of 1999)** NNR Act and there is also a new act that has been promulgated the National Waste Disposal Institute Act, through these acts the final disposal point for the high-level waste will be determined. **Post-meeting note: Radioactive waste is governed**

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			by the Nuclear Energy Act, (which is the umbrella Act under which the National Radioactive Waste Disposal Institute Act was promulgated) and subject to the licensing of the NNR under the National Nuclear Regulator Act.
38	Mr Ryan Donnelly For A Safe Tomorrow	Mr Donnelly said that his earlier question remains unanswered. This question related to alternatives. The consultants have consulted the developer on alternative energy sources etc. Has the independent consultants consulted any independent energy organisations as far as alternatives, either locally or nationally. The organisation he represents has attended various summits such as the National Energy Summit. They have taken submissions to parliament and have been as active as possible. Yet, this organisation has not been approached as far as alternatives are concerned. Mr Donnelly said that his point is in terms of objectivity, with regard to the information on alternative energy, the source comes from the developer, Eskom. He again said his specific question is, "Have you approached any independent energy organisations with regard to alternatives". Mr Donnelly then wanted to know if the peer-reviewers were independent of the developer.	Ms Ball said that she had nothing further to add to the answer already given. They have looked at base-load and peer-reviewed reports in terms of other feasible alternatives. She re-iterated that they are not investigating renewables in this EIA. Ms Ball said that they had not. They have looked at peer-review studies which make it quite clear what is commercially viable in terms of base load in South Africa today. Ms Ball replied that they are independent.
39	Mr Alwin Malgas Sea Vista Forum	Mr Malgas is concerned that no-one mentioned jobs. What he would like to know is about recruitment.	Ms Ball answered that the SIA had examined this point and have recommended that at least 25% of the labour needed during the phases come from the local

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		He said Eskom have said that recruitment will not happen at the gates. Does this mean that people will be recruited in the streets? Does this also mean that the surrounding communities will be the pit diggers and the barrel pushers? What jobs are going to be available and who will get these jobs? A follow up question was asked. He wanted to know if the independent specialist knows how many people live in St Francis. They refer to 25% local labour and Ms Ball earlier said there is going to be 7,000 workers, that equates to many people.	communities. They also reviewed Eskom procurement policy. Ms Ball explained that "local communities" refers to Humansdorp, Jeffreys Bay, Oyster Bay, the broader local community.
40	Mr Mike Simms St Francis Kromme Trust	Mr Simms said that he is concerned about the reference to the competence of the specialists. I refer to a meeting held on 5 March 2008, a key stakeholder meeting, where the Kromme Trust brought up the fact that the specialist had been using the wrong wind directions for the Thyspunt site. Anyone who lives in this area (whether a surfer, a fisherman, a gardener, etc), knows that the wind blows from the south west. This was brought to the attention of the consultants and yet in Appendix E in the specialist survey, it continues to say that the predominant wind is north-westerly. He went on to say that the implication of this is that if it is a north-westerly wind the consequence is that any wind blows away from any population density. If it is south-westerly, it blows all the way to Port	Ms Ball said that she will take this back to the Air Quality Specialist. **Post-meeting Note: The Air Quality Assessment attached as Appendix E10 to the Draft EIR utilises data obtained from both the South African Weather Services (SAWS) for Cape St. Francis as well as from the Eskom monitoring station at Thyspunt. Both these data sets, 2004-2007 for the SAWS data and January 2008 – September 2009 for the data from the Eskom monitoring station data, confirms that the most dominant wind direction in this region is from the west northwest to northwest.**

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		Elizabeth. He further stated that the problem is that the Consultant had promised to rectify the same information over year ago and nothing was done about it. He would like this concern to be placed on record.	
41	Mr Chris Barratt St Francis Kromme Trust	This stakeholder said that at the same meeting there were various items pointed out one of which was that the maps showed 5 km radius. On Monday it was stated that Sea Vista was 20/22 km away from the site. However, when this was measured it is actually 11 km. In 2008 stakeholders had pointed out errors on the maps, they had asked for corrections to be made, they asked to be notified what method was being used to notify the specialists that there were errors. Now he wanted to know how, despite weekly reviews, that there are still errors on the maps in the current Draft EIA report.	She added that changes would be made to the map mentioned. Sea Vista is 12 km from the Thyspunt site.
42	Ms Trudi Malan Spokesperson for St Francis Alliance	Ms Malan said that this incorrect information had in fact informed the specialists. So the specialist studies are therefore null and void. How can it be stated that Vaalputs is closer to Thyspunt than Bantamsklip? She went on to say that if correct distances are used the economic study would change. The facilitator said that these were critical issues, the errors might be in the presentation of the	Ms Ball noted that the specialists were provided with a whole series of maps, and she undertook to ensure that all of the facts and figures are correct in the next version of the report.

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		information. The information may be contained somewhere in the specialist reports but it is not properly reflected on the maps and it was very clear regarding distances, specifically distance by road and as the crow flies. The facilitator said that secondly, in terms of the information that is provided to the specialists, specifically for approach and methodology she felt that this must be re-examined and properly understood so that everyone can work from the same page. The facilitator noted that the technical content of the reports which are now being reviewed by the public, has to be critically examined for accurateness. The specialists have to respond to these challenges.	
43	Mr Mike Simms St Francis Kromme Trust	Mr Simms stated that there are many submissions that need to be sent in and he feels that 10 May 2010 is unacceptable in terms of amount of time that the public have been given to review these reports. Especially when considering the amount of errors that are currently being found. The public cannot trust the specialist reports.	The facilitator noted Mr Simms concern. The facilitator asked for consensus that the meeting continue until 21h30. It was agreed.
44	Mr Hilton Thorpe St Francis Bay Residents Association and St Francis Kromme Trust	Mr Thorpe asked for an extension to the comment period. Mr Thorpe commented that it is appalling to him that specialists who have been paid to do a job and they cannot do it correctly. Now the public have to	**An extension to the comment period has been granted it now closes on 31 May 2010.** Ms Ball responded by saying she emphatically denies these allegations. There have been differences of opinion within the specialist body as to which is the

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No	**Name**	**Comment**	**Response**
		go through these reports and find the numerous elementary errors. He went on to say that if any aerial photograph of the area is examined, there is a bypass headland dune field, or the remains of one, which go directly from Thyspunt to Sea Vista to Harbour Road. The whole of the [sand stream] area, which used to be sand dune was part of the by-pass headland dunefield which came from Thyspunt. That reflects a high energy south-westerly wind which has blown for centuries, millennia, and the specialists cannot get it right! He noted that there is now a lack of confidence in this entire EIA process. He has told the consultants that this is a worry. All the consultants, the experts are selected, paid and appointed by the developer. How could this work, he asked, this leads to a perception of a conflict of interest. He therefore asked, has the mindset been from the outset that Thyspunt will be site.	preferred site. We had a tough two-day integration meeting with the specialists arguing against each other and with us. It was not a pre-determined EIA.
45	The Facilitator	The facilitator asked if the environmental consultant had agreed to further meetings with certain members of the audience. The facilitator added that she would like the issue of attendance of key specialists at further meetings to	Ms Ball responded by saying that if there was a need and a wish from this community for further meetings because they do not believe that the issues have been fully explored in the public domain, there is a key stakeholder meeting the next day. She would also consider any requests for further meetings. She added that key focus group meetings are an effective tool.

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No	**Name**	**Comment**	**Response**
		be considered.	
46	Mr Chris Barratt St Francis Kromme Trust	Mr Barratt referred again to the Port Elizabeth Key Stakeholder Feedback Meeting on 12 April 2010 where the impressive number of trees that were to be saved was mentioned. He went on to say that initially there were four copies of the Draft and Final Scoping Reports in this immediate area, there is now one copy of the Draft EIA report. This can be accessed a maximum of 7 hours per week. This is inadequate for this community; St Francis Bay library is open for 2 hours – 3 days per week. The community is expected to review these reports. The CD copies are also not suitable as some of the reports are upside down.	Arcus GIBB noted Mr Barratts' comment regarding reduced distribution of the Draft EIA Report and asked ACER to have an additional copy delivered to the area.
47	The Facilitator	The facilitator asked if the meeting could agree to a time of 22h00 when the meeting should end. She asked them to bear in mind that further meetings could be arranged.	Mr Donnelly said that his understanding was that Ms Ball had said that she would consider another public meeting, she did not confirm that there would be one. Ms Ball said that regarding extra copies of the report, she had spoken to Mr Thorpe, she has a number of electronic copies available which she had offered to Mr Thorpe to distribute. If a further hard copy is required it can be arranged.
48	Ms Trudi Malan Spokesperson for St Francis Alliance	Ms Malan said that she had read the report in its entirety and it takes a great deal of time and takes a lot of research to be able to understand the report.	Ms Ball responded by saying that this is the round of meetings where the Draft EIR is explained in simple layman's language. They have gone around to many

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		According to her understanding of NEMA, the EIA consultant should take time and explain the report to the communities and this has not been done. As a point, she said that during the scoping meeting she had raised the issue of the access road, the answer she had received was that the access roads were not being investigated. There were people in the audience tonight who had never heard of the access roads until this meeting. This proves her theory that information is not getting back to the communities. Ms Malan then wanted to know why the Key Stakeholder Meeting was held in Port Elizabeth.	communities. Ms Ball invited all participants to the meeting at Sea Vista the next evening. This meeting will be held in English, Afrikaans and Xhosa. She explained that if they had been permitted to give the presentation, many of the questions would have been clarified. Ms Ball noted the comment. During the previous round of meetings the Key Stakeholder Meeting was held in Port Elizabeth and there were no complaints received. Ms Ball had asked ACER (Africa) to contact various groups to ascertain if they wanted a focus group meeting. Ms Shinga confirmed that various key stakeholder groups had been contacted. In some instances some groups preferred to attend public and key stakeholder meetings, which would help them establish the necessity of Focus Group Meetings. She also stated that Mr Hilton Thorpe was contacted in this regard.
49	The Facilitator	The facilitator asked for confirmation from Ms Ball that there will be follow up meetings, whether they are going to be public meetings or focus group meetings needs to be confirmed at the Key Stakeholder Workshop the next day. The facilitator then asked for confirmation that the meeting could	Ms Ball confirmed this.

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No	**Name**	**Comment**	**Response**
		close at 22h00, this was confirmed.	All participants agreed.
50	Mr Hilton Thorpe St Francis Bay Residents Association and St Francis Kromme Trust	Mr Thorpe wanted confirmation that the comment period would be extended.	Ms Ball said that originally 66 days was the comment period as there were a number of public holidays during the comment period. If there is a feeling that this is still too short, she asked that feedback be given to her. This is the first time in this round of meetings that additional time had been requested. There is still a further week of public meetings in Cape Town around the Duynefontein site. This will be considered.
51	Mr Koos Vermaak Resident	Mr Vermaak said that he had built his house at the end of 1970 and has lived in the area for 30 years. He is concerned about the nuclear power plant and he agrees with most of the objections and concerns that people have raised. He said he is also a physicist, he has a BSc degree in Chemistry, Physics and Mathematics and is a Master of Mathematics and a Master is Physics, specialising on the effect of radiation on human beings. I have also a PhD in Physics. He said that he only mentioned these so that it is understood that he is qualified to talk about some of the issues raised. He was astonished to read in the St Francis Bay Home Owners Association's website, a letter that someone had written about how Strontium-90 from the proposed power plant will grow over the beaches, will contaminate the beach and will cause cancer. The letter had also stated that Cesium would go to where cows are and they will eat the Cesium and this will contaminate the people that	The facilitator asked Mr Vermaak if he was referring to an alternative strategy to use to object to the power station. She asked him to explain which strategy he would suggest. The facilitator agreed and said the substance and validity of the information in the reports must support the findings.

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No	**Name**	**Comment**	**Response**
		drink the milk and will cause cancer. He thinks that it is very irresponsible to publish nonsense such as this. The question of health and contamination from a power plant has been settled years ago, it is not an issue any longer. This is an issue from some of the green peace people who get their information from the internet and they frighten people in believing that this is true. Mr Vermaak said that he feels that the strategy to prevent the plant being built in this area should be different because if you use the safety approach the experts will laugh at this. He said that regarding alternatives, such as solar energy and wind energy, these are not base line type of energy that can be used. If the sun does not shine, there is no electricity. If the wind does not blow there is no electricity so it cannot be used as a base line for the grid. It can make a contribution at peak times. World wide solar energy and wind energy has a basic contribution of less than 1% of world needs. He concluded by saying he is concerned, but the correct strategy must be used if they want to prevent the power station being constructed in this area. Mr Vermaak said that the scare tactics will not help	

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		their cause. He emphasised that he was not talking on behalf of anyone else. He feels that the strategy should be that this is a tourist area, there are beautiful beaches, the sand dunes, the rivers, that must be emphasised. If the health effect is used as a strategy, this is true for Port Elizabeth where there are thousands more people living. He said the second strategy that can be used is the construction of the roads, the transmission lines, the losses on the transmission lines and also if Coega is not suitable, it must be explained to the public why it is not suitable.	
52	Mr Ryan Donnelly For A Safe Tomorrow	Mr Donnelly said that he could appreciate what Mr Vermaak had said regarding the health issues. However, as an individual, a stakeholder and a farmer, he would like to see information that is easy to understand and written in layman's language. Mr Donnelly said that it is his understanding that there are radioactive emissions, and he would like to understand more about these. He requested that a study be undertaken on the effects of radioactive emissions and contamination of agricultural grounds. The reason he asked for this is due to the fact that he is a farmer in the area and the rain usually falls as a mist, with a southerly wind. His understanding from research he has done, that radioactive emissions are brought to the ground by rain. Therefore an inhalation dose graph, it is a different thing compared to a contamination figure, with respect to agricultural ground. He feels that	The facilitator said that she is aware that the Integrated Resources Plan which is due out in July this year and discussions about this plan will also take place later during the year, will create a large debate in the public domain. Ms Ball said that the agricultural specialist had built on the air quality specialist study findings as well as the limits set by the NNR and they have assessed the impact of radiation on agricultural products in the area and they have said that it has extremely low significance because it is highly unlikely that it will occur. Ms Ball explained that the agricultural specialist had a 16 km radius from the nuclear power station site. They examined all the major agricultural activities in the area. In this are 95% of the area comprises dairy farming with

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		this is not a health and safety issue to be passed on to the NNR, he is requesting a study to be undertaken on the effects of radioactive emissions contaminating agricultural ground. He then said that he attended an energy summit in 2007, this was not a debate, it was a dictatorship by Eskom and Government and FAST were allowed to make submissions. At that time there were many energy groups that were not invited which caused a problem. As far as a source of information, where the nation has sat down to discuss what actually the way forward is when it comes to energy, has never happened. There is a need for a national energy summit, involving all stakeholders, then there will be a source of information to bring to the public. Mr Donnelly asked how big does an agricultural facility need to be in order for it to be included in the report. Ms Ball had told him at a previous meeting, that his farm had not been included in the study because it is too small. Mr Donnelly said that he wanted to flag that the Thyspunt site has many dams and the river catchment area to the north, it is this area that concerns him. This area will be affected by the southerly winds and the misty rain.	5% being a sheep farm and the odd smattering of other types of farming. Mr Heydenrych showed a slide which indicated what the NNR's requirements are in terms of the allowable limits of radiation. According to the air quality specialist, and he quoted from the particular government notice in terms of the NNR legislation, there is 2 limits of 1 000 microSieverts and 250 microSieverts. If the model is examined, in terms of what the radiation would be from the power station, there is a range from 0.02 microSieverts which would be the furthest from the power station to 0.5 which would be closest to the power station. The conclusion in terms of how that compares to legal limits is that it would be about .5% of the dose concentrate and about 4.5% and 1% of the annual effective dose limit. These 1,000 and 250 microSieverts levels are conservative levels with the effective dose being far below these levels. Ms Ball added that there is also background radiation and there is radiation in most foodstuffs. In terms of the agricultural study, they did assess the area to the north of the power station site.
53	Ms Paddy Oosthuizen St Francis Bay Residents Association	Ms Oosthuizen asked how seriously are comments taken. She recalls that a long time ago Mr Thorpe sent in a submission in which he queried that old	Ms Ball said that there had been a written response sent to Mr Thorpe, which addressed in comments point by point. The letter is available on the website.

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		stats had been used and he requested that a new census be taken during December. They have never had a response to this suggestion.	Regarding looking at the census data, a demographic study was undertaken by the specialist which looked more closely at the population groups but no full census was undertaken.
54	Ms Debbie Nicholson Debbie Nicholson Properties and Cape St Francis Civics	Ms Nicholson had a statement to make. She acknowledged that the consultants have a difficult job as no matter what site is chosen, it is an emotive issue and you are dealing with the livelihoods of thousands of people. The only thing that could have won the public over would have been the sheer evidence of expertise and the consultant's handle on the situation. She was not sure if everyone felt as she did, but there is nothing that has proved to the public that the consultants have the situation under control. This to the public is worrying. Her first question was when the consultants were given five sites to investigate, was it possible for them to go back and say none of these sites are suitable they must all be discarded. Was it the case of having to find the best of a bad bunch, she asked. Her second question concerned methodology. She asked if the consultants had used a grid whereby sites were investigated and when the figure 6 on risk factor was reached in any particular field, that this site could be discarded. Ms Nicholson then asked if there are any routine	Ms Ball said they were put on the back foot as they had a professional presentation and they were not permitted to deliver this. Mistakes in the report will be corrected. Ms Ball requested Ms Nicholson not to take the proceedings of the meeting as a vote of no confidence. Ms Ball explained that when they were given the five sites, we could have gone back to Eskom and said that none are suitable. During the Scoping Phase, 2 sites had been discarded. Arcus GIBB to respond. Ms Ball said that there is a slide in the presentation

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		emissions of radionuclides from Koeberg.	regarding Strontium and Cesium levels all around the world. The results of the entire specialist studies both from a marine perspective and the impact of radionuclides on the marine environment, the agricultural environment, but we were not permitted to present these. They are up on the websites.
55	Mrs Sandra Hardie St Francis Conservancy	She addressed a remark to Mr Vermaak. She feels that more experts should have come forward and educated the public and notified the public. The fact that half of this audience did not know anything about the road access is horrendous. People are concerned about Strontium and Cesium and you cannot say they are wrong for looking up on the internet to try and find out more about them.	Ms Ball responded by saying that Eskom has undertaken some public awareness campaigns.
56	Sean (Did not sign the attendance register)	Sean requested a meeting where people or representatives can ask questions and specialists attend to respond to the questions. This request is because there has been very limited information responded to at the meeting. The facilitator said this had been raised before and this would indeed be a good idea so that people could gain a better understanding about the process. This should be held in laymen's language.	Arcus GIBB to consider. **A Key Focus Meeting has been arranged where specialists will share more detail on their reports.**
57	The Facilitator	The facilitator said there are many issues that still need to be unpacked and still a high level of discomfort in the audience about certain issues. There are debates that need to be held around certain topics in the specialist reports. She went on to say that agreement had been	

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No	**Name**	**Comment**	**Response**
		reached to close the meeting at 22h00 with the understanding that there will be further meetings. Ms Ball will inform you how and when these will take place. Another point for clarification is which specialists should attend these further meetings to interact with the public. She asked everyone to submit any additional issues in writing to ACER (Africa). She then thanked everyone for their constructive engagement and for their attendance.	

APPENDIX 2: PRESENTATION OF DRAFT EIA REPORT

The size of the presentation is 1,605KB

All presentations can either be downloaded from the following websites:

- Eskom's website: www.eskom.co.za/eia under the "Nuclear 1-Generation" link
- Arcus GIBB website: http://projects.gibb.co.za/ under the "Nuclear 1 EIA" link

or can be requested from ACER (Africa) at 086 010 4958 or by notifying Bongi Shinga at bongi.shinga@acerafrica.co.za or nuclear1@acerafrica.co.za

APPENDIX 3: ATTENDANCE LISTS

Surname	First Names	Title	Co/Org	Oyster Bay Meeting 13 Apr 10	Humansdorp Meeting 14 Apr 10	St Francis Meeting 15 Apr 10
Anderson	Duncan & Yvonne	Prof & Mrs				Attended
Anderson	Caroline	Mrs	St Francis College			Attended
Andrews	Pamela	Miss				Attended
Andrews	Rob & Ann	Mr & Mrs	i-Lollo Lodge			Attended
Arderne	Richard	Mr & Mrs	Pam Golding Properties			Attended
Ball	Jaana-Maria	Ms	ARCUS GIBB	Attended	Attended	Attended
Barratt	Christopher & Valda	Mr & Mrs				Attended
Bartlett	Colin	Mr				Attended
Beckmann	Roderick	Mr	Eskom		Attended	
Bendeman	Ernest	Mr	Billabong SA			Attended
Bezuidenhout	Adriaann	Mr				Attended
Blaeser	Beryl	Ms	Eskom		Attended	Attended
Bornman	Nick & Una	Mr & Mrs		Attended		
Bowler	Karin	Mrs	Karin Bowler Enterprises		Attended	
Brown	James	Mr				Attended
Campbell	Drummond & Sandie	Mr & Mrs				Attended
Casciani	Pietro & Daniela	Mr & Mrs				Attended
Cawood	J	Dr	St Francis Bay Disaster Management Team			Attended
Cook	Derek	Mr	Dunes Guesthouse			Attended
Cooper	John	Mr	Chas Everitt			Attended
Copeland	Peter	Mr				Attended
Cowling	Richard	Prof				Attended
Cowling	Shirley	Dr	Friends of the St Francis Nature Reserve			Attended
Culinan	Cormac	Mr	Cullinan & Associates Inc			Attended

Surname	First Names	Title	Co/Org	Oyster Bay Meeting 13 Apr 10	Humansdorp Meeting 14 Apr 10	St Francis Meeting 15 Apr 10
Dale	Jenny	Mrs				Attended
Day	John	Mr	J Bay Boardriders			Attended
de Beer	Henni	Mr	Dept of Economic Development & Env Affairs		Attended	
de Beer	Maryna	Ms				Attended
de Beer	GA	Mr				Attended
de Jager	Wimpie	Mnr		Attended		
de Jager	Tracy	Miss	Chas Everitt			Attended
de Villiers	Carin	Ms	Eskom		Attended	
Devine	Malcolm	Mr & Mrs	Papillon Organics			Attended
Donnelly	Ryan James	Mr	For A Safe Tomorrow (F. A. S. T.)			Attended
du Toit	Kobus	Mr	Oysterbaai Rate Payers Association	Attended		
du Toit	Conrad	Mr			Attended	
Dyabaza	Jongi	Mr	Eskom Koeberg NPS		Attended	Attended
Elliott	John	Mr				Attended
Elton	Edmund & Bridget	Mr & Mrs				Attended
Errington	Colleen	Mrs				Attended
Fuchs	W	Mr & Mrs				Attended
Fynn	Ian & Jean	Mr & Mrs	Marydale Properties			Attended
Gerber	Rupert	Mnr			Attended	
Gouws	Pieter	Mr				Attended
Greeff	Gert	Mr	Eskom Nuclear Sites	Attended	Attended	Attended
Grimm	Wolfgang	Mr				Attended
Hardie	George	Mr				Attended
Hardie	Sandra	Mrs	St Francis Conservancy			Attended
Hawinkels	Karen	Mrs				Attended
Hemsley	Robert	Mr				Attended
Hemsley	Carol	Mrs				Attended

Surname	First Names	Title	Co/Org	Oyster Bay Meeting 13 Apr 10	Humansdorp Meeting 14 Apr 10	St Francis Meeting 15 Apr 10
Howlett	Justin & Candice	Drs				Attended
Hutchinson	David Innes John	Mr	Inkwise			Attended
Hutchinson	Martha-Maria	Mrs	St Francis Conservancy			Attended
Immelman	Justin	Mr				Attended
Jacobson Becker	Frances	Ms				Attended
Jeannes	Deon	Mr	Eskom	Attended		
Jooste	Paul	Mnr	Oyster Bay RPA	Attended		
Jooste-Coetsee	Donna	Ms				Attended
Jordaan	Tania	Mrs	The Window Secret			Attended
Ker-Fox	Dorothy	Ms				Attended
Kettledas	Charmaine	Ms	ANC	Attended		
Koch	AP	Mr				Attended
Koen	Krappie	Mnr		Attended		
Kraak	Cheron	Ms	Country Feeling			Attended
Krause	Martin	Mr	Eskom		Attended	Attended
Kuhl	Alison	Mrs	Supertubes Surfing Foundation			Attended
Lamont	Sydney	Mr	Sea Vista Forum			Attended
Lategan	Tanya	Ms	Supertubes Surfing Foundation			Attended
Le Roux	John	Mr	FOSTER			Attended
Leask	Kevin	Mr	Eskom	Attended	Attended	Attended
Leen	Petrus	Mr	Sea Vista Forum			Attended
Lindsay	Michael Bruce	Mr				Attended
Logie	Caryl	Mrs	Fourcade Botanical Group			Attended
Lubbersen	George	Mr				Attended
Mackenzie	Donald	Dr & Mrs				Attended
Mahomed-Weideman	Leila	Mrs	Mainstream		Attended	
Malaka	Samson	Mr	Eskom			Attended

Surname	First Names	Title	Co/Org	Oyster Bay Meeting 13 Apr 10	Humansdorp Meeting 14 Apr 10	St Francis Meeting 15 Apr 10
Malan	Trudi	Mrs	Ajubatus Marine & Wildlife Rescue			Attended
Malgas	Alwyn	Mnr	Sea Vista Forum			Attended
Maskew	Peter & Sheryl	Mr & Mrs				Attended
Maubec	Mel & Sheila	Mr & Mrs				Attended
Mayoni	Zolani Julius	Mr	ANC	Attended		
Mc Hugh	Peter	Mr				Attended
Mortimer	Bev	Ms	St Francis Chronicle Newspaper			Attended
Ndala	Lorraine	Ms	Eskom		Attended	Attended
Ndamase	Zandisile	Ms	ANCYL	Attended		
Neate	Mary-Lou	Mrs	Chas Everitt			Attended
Nicholson	Deborah	Mrs	Debbie Nicholson Properties			Attended
Niven	Louise	Ms				Attended
Nixon	Roger & Laura	Mr & Mrs		Attended		
Norman	Jan	Mr	Koeberg	Attended	Attended	Attended
Oosthuizen	Joe	Mr	Chem-Dry SA			Attended
Oosthuizen	Paddy	Ms	St Francis Bay Residents Association			Attended
Pagden	Lindy	Mrs				Attended
Payne	Shaun	Mr				Attended
Peacock	Roland	Mr				Attended
Petrie	Leon	Mr	Grinaker LTA			Attended
Pezarro	Paul	Mr				Attended
Ponzo	Bruno	Mr				Attended
Pringle	Lizette	Mrs				Attended
Rassie	James	Mr		Attended		
Rautenbach	Peter	Mr	Dream Supreme CC			Attended
Rautenbach	Elisabeth	Mrs	St Francis Conservancy			Attended
Richardson	George Roger	Mr				Attended

Surname	First Names	Title	Co/Org	Oyster Bay Meeting 13 Apr 10	Humansdorp Meeting 14 Apr 10	St Francis Meeting 15 Apr 10
Richardson	Michael	Mr				Attended
Roberts	Geoff	Mr				Attended
Roche	Robin & Norma	Mr & Mrs				Attended
Rogers		Mr/s				Attended
Royal	Renee	Mrs				Attended
Royal	John	Mr				Attended
Sadler	A	Mr & Mrs				Attended
Searle	Francis	Mr			Attended	
Searle	Francis	Mr				Attended
Sevenster	Kotie	Mr	Calibre Security	Attended		
Singleton	Tyrone	Mr	Eskom Generation		Attended	
Smith	Tom	Mr	Eskom		Attended	
Spence	David	Mr				Attended
Stander	MD	Mnr		Attended		
Stott	Tony	Mr	Eskom Generation	Attended	Attended	Attended
Strydom	Johan	Mnr		Attended		
Swarts	Nicoleen	Ms	Mainstream		Attended	
Terblanche	OJ	Mnr		Attended		
Theron	Mervin	Mr	Eskom	Attended	Attended	Attended
Thorpe	Hilton & Julia	Mr & Mrs	Waterways B & B, St Francis Kromme Trust			Attended
Tilders	Helmie	Mr	FOSTER			Attended
Tudhope	Jill	Mrs				Attended
Tyala	Petrus	Mr		Attended		
Vlok	Len	Mr	Denron		Attended	
Welman	Esme Neva	Mrs				Attended
West	David Michael	Mr	Eskom	Attended	Attended	Attended
Yoell	Antony & Mary	Mr & Mrs				Attended

Surname	First Names	Title	Co/Org	Oyster Bay Meeting 13 Apr 10	Humansdorp Meeting 14 Apr 10	St Francis Meeting 15 Apr 10
Young	RB	Mr & Mrs				Attended

CLOSING REMARKS – JOHANNESBURG, GAUTENG HEARINGS

P M Makwana, Interim Chairman & Chief Executive, Eskom

GALLAGHER ESTATE, 22 JANUARY 2010

Mmago rena Mohlomphegi Mohumagadi Cecilia Khuzwayo Modulasetulo wa Lekgotla Phethiši la NERSA, Mohlomphegi Morena Smunda Mokoena Molaodi Kakaretso e lego Gomangkanna wa NERSA, Mohlomphegi Morena Thembani Bukula Molaodi yo a okametšego thulaganyo ye ya tša mohlakase, maloko a Tshepedišo Phethiši ya NERSA yeo e lebanego le go sekaseka kgopelo ya rena re le ba ga ESKOM, mabapi le kgopelo ya MYPD2 ya tlhatlošo ya Theko ya Motlakasi.

Bahlomphegi, Baetapele le Maapara Nkwe ka moka ao a lego fa, re sa bowa gape re le tamiša. Mohlang wola re kgaogana kua gaVanriebeck motse Kapa, ke ile ka re loku ha ne re timpyana, ha ne to bona hi mitjila loku e ku pulupulu. The Tsonga people of Limpopo, Chairperson have brokered wisdom to their fellow Africans through their remarkable observation of human behaviour.

When a dog is happy it tends to wiggle its tail. When a dog is unhappy it sticks its tail between its legs.

Se manje Chairperson ntjila ya hina eku pulupulu. He tsakili, he tsake ngopfu! Hi tele nkateko hi burhangeri ba ku tsatseka ka wena Chairperson, *na ndlela ya ku tsatseka le imiendlele yona le swaku mi tirisana kahle na hina. Ha nkhentsa, hi tele ko kateka. Hi ku kwa ba Mmaane, ba Manana Etel Teljeur, Kanimambo Manana! Swibutiso swa n'wina ha ko ri swibutiso swa matimba sbywa ku tika*! Really tough and challenging questions indeed Manana Teljeur, *mi hi babisili, hai le swa ku tlanga nie, mara ha nkhensa. Swibutiso sbywa ngwina sbywa ko tika, sbywi hi nyike matimba, sbwi e entla le swako hina kwa Eskom hi ba na buhlarhi*. Die prosses warmee ons besig is kan net ten beste belange van Eskom en die land wees deur middel van sulke belangrike vrae. Want as ons nie aantwoorde soek vir sulke moeilike vrae nie dan raak 'n mens mos nie oorgerus nie. Ons sê vir u hartlik baie dankie vir u bydrae, daarmee kan ons hoë standaarde handhaaf and groei.

Mr Smunda Mokoena, Chief Executive Officer at NERSA, thank you

very much, Sir, for the constructive role you too played during this journey. *Ke tseba boMokoena ba Basotho, boKwena ya mafula' thekwana*. However, there are other *Mokoenas* that I also know from within my extended family who speak isiNdebele *sakwaMahlangu*, *bathi masekunje, bathi ….regge reg nina ba kwaNERSA ni ragela kuhle lo mragelo wo ku laula inkhgambiso ye ntengo yogesi. Sithokoze stereke mfo ka Mokoena*.

Dr Rod Crompton, ever so diligent, ever so thorough, we thank you for some of your difficult questions. It is human nature to push-back as I did on one occasion, please accept it from whence it came. Most importantly, please accept that we did appreciate where you were coming from and accepted the tough questions as best as you intended in that spirit of diligence and technical depth.

Mr Bukula, the university I did my undergraduate studies at, lies juxtaposed across the Ongoye mountains on the banks of the Mhlathuze and Mhlathuzana rivers. They have the University's motto as *dilligentia cresco* – through diligence we grow. Such is the overall work ethic I experienced under your leadership during these hearings. You are to be commended on the professional manner in which you managed this process. Your sense of humour is also infectious, in spite of dealing with tough matters; we had lots of fun and laughter in the hearings process.

To the support staff at NERSA, thank you! We have been through the depth and breadth of the provincial capital towns of our country with you. You provided us with brilliant support and hospitality. Please, may you have an added spring in your steps, knowing that your efforts did not go unnoticed.

Rre Modulasetilo le maloko a NERSA panel, re le eletsa masego, ka gore le tshotse phaga ka dingana. Rere e ka Modimo o ka le fa botlhale le manontlhotlho tota le botswerere botlhe bo kgonagalang gore tiro e le lebaneng le yona le falole sentle heela mo go yone, e masisi tota, mme nna ke a le tshepa gore le digatlamela masisi e le tota. Jaanong nte ke retologe ke lebise dintlha di se kae go araba dibui tse farologaneng tse ntseng di tla di beya mahoko mabapi le kgang ena ya theko le tlhwatlhwa e siyameng ya motlakase.

Chairperson, Eskom's MYPD2 application is good for SA. Let me, at the outset of this closing statement, also declare that as Eskom we hope that henceforth, none shall dare stand on a podium and proclaim that Eskom never shouted loud enough about the real and challenging picture of security of electricity supply in South Africa.

The tariff application got South Africans to have the right conversations about electricity. Chairperson, the conversations we have had throughout these hearings will prove to be time well spent if they are followed by correct choices and action on the part of all South Africans.

We hope we got South Africans to think on an on-going basis about appropriate energy mixtures for their homes, factories, mines and manufacturing plants. We have a shared appreciation that the root cause of many problems within the electricity sector is that the cost of generating electricity is incorrect. This is the fundamental correction that has to be made as we transform the sector.

If we break down the tariff into its substantial parts we see a lot of commonality among the presentations.

There has been a call for greater engagement and broader dialogue. SALGA, COSATU and organised business punctuated this call. This is a call we welcome in line with our own call for a national compact on electricity supply. We welcome this with open arms and will do our fare share in ensuring that this call is responded to.

There's been mixed reactions to the 30% or more equity stake in Kusile where even SALGA, organised business and analysts stretched this idea to include private sector participation in other existing power stations. Naturally, COSATU advanced equally compelling opposing arguments in this regard. We advise all key stakeholders to make formal representation to the Eskom Holdings Board and to the shareholder in this regard,

Dialogue to be meaningful requires the absence of dogma from all players across the board. There's definite acknowledgment that our primary energy and operation costs must be recovered. We acknowledge that there are on-going opportunities to seek and achieve efficiencies and savings. There's a real need to have funds available to either replace our current asset base at the end of its life or replace such with other renewable energies. There has also been acknowledgement that the costs of these technologies are more expensive currently.

Regarding yielding returns on assets employed, there is appreciation that

a) current funding obligations (loans and interest) need to be repaid.

(b) private equity holders would require meaningful returns and upside on economic profit or EBIDTA.

We can debate all of these at length but there is no doubt that in the short term of the current MYPD2 period, Eskom's solution is the only viable one.

This MYPD2 application, provides a platform for:

- Moving towards a cleaner future as it starts to incorporate the renewable supply options as outlined in the first draft of the IRP;
- Ensuring security of supply through the funding for the required short- and medium-term capacity expansion programme in a balanced and sustainable manner;
- Moving towards cost reflective tariffs that will open up opportunities for the establishment of IPPs and the sustainability of the industry; and
- Supporting the country drive for energy efficiency through DSM programmes.

Chairperson it was evident to us that the quality of assumptions of most presentations could have been more robust. We will look for opportunities to empower stakeholders in this regard. Stakeholders also have a personal duty to visit the NERSA and Eskom's websites to really understand the rules that define the business of electricity,

Finally Chairperson, the impact of tariff increases is not a one size fit all. Its impact is of a different magnitude to different sectors. Gold Fields is also right: if Eskom fails South Africa fails.

These are key tenets that I think we should all take away from the NERSA hearings. We have more common ground than some stakeholders choose to acknowledge or recognise.

S'hlalo, *eEskom siye sithi xa sithetha sithethe ngento ebizwa iCompany Coat of Arms. LeI Company Coat of Arms esithetha ngayo, mhlekazi ithetha intokubana abantu bathi xa sebejongene ne ngxaki baphambanise izandla*.

In many respects, we have seen the Company Coat of Arms syndrome at play here.

What we heard from some of the presenters is that everybody points elsewhere other than to him or herself for personal and other forms of accountability for providing solutions to our national challenge of securing continuity of supply of electricity.

A few people point at everyone else and Eskom to change rather than to say: as matters stand, what can I do to help make things better? What can I contribute to this challenge, which we all agree is about what needs to be done to fund a sustainable funding model that will enable continuous supply of the energy and electricity needs of our country?

Chairperson, it starts with everyone getting on their bicycles and heading for Megawatt Park, *batle ba tlo botsa hore, beso ha Eskom le ha seemo se le tjhenana ho etsiwa jwang? Le rona Megawatt Park kwana re fehelwa re khutsitse re phehelletse ntho e le nngoe ya bohlokwa hore na re ka etsa jwang hore Sechaba sa Afrika Borwa se fumane motlakase o lekaneng ka seelo se tshwanetseng le bona boleng bo lekaneng*. It is in that spirit Chairperson, that we are on our bicycles on a daily basis, and are also foot soldiers on the ground, engaging communities and customers on a regular basis.

Chair, Eskom Holdings Limited is mandated by the South African Government to ensure the provision of reliable and affordable power to South Africa. Electricity cannot be stored and must be used as it is generated. Therefore, electricity must be generated in accordance with supply-demand requirements. Eskom's core business is in the generation, transmission (transport), trading and retail of electricity. In terms of the energy policy of South Africa "energy is the life-blood of development". Eskom currently generates approximately 95% of the electricity used in South Africa.

Chairperson, I stand here on behalf of 33 000 South Africans who call Eskom their place of work. On a ratio of 1:4, I am also speaking for the roughly 120 000 members of their families and members of their households. They rise every morning before the crack of dawn with one objective in mind, to keep the lights on for South Africa and its people.

Chairperson, this after we stand here before you ever so tall because we stand as we do on the shoulders of giants. Chairperson, one of the best document source of institutional memory is a publication called the Symphony of Power. In there is the remarkable story of 87 years of the history of Eskom and industrialisation in South Africa. The development of Eskom since 1923 owes its success to visionaries, whose passion

and leadership as truly remarkable South Africans are outstanding. Among these is Dr Hendrik van der Bijl. Dr van der Bijl was the founder chairman of Eskom, from 1923 to 1948, and was instrumental in shaping the industrial development of South Africa.

In 1948, Dr Hendrik van der Bijl wrote the following words in a foreword to a book celebrating the first 25 years of Eskom: *"…There lies before the Electricity Supply Commission a great task and great opportunity. It will be our endeavour to play our part not as those who follow, where others lead, but as pioneers, to foresee the needs of a country fast developing, and by wise anticipation be ever ready to provide power wherever it may be required…".*

Chairperson we at Eskom have a spring in our step every morning in the knowledge that we operate a world-class operation. That we are a learning organisation; that like our pioneering founding fathers, we constantly seek to learn and do better, that we have national and international networks that respect us as engineers, scientist, technologists, apprentices, technicians and above all, world-class managers.

Chairperson, our staff have a spring in their step knowing that in a landscape of world energy utilities; that provide energy or electricity among 200 nation states, Eskom is the 10th largest electricity utility in the world. The first nine utilities ahead of Eskom are EDF (France), ENEL (Italy), GDF SUEZ (France), KEPCO (South Korea), Tokyo Electric (Japan), EON (Germany), ENDESA (Spain), RWE (Germany) and AES (US). The build programme that we are talking about is the 5th largest build programme in the world. The top four are Yangtze Power (China - 19 000MW), China Power Investment Corporation (China - 19 000MW), NTPC (India - 12 000MW), Datang Power (China - 12 000MW) by the end of the MYPD2 cycle, the build programme will have created 40 000 construction jobs and will indirectly and positively impact the lives of 160 000 South Africans.

Chairperson, our capital expansion programme constitutes a major economic stimulus. Consider that the Medupi project alone is four times bigger than the Gautrain project and even bigger than the five-year capital spend on all rail, port and pipeline upgrades in South Africa.

As matters currently stand, the Medupi project in Lephalale is set to create 8 000 jobs directly at the peak of construction and up to 1 000 jobs in ultimately running the station. Over and above this, the town of Lephalale is already growing exponentially in terms of housing (1 850 needed), infrastructure (services and education), commerce (increase in guest houses and hotels, catering for workforce), and much more.

Our staff have a spring in their step every day; on a bright and sunny day, on cold winter mornings and nights; they brave the cold of our frost and soldier on keeping the lights on. Chairperson, that which they have in common in shared inspiration are the noble goals of service, serving a cause bigger than themselves; and most significantly, making a difference in the daily lives of their fellow South Africans. They are an embodiment of the South African way of life.

They are my unsung heroes and heroines. Chairperson, fellow South Africans, I challenge you to make them your heroes and heroines too. They are guardians of our modern civilisation; they are custodians of our national interests.

We thank the Energy Intensive Users Group (EIUG) as represented by Mr Ian Langridge. We would like to commend the EIUG on the positive leadership role they have played in the discussions to date on the security of supply and the cost of supply in our country.

We welcome the positive pressure that the EIUG is placing on us for improved operational efficiencies. We are pleased that they have noted the results of our current operational cost cuts to date. Members of the EIUG and Business Unity South Africa (BUSA) should equally emulate or improve on this good trend and similarly engage on operational improvement plans to ensure that the fundamental competitiveness of the South African industry is changed. Big energy users and big business should help us build a future less reliant on unrealistically priced input costs such as the current price of electricity.

In addition, we agree with the EIUG that two key challenges facing us in the near future is the creation of a conducive environment for public private participation in the electricity sector and a step change in the management of demand side management. We look forward to continuing our regular engagements with the EIUG to drive these two challenges to conclusion.

Eskom values the long-standing constructive relationship with the EIUG and appreciates the recognition given to efforts by Eskom to improve business efficiency and operations. Trade-offs between the competing priorities of job creation, energy security and electricity price increase mitigation need to be made as the EIUG has indicated.

The need for Independent Power Producers (IPPs) within the framework of a finalised Integrated Resource Plan (IRP) is fully supported. Over the past five years, approximately R1 billion has been spent by Eskom on Demand Side Management (DSM) projects which have been implemented with the support of industrial customers. We

will continue to identify and implement additional DSM projects with EIUG members.

From COSATU thank you, Dumisani Dakile, Faku, for the patriotic and responsible manner in which you articulated COSATU's position this morning. It is in line with the spirit of partnership we reconfirmed and recommitted to at NEDLAC on Friday 15 January 2010. *Faku,* it is regrettable that you experience the opportunistic acts that you site of employers giving notices of retrenchments purporting to do so due to electricity tariff increases. Herein lies the problem that we should not allow those that espouse the worst of employment practices to inform our worldview or paradigm when we now have to cast our vision to the future in search of long lasting electricity supply solutions.

Your input this morning Mr Dakile, m'takaFaku, Nyawuza made me reflect on a critical mindset shift I believe South African business boardrooms need to reflect upon. This is the difference in mindset between being competitive and being pioneering.

A competitive mindset is useful but limited. It is best understood when one observes people on a treadmill at the gym. You will observe individuals running on the same spot and sweating but not moving anywhere. A pioneering mindset is different in that it is about a bold quest for a better way.

A quest to seek and create new rules of play, to discover new frontiers rather than merely raising the bar. Pioneers innovate in a manner that creates new offerings, markets and often new industries. The times we are in require more pioneering leaders rather than competitors, because Chairperson, one could be the best of a worst bunch in that mindset and still be deemed competitive.

As we respond to the input from BUSA as articulated by Mr Jerry Vilakazi, Mphephethwa! We appeal for this pioneering mindset and leadership from BUSA and its members. Mphephethwa, Eskom has been blamed for many things, as it is a hobby horse to do so.

However, it is rather rich for BUSA to suggest that DSM initiatives emanating out of the unfortunate 2008 load-shedding, precipitated South Africa's recession.

The recession we are grappling with and hopefully coming out of, must be reflected upon in earnest and in its proper global context. It is also a pity that BUSA missed our opening presentation where we demonstrated that a mere 1 500MW out of 43 500 MW come from energy imported out of Cahora Bassa.

This and many incorrect assumptions in the BUSA presentation point to an urgent need for information exchange between BUSA and Eskom. Leadership is impossible and compromised if it is driven without the benefit of accurate facts and data. Mphephethwa let's meet as soon as possible regarding those monies in private hands that you mentioned. Let's also meet urgently on Demand Side Management, especially to discuss how BUSA members can contribute tangibly and meaningfully their share of the national energy accord target of 12%.

Eskom's current application calls for about a 5% (just over 8TWh) reduction in energy usage through DSM in the next 5 years. Business through the energy accord has signed up to a 12% savings by 2012. Research conducted in 2008 pointed to huge potential to save between 8% and 15% overall based on appropriate investment in technology and behaviour change.

As stated in our opening presentation, the more bankable solutions we are provided with, the better for Eskom and our country.

Eskom wishes to extend an invitation to BUSA to have a bilateral exchange on the operational business framework and assumptions within which Eskom operates.

We have highlighted in our application the need for a national dialogue on our energy future. This involves making choices as a country regarding the capacity needs for the future, the capacity mix, who would build the required capacity, what it would cost and how it would be funded. These policy choices will culminate in the long-term Integrated Resource Plan to be developed and published by the Minister of Energy.

Our regulatory environment is underpinned by the interplay between policy, legislation and regulation. Due to our current realities, Eskom believes that it is prudent to take steps to set the foundation for our future whilst the critical policy decisions are being addressed. Of course, this is only possible if flexibility is retained to empower the future without pre-empting that future.

This is what we have done in our MYPD 2 application which we see as a stepping stone towards the achievement of these national long-term goals. We will be running out of capacity in the near future (as early as 2011 onwards) and there is therefore a need to proceed with the current Eskom build programme. This includes the Medupi, Kusile and Ingula projects and to return the mothballed power stations to service, and introduce IPPs in terms of the Medium Term Power Purchase Programme.

In this regard it should be pointed out that there is by and large alignment with the published IRP, and hence government policy. Eskom has suggested certain variations to the published IRP to achieve a smoother price path – and this is subject to approval by government.

Beyond these projects additional capacity is still required for the country and these choices will be informed by the country choices to be made and the final IRP. Decisions relating to nuclear capacity, the next power station and whether Eskom or an IPP would build that power station are, for example, open to further dialogue - led by government as policy maker.

As we undertook at NEDLAC last week Friday, let me state here this afternoon that Eskom is committed to building and nurturing this partnership with Organised Labour, Organised Business, Government and formations of Civil Society within NEDLAC.

We thank Earthlife Africa's challenging insights and the warmth of human spirit through the voice of Tristen Taylor. We plan to engage in a roundtable of discussions with all Non-Profit Organisations and or NGOs engaged with green and renewable energy matters.

In that roundtable discussion, Mr Tristen, we will also make sure to factor in an in-depth presentation of Embedded Derivatives. I am delighted that as stated in your presentation that in relation to the MYPD2 tariff application you confirm in one of your slides that the electricity tariffs need to be aligned with the cost of producing electricity.

I was at Copenhagen on behalf of Eskom and as part of the South African delegation. Eskom is a member of long and good standing of the World Business Council on Sustainable Development.

I have found that when we did share our plans on renewable energy people were amazed at how far advanced our thinking is in terms of renewable energy. Our plans, moving forward, include an extensive roll-out of a balanced energy mix.

Eskom's business is fundamentally built on the 3 pillars of sustainability. In this regard we aim to maximise the economic, environmental and social returns. Our annual report comprehensively addresses our performance in all of these areas (see www.eskom.co.za for details).

Eskom is seen as a key enabler of economic development. In addition to our requirement for financial sustainability we have a suite of

programmes aimed at maximising the benefits of our activities to the South African economy. This includes economic empowerment through procurement and leverage of capital projects, as well as programmes to localise manufacturing and build domestic industries and create jobs.

Eskom is an integral part of South African society. We have numerous programmes in place that invest in social development. These include projects run under the auspices of the Eskom Development Foundation. These focus on the empowerment of women and children in rural communities. In addition, Eskom has in the last week been recognised by the Department of Public Works for creating tens of thousands of jobs under the expanded public works programme. We also have a massive skills development programme and schools initiatives such as the Schools Environment programme and the Eskom Expo for Young Scientists.

Operationally Eskom has established a comprehensive environmental management programme which is aimed at continual improvement in performance over the lifecycle of our investments. This ranges from the inclusion of environmental factors in all planning processes to the quantification of environmental costs, including the internalisation of key externalities, in operations as well as investment decision-making.

We have a comprehensive climate change strategy in place, which is aimed at reducing our relative emissions until 2025 and thereafter reducing absolute emissions. This is in line with the South African government's long-term mitigation strategies which have been exceptionally well received by the international community and which were the basis of the country's undertakings made in December at the Copenhagen climate change negotiations.

Specific initiatives include:-

Energy efficiency activities

Over and above the external Demand Side Management Programme our energy efficiency initiatives are aimed at assisting customers to reduce their electricity demand. Eskom has an internal efficiency programme which will reduce our energy usage by 15% by 2015. In addition we sponsor the *eta* Energy Efficiency Awards aimed at recognising excellence in energy efficiency in different sectors.

Renewable Energy activities

These form part of the DSM programme. We are currently incentivising the uptake of solar water heating nationally. As far as the supply side is

concerned, Eskom is actively developing renewable energy investments. These include the 100MW Sere Wind Project and a 100MW solar thermal project in the Northern Cape. This project is seen as a seed project that will unlock the enormous solar potential in the country and, once piloted, we envisage the construction of thousands of MW capacity over the next 20 years – with funding support from mechanisms such as the Clean Technology Fund.

The NERSA Renewable Energy Feed-in Tariff (REFIT) has been supported by Eskom for several years. As such, it is welcomed as a key tool to facilitate the development development of renewable energy projects by third party.

In addition to these initiatives, Eskom is evaluating the potential for further development of the hydro power in Southern African Development Community (SADC) as well as related support infrastructure.

Research Development and Demonstration

Eskom is a national leader in energy sector reseach, development and demonstration. Its research portfolio includes studies on the application of technologies such as advanced energy efficiency, smart grids, ocean energy, bioenergy and carbon capture and storage.

Wind energy was successfully piloted by Eskom in 2002 and current pilots underway include Underground Coal Gasification - potentially the lowest cost and cleanest coal technology available globally. The Utility Load Manager is an initiative in the area of advanced metering aimed at empowering domestic consumers to take charge and control their demand. Some of the key drivers of this research include improving company efficiency and productivity, reducing emissions and resource use, increasing security of supply and maximising local content and employment in the region.

Lower Carbon Energy

Over and above the renewable projects I have just mentioned, we have plans in place for the roll out of advanced clean coal technologies and nuclear energy. The current coal plants under construction use supercritical technology which increases efficiency while reducing emissions. In addition, dry cooling is being used which reduces water consumption.

Planning and decision-making processes

In the realm of planning and decision-making processes, Eskom has a comprehensive multi-criteria decision-making process in place. This process is aligned with national policy, legislation and regulations. It ensures that investments are assessed on the basis of full life-cycle costs – including externalities – and taking into account the economic, social and environmental aspects of all investments. This is also applied in the very early stages of planning to ensure that capacity decisions are able to maximise returns to the economy, society and the environment.

Chairperson, we hope that we have set the record straight in terms of the broader Eskom universe. In the next three years we face clear and real risks of continuity of supply, our opening presentation was therefore limited to the task at hand – providing clarity regarding the tariff application within the parameters of the MYPD2 cycle.

Chairperson, I am a South African first before I am anything else. Eskom is a 100% South African company creating value for South Africa. At Copenhagen developing nations also brought the matter of a sustainable future and renewable energy to the fore. When we speak about renewable energy we must also do so in the proper developmental context of our country.

It will take four to seven years for any competitor to come into this market and establish a base load power station that can meaningfully generate and transmit at least 3 000MW. The entire Cape's electricity or energy requirement (Eastern Cape, Western Cape, including Namibia) is approximately 5 000MW. The largest wind turbine produces 2MW and 2 500 wind turbines would be required to supply the entire Cape. Such a plant would take about 4 years to build on a 900km^2 piece of land at an estimated cost of R100bn.

Lessons from countries like Germany are that when the wind does not blow consistently one then has to revert to more dependable energy sources like coal, nuclear and solar. Equally, a base load solar energy power station generating approximately 2 000MW would require CAPEX of about R100bn to R120bn, although it would take up to four years from construction to commissioning, its cost structure would be somewhat similar to that of a nuclear power plant. So Chairperson, there are really no easy answers or a panacea to these difficult questions.

Chairperson, a company driven by the profit motive would not even be standing here engaging NERSA and the public on a build programme, which is going to culminate in a loss. We are standing where we stand

today, guided by one thing and one thing only; how we keep the lights on for South Africa and in the best interests of South Africa.

Thank you once again for your participation, constructive criticism and feedback in this very important process. We welcome some of the useful ideas that emerged out of this process. Indeed, the *status quo* is not an option. We need to also debate these matters taking cognisance of the fact that we are the one and only national asset – Eskom.

With regard to local government and the electricity price that gets transferred to consumers by municipalities, the NERSA public hearings brought some opportunities to the fore.

Chairperson, *uBaba uAmos Masondo noTata umfo ka Kolisa sibazwile.* We will engage further with SALGA as we always do, and more extensively with the Institute of Municipal Managers, the Institute of Municipal Finance Officers. These bodies in partnership with Eskom can best serve South Africa by looking at opportunities for reducing the high mark-ups that their members transfer to the consumer, often at 4 times the wholesale price that municipalities pay to purchase electricity from Eskom.

It was quite evident to us in the Cape Town hearings that municipal finance officers have an important role to play in devising smarter pricing arrangements that would mitigate the impact of electricity tariffs on the poor.

In Polokwane, you would recall Chairperson, that municipalities were citied as a weak-link in the efforts of granting access to Free Basic Electricity for the poor. *Moswana ore ditaba di tšwa mahlong. Re leboga sebaka se NERSA e re diretšego sona, ka mosegare wa sekgalela gore re kgona lemošana le baetapele ba go fapafapana mmogo le sechaba, molomo ka molomo, sefahlego ka sefahlego. Ge swarišane re dirišana mmogo, ruri re tla kgereša le gona go šutiša dithaba ra fediša le byona bohloki.*

Mnr du Toit Grobler. *verteenwoordiger van SAPPI en SAIEE ons waardeer u terugvoer ook*. *Ons het 'n lang pad van Nelspruit en dwarsdeur die land saam met u geloop; u was baie goeie sport. Ons gaan u inset en bydrae ook in ag neem*.

It is indeed correct that we have a challenge with electricity theft. Appropriate changes have been proposed for Government to make suitable policy changes in this regard. *Hiermee will ons mede-Suid Afrikaaners herinder dat dit bly 'n belangrike feit en ons plig as Suid-*

Afrikaanse burgers om misdaad aan die Polisie of enige staatsowerhede te raporteer so dra ons daarvan bewis word.

What is clear from most of the speakers, Chairperson, is that it is indeed correct that most of us want change for as long as it happens to the neighbour and not at our front door or backyard.

Chairperson, while listening to the Engineering Industries Federation of South Africa (SEIFSA) spokesperson, I wondered what SEIFSA's view were on the trading price of steel. I particularly wondered if there was a regulatory authority that I could engage with to fix the price of steel within the 7, 5 and 4 percent mark per annum?

So Chairperson SEIFSA, as a gesture of goodwill, is most welcome to commit their members to an annual fixed increase of electricity tariffs at 8%, 7% and 6% during this MYPD2 period.

With respect to the logic that we should get a tariff that purely covers our input costs, I am afraid, that oversimplifies our current position.

The logic fails to grapple with how our current interest burden (prior to new debt) would be funded and how our current debt position would be restructured or repaid, if no surplus funds are generated through our tariffs.

The discussion regarding tax rebates and relief for Eskom are noted, however, they do not fall within the competence of either NERSA's or Eskom's mandates. We advise Steel and (SEIFSA) to engage National Treasury and SARS in that regard.

As I stated in our opening remarks Chairperson, this is a defining moment not just for Eskom, but for all of us. Eskom welcomes an open and transparent engagement with stakeholders. We have had many bilateral stakeholder engagements during the process of the MYPD2 application. Many stakeholders took up our invitation to engage. We remain committed to further engagement in the spirit of openness. I should also caution against opportunistic engagements on the part of some stakeholders. We are genuinely looking for an opportunity to engage and culminate in a national electricity and related energy sources compact, for one reason and one reason only – to keep the lights burning for South Africa as a whole.

Chairperson, near Phalaborwa, there is a place called Bollanoto – translated to English – the place with the sound of a hammer. I wish to appeal to the various stakeholder and sector leaders not to let us turn South Africa into a Bollanoto.

In our public debates and discourse we must heed the wise words of Abraham Maslow, he who is good with a hammer thinks everything is a nail. We need to shift our mindsets and guard against hobby horses fuelled by negative energy.

For some, taking a public oath as well as standing on a podium and casting aspersions on the integrity of the men and women at Eskom may be a good pass time, but I must hasten to caution, it is very destructive. It demoralises a dedicated team of men and women I have come to work closely with, South Africans of substance and salt who neglect their families, make their career ambitions secondary to their service to their country. These are the 33 000 professional men and women I am proud to call my colleagues.

These are your neighbours, they are members of your spiritual or religious community, they too are citizens, they even are members of your local branch of your political party - they are your friends and family.

They are in every corner of South Africa, including the most remote Magapusfontein. You can engage them over a cup tea and *koeksisters*, or over a meal of *mala mogodu*, *okanye* over a dish of *umngqusho negusha*. Eskom can be influenced in as much as we seek to influence you. Let's penetrate, cross penetrate and cross-pollinate each other. Let's choose to engage and lead more responsibly with facts and data as our guide rather than using unfounded anecdotes and innuendos.

Eskom is a proudly South African company. The majority of its employees are South African who operate mostly within the country and interface with all spheres of our society, including the poor. Eskom through the shareholder compact, is not only mandated to, but is also committed to driving the developmental agenda of South Africa. We are well aware of the plight of the poor and will do everything we can to assist with poverty alleviation. We are the same organisation that drove and continues to drive the electrification of millions of homes across the country. We have joined hands with Government in working towards alleviating poverty and we believe that Eskom's infrastructure development provides opportunity to do just that, and more importantly, we will ensure that those interventions, mostly job creation, are sustainable. In other words, we are investing in the future of the country.

In our application we have made what we believe is a workable recommendation regarding increasing the Free Basic Electricity allocation. It is to be noted that any solution will have to be funded in one form or the other. This is the reality. We did not create it, but we remain committed to continue working with Government, civil society,

business and other stakeholders to find solutions to mitigate the impact of increasing electricity prices on the poor. After all, Eskom supplies only 40% of end-users in South Africa and affordability is an issue that has to be resolved by various role players.

Chairperson, working together we can do more. The last time I checked the annual budget for South Africa for the financial year 2009/10 was R841bn and the revenue was R642bn. Eskom's total costs of the build programme will come to about R395bn by 2014 (during the MYPD2). This is about 47% of the country's annual budget in one year. This demonstrates the magnitude of the problem. It is exactly because of the size of this challenge that we must focus all of our minds. I am afraid nobody will have the last laugh should we not have the appropriate tariff increase moving forward.

Chairperson, ladies and gentlemen, there's a few options on the table, equally, there's a bitter pill to swallow. Eskom is the heart of the South African economy. It could be said that this country's heart has suffered cardiac arrest; we need to perform bypass surgery while in the meantime we find other means of maintaining a healthy blood circulation so that this body called South Africa lives a life of vitality and longevity for decades into the future.

So, I am afraid Chairperson, from an ESKOM vantage point, NERSA must also in the interests of our country swallow this bitter pill with fellow South Africans and grant a 35% tariff increase smoothed over the next three years.

I have at the outset made it clear that as Eskom we have NO mandate from the Board or the Shareholder to embark on a process of privatising Eskom. The mandate reagrding Kusile is to find a Private-Public-Partnership solution to a pressing financial challenge. Other financially viable and bankable alternatives that COSATU or any other key stakeholder and strategic partner wishes to place on the table will be most welcome.

Chairperson, I would have failed in my duty today if I did not state here publicly and categorically that the management and the Board of Eskom are committed to ensuring that this public enterprise is a going concern at all times. An organisation is not deemed a going concern if it cannot meet its current and future liabilities over a financial year. Eskom is constantly juggling, balancing and managing this reality.

Our shareholder compact expects us to deliver against developmentally and economically sustainable outcomes. In other words our mandate is to contribute, in an efficient manner, to growth as well as yield returns

back into the national fiscus . We are governed by the Companies Act, the PFMA and aspire to live up to sound practices of good governance. All these come with requirements that we are constantly seeking to comply with and fulfil.

Chairperson, we must emphasise that there is a bigger price to be paid if we sit and maintain the *status quo*. We have a tough choice to make; between reliable electricity supply and steering the economy on a downward spiral of unrealistically cheapened electricity tariffs that deliver a climate of unreliable electricity supply.

Chairperson it is, I am sure an important lesson in history that the single most important contributor to the sinking of the Titanic was not necessarily poor technical capabilities nor poor engineering or design. Chairperson, the Titanic sank because firstly, those aboard the ship that stood on the temporarily dry side, said to those on the side of the ship engulfed in water – "…your side of the ship is sinking…"

Eskom and South Africa as we stand today can be likened to this experience. If sustainable electricity solutions are not found through national dialogue, aligned to the core interests that bind our shared destiny of a prosperous nation we will, I am afraid, all sink together.

The times we are in require a strong sense of *toenadering* from all of us; not finger pointing, we need to share; share knowledge, ideas, analysis and exposures. Indeed we should even look for opportunities to go to countries like Chile, Mexico and Brazil who have been where we are and look for lessons that we can amass on a multi-disciplinary and multi-stakeholder basis.

We need to go to Japan and ask how they achieved the rollout of solar energy on the mass base that they have done to the tune of 1 900MW by the end of 2007 and Spain with 2 600MW of solar energy. These are some of the conversations we must have now and beyond the NERSA public hearings and price application determination process.

We can't afford, like the Ostrich, to bury our heads in the sand. We can't wish our current reality away. Lamenting what Eskom and its shareholder could have done will not solve the situation. The Regulator must do what must be done in the best interest of South Africa. Parallel to that, we all as South Africans need to urgently go on a seek, search and adaptation quest for a lasting innovative solution.

Wise Africans taught us that *Letsema le tiya ka beng ba lona*. In English – An expedition draws its strength from the quality of its leadership and sense of ownership. Armed with this sense of ownership and leadership

we need to go on a quest for a better way and a shared future in terms of security of supply.

Chairperson, ladies and gentlemen let's all rise to this occasion. History will judge us harshly for failing to fulfil our respective roles as leaders – it is said that the role or function of a leader is to find, recognise and secure the future. Let us not be bondaged by our current reality, but rather let's transcend our current circumstances, seek and find a lasting solution.

As we did together in the past with other growth and development objectives, for instance with the national electrification programme in the mid-90's, Chairperson, let us rise and step onto the plate now, a decade into the 21st Century and side-by-side emerge with a national compact on how we deal poverty a blow, while at the same time facilitating long-lasting economic growth and development. We have stated our commitment to supplying electricity and energy in the context of an Integrated Resources Plan (IRP), which we expect to be published in the public policy arena soon.

Honourable members of the press, let me also state here from this public podium that we will not be conducting interviews on the tariff application until after NERSA's public determination. We respect the rules of NERSA and appeal that you bear with us in that regard. NERSA has created the public hearings forum and we do not to wish any public representations outside of this formal process. Once more, we wish to thank you all for your inputs.

Chairperson, *re ithutile go le gontsi go maAfrika bo Kgabo Mokgatla. Kwena Mokgatla letlalo makgwakgwa le Kubu Mokgatla 'batana tsa metsi boKubu e reng ba ethimola ebe nna e kete letsatsi le a tlhaba. Ga go ntse jaana Mokgatla a re a le kgorong a ala taba, a bo a ripa a re bagaetsho, ke le motla pitso ke fetsa foo ka la motlapitso, ga nkitla ke sitwa ke kgomo ka bohlale gonne e nale bohlale bo kaalo ba go itse gore kgomo ga nke entsha boloko johle, Modulasetulo nte le nna ke dire jaalo ken ne bohlale jaaka boKgabo Mokgatla ke tsipe gone foo.*

Mokgatla a re ruri bathong re tla re go ntse jaang fa go ntse jaana awo bathong. Tota Modulasetulo NERSA re a leboga gore ba be ba re tsamaisitse leeto le tle jaana go tloga Nelspruit go fihla haano ha Gouteng maboneng. Tota ke nnete re tswanetse go le utlwela botlhoko ka gore le tota le gahlametse masisi, tota le tsipaganetswe segolo setonna ga re lebisitse go tshoetso e le lebaganeng ke go e tsaa.

Chairperson Africa's time has come. *Ke Nako*! This year 2010 is the year we have been waiting for.

South Africa is justifiably proud for hosting the world during the 2010 FIFA World Cup™ 2010 and we are sure that our country will put on a party to be remembered. Eskom as a committed and critical member of "Team South Africa" has been preparing for this event since 2007. We created a dedicated project team under the leadership of one of our managing directors and are working very closely with the Local Organising Committee and the host cities.

We have taken several initiatives in consultation with our regional partners and large customers to ensure that the FIFA World Cup 2010 takes place without any incident, and the only thing a fan should worry about is getting to the game, fan park or TV lounge on time. These initiatives include amongst others; ensuring that we do all our generation maintenance prior to the event so that all our capacity is available during the World Cup; ensuring our large customers schedule their maintenance during the World Cup period to reduce demand; making arrangements for our regional partners to provide us with any excess power they may have during this period and working with municipalities to ensure that network infrastructure to the host cities is secure. We want to also use this opportunity to call on all our customers and all consumers of electricity to increase their personal contribution to conserving energy and making their contribution to a successful World Cup.

Eskom staff understand their responsibility to ensure an incident free World Cup and are excited to be playing a significant role in ensuring that South Africa hosts a successful event. We are ready! *Ke Nako*!

Le ga gontse jaalo, Chairperson, members of the Panel, we wish NERSA all the best pearls of wisdom in the remainder of its process. Together with all South Africans, we will patiently await the final outcome and announcement of the decision in February.

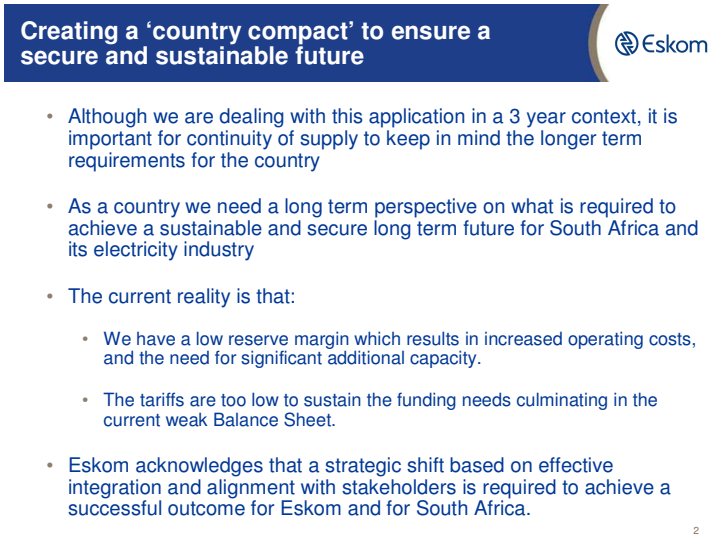
Until then Chairperson and members of the Panel, when you switch the lights on at home, when you take a shower every morning or that long bath after a hard day, Chairperson, when your PA places your favourite cup of tea or coffee on your desk, or when you have the cappuccino or espresso at you favourite point of sale, when you switch your laptops and desktops on and off, Chairperson, when you microwave that quick meal, when you charge that cellular phone, as I am sure you will tonight or at some point this weekend, please remember the most important thing - the appropriate tariff increase is 35%, 35%, 35%. *Mopedi wa kua ga-Sekhukhune o re Re lebogile 'o šoro, a be a tlatše a re, kakudu stereke. Siyabulela S'hlalo, Enkosi ka khulu, Hartlik baie dankie. Siyabonga. Rolivuha ka Maanda! Kani mambo! Sithokoze! Ndaa! Thobela!* Thank you ladies and gentlemen!

NERSA public hearings, 11-22 January 2010

Avuxeni Makweru. Hearings Chairperson Mr Thembani Bukula, members of the Regulatory Authority and Panel (NERSA), members of formations of Organised Labour, Farmers, members of civil society at large, ladies and gentlemen good morning, dumelang, thobela, silotshile, goeie more, Ndaa!.

We thank the regulator, NERSA for the opportunity we are granted today to present some remarks and highlights from our submission of 30 November 2009. We also thank you ladies and gentlemen for your attendance and participation today in this very important process.

We see this process also as an opportunity to facilitate dialogue that prompts all South Africans to engage in a Public-Participation-driven process to shape a crucial decision that has to be made on an appropriate tariff increase that will enable a secure and sustainable future electricity supply for our country.



Chairperson, today's conversation in its full context is not just about Eskom – it is about how we as a nation work together, seek solutions together to achieve our goals for a shared prosperous future. South Africa needs its citizens, business people, government, regulator, energy producers and manufacturers to engage in dialogue around a long term perspective on what is required to achieve a sustainable and secure long term future for South Africa and its electricity industry.

This future cannot only be secured and or guaranteed by Eskom on its own – building on the conversation we will have today and beyond, we ultimately need a national 'compact' between all South Africans working together at overcoming our challenges. It is important to note that this price increase application only covers the first three years of this future. ESKOM on the other hand conducts its affairs and business as is the case with any energy utility operator in the world, over a long-term planning horizon of 10, 15 to 20 years.

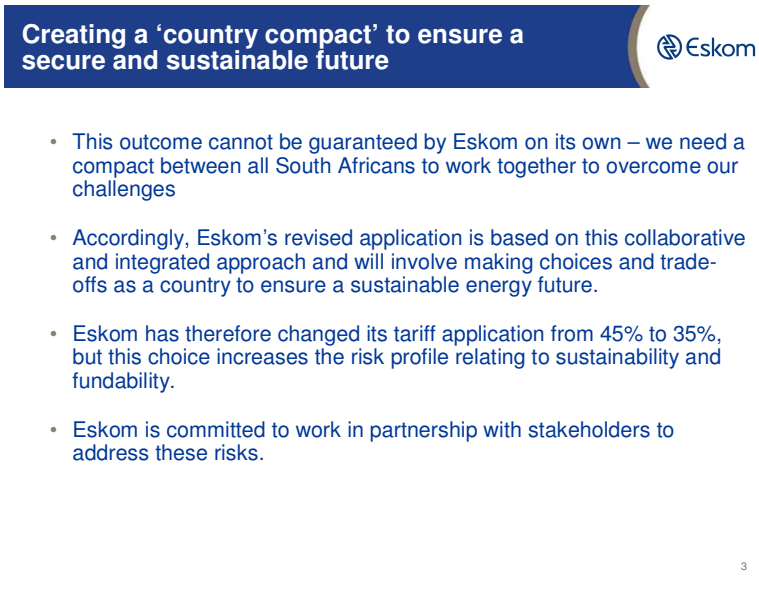
This MYPD2 (application) although located in context of the current three-year cycle seeks to also proactively take a view on addressing security of electricity supply for the future sustainability of Eskom, the electricity industry and ultimately the economic growth of South Africa.

At the end of September Eskom proposed a 45% annual increase in electricity tariffs over 3 years. Since that time we have been engaged in many rich and insightful discussions with a wide range of stakeholders. We have also had significant engagement with our shareholder and Board of Directors which culminated in overall better alignment and commitment for

collaboration on aspects of the application. This has led to the revision of the application from 45% to 35% annual increases.

These engagements also culminated in a new decision of the Board of ESKOM and the Shareowner to explore alternative funding options, including prospects for private equity ownership on a Project basis of one of its power stations, Kusile.

Most of the detail of the other changes to the application will be highlighted in this presentation.



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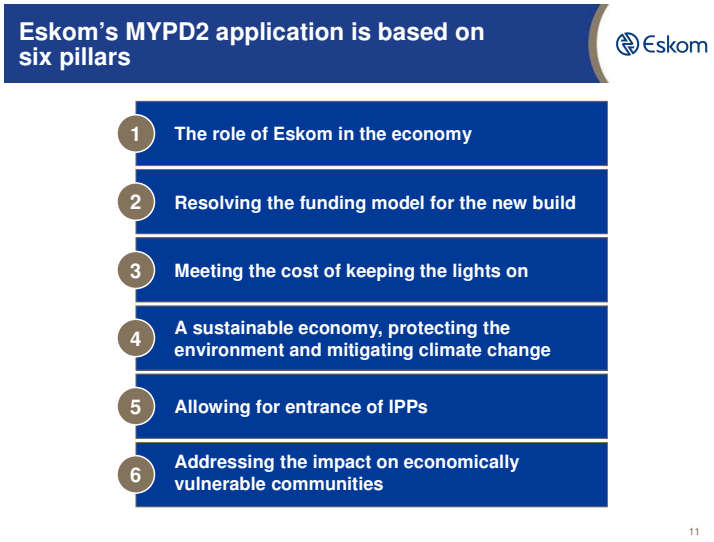
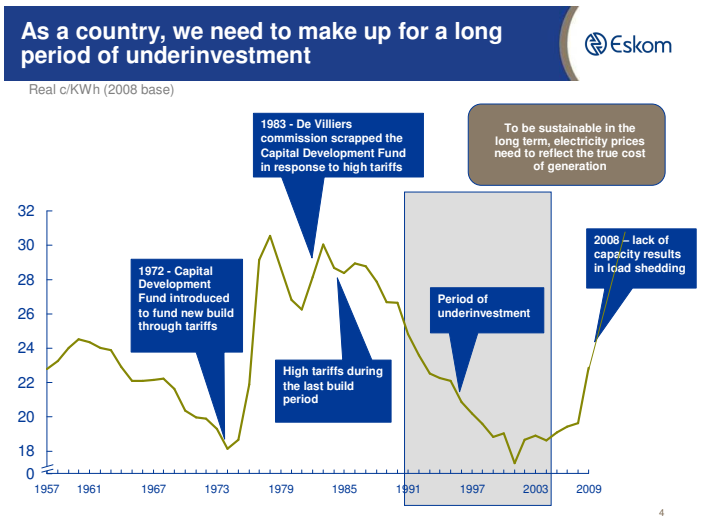
With this context in mind, Eskom's MYPD2 application rests on six pillars:



1. Clarifying the role of Eskom – and of other role players – in South Africa's economy
2. Establishing a way forward for funding the urgently needed investments in new generation capacity
3. Clarifying the real cost of keeping the country's lights on – ensuring that future electricity tariffs reflect the real cost of power generation
4. Making sure that our approach as a country to investing for our future needs is sustainable over the long term – in particular regarding impact on the environment and on climate change
5. Ensuring the right enabling conditions are put in place to allow for the entry of Independent Power Producers other than Eskom in the market
6. Providing a suggested approach to mitigating the impact of higher electricity tariffs on South Africa's poor. At the moment Eskom may be seen to be insensitive to this pillar – on the contrary Eskom is

committed to working with government to achieve the country's developmental agenda.

Activity	Measure	2009	2008	2007
BEE	Rm	35 209	25 447	16 557
Electrification	Number	112 965	168 538	152 125
Corporate Social Investment	Rm	79,50	69,80	74,70



Because we are dealing with a 20 year planning horizon let me take you back to the history.

From 1972 to 1983 South Africa made provision to fund new build through deliberately establishing higher electricity tariffs. These tariffs allowed Eskom to accumulate a Capital Development Fund to pay for new infrastructure.

You can see from the graph that the result was a steep rise in real electricity prices (adjusted for inflation) – because a sustainable electricity tariff needs to reflect the true cost of producing electricity - This cost includes the cost of generation, and capital costs associated with investing in future capacity.

The Capital Development Fund was scrapped by the then government in 1983. You can clearly see the result – since the 1980s we had electricity prices that increased below the rate of inflation. Herein lies the current challenge of the electricity supply industry in South Africa - as a country we have not invested sufficiently in providing for our future electricity needs.

When the lack of capacity in more recent years severely reduced the reserve margin (leading to the load shedding of 2008), – new funding needed to be sourced in order to build the new supply capacity we require. This is the challenge we are now addressing as a country. To meet this challenge will ultimately require a cost-reflective real electricity price of 70c/kWh.

The current low reserve margin has major implications for Eskom and for the country

Eskom

Tighter reserve margin and rising costs since 2007/8

Reduced security of supply

- **Constrained supply**: Available capacity not able to meet increased demand
- **Planned load shedding**: balancing demand and supply require shedding specific users to prevent system collapse

Increased opex cost base

- New power stations resulted in increased human capital costs due to **new vacancies** to be filled
- Ageing power station fleet and high load factors results in **increased maintenance costs**

Higher primary energy costs

- **Higher volumes**: Tight reserve margins require higher energy output from stations and therefore more coal volumes
- **Higher coal price**: Reliance on more expensive short-term coal contracts due to depleting cost-plus mines
- **Higher transport cost**: Depleting cost-plus mines resulting in coal imports from mines further away and transported by road

5

The low reserve margin we currently experience have severe implications for both Eskom and the country as a whole. As you can see in this slide…

Eskom's funding model, determined by government, covers both tariffs and other funding sources

Eskom

Eskom's regulated revenue (tariff) is intended to cover the cost of current electricity supply

- **Recovery of prudently incurred costs**
  - Primary energy
  - Operating expenditure
- **Depreciation on existing assets**
- **Return on existing assets**

New plant should ideally be funded from sources other than tariffs

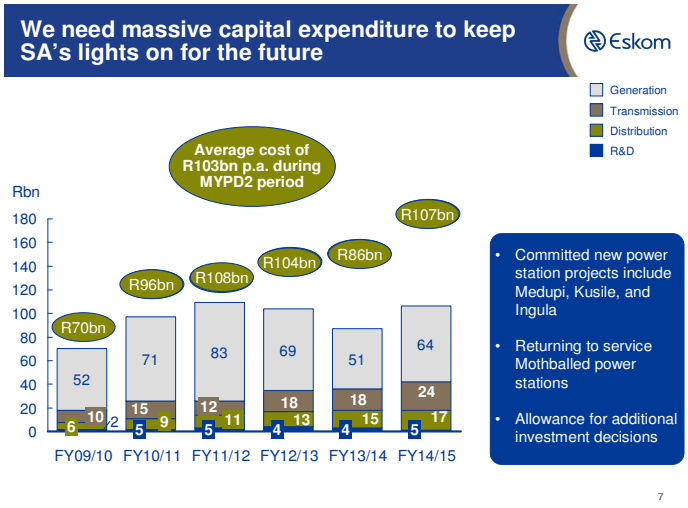
- Retained earnings (reserves)
- New equity from the shareholder
- Borrowings

6

To resolve the low reserve margin, additional capacity is required. In a normal business usually reserves are built up to assist in funding future

expansions together with new equity and debt. It is important to remember that tariffs, is only one of several sources of potential funding for Eskom which allow the organization to leverage more debt – quality debt that does not come with onerous conditions. This is particularly important as we face several years of significant investment in the new generation capacity South Africa needs.

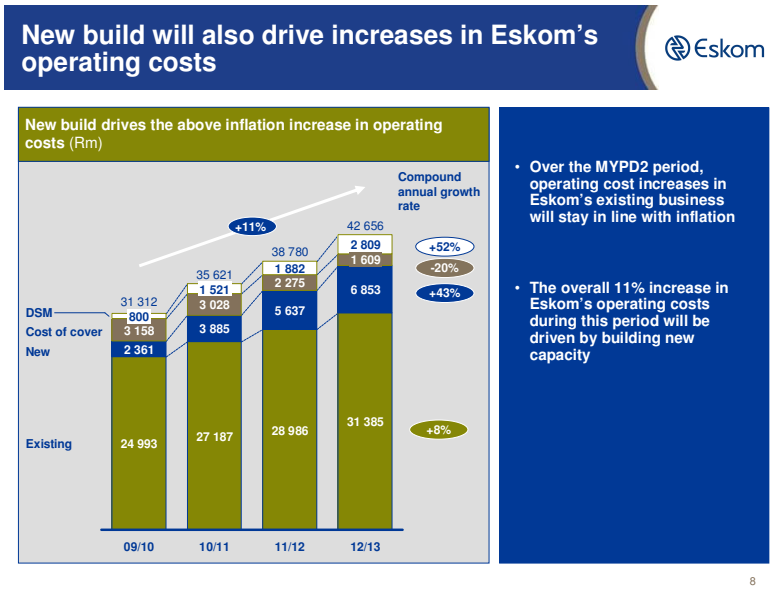
With regard to the capital expansion programme, it should be pointed out that what is required, is a revenue stream and a balance sheet that can support borrowings and other funding options. This is being addressed in the context of the current regulatory framework.



A combination of the funding sources is required to fund this expansion programme. Due to the massive expenditure in a relative short period as well as in the long term, it is important to optimise the funding options. The investment programme for keeping SA's lights on in the future has a total projected cost well in excess of a trillion Rand by 2028 – a major decision

that needs to be taken by the country. Included is an average of R103bn per annum in capital expenditure over the MYPD2 period. This includes:

- Committed new power station projects, which include Medupi, Kusile, and Ingula
- Previously mothballed power stations being returned to service
- Allowance for additional investment decisions

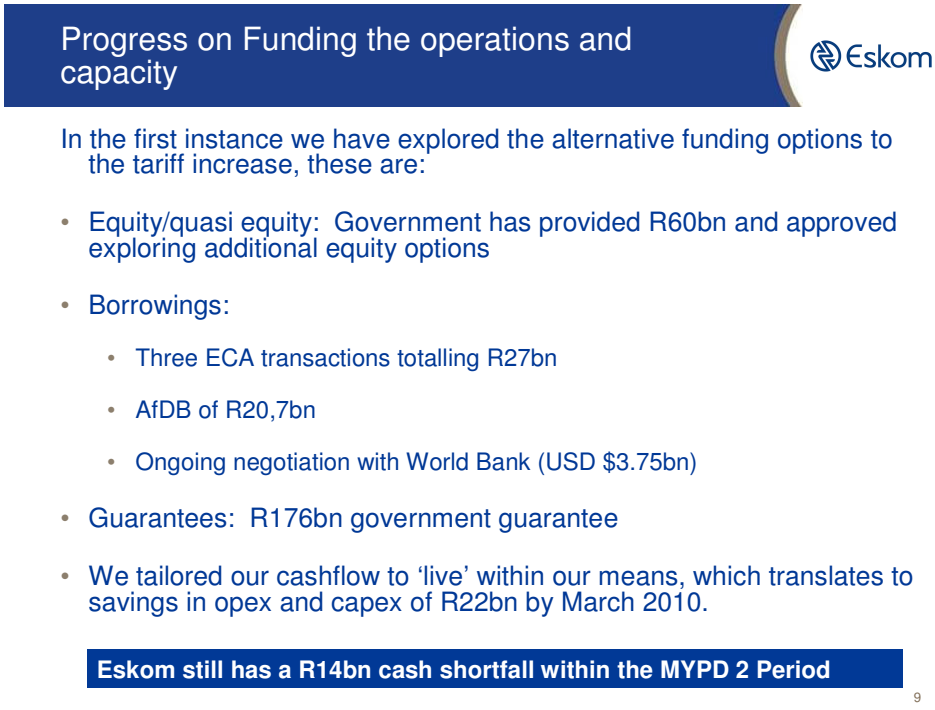


The new build programme is also the driving force behind increases in Eskom's operating costs over the MYPD2 period.

We are making every possible effort to keep our costs under control through continuously improving efficiencies – I will tell you more about these efforts shortly. You can see that our operating costs for Eskom's existing business will be contained roughly in line with inflation, at about 8% p.a.

But as the construction of new build projects progresses, and especially as new capacity begins to come on line towards the end of the MYPD2 period,

there will inevitably be new operating costs for the new parts of the business.

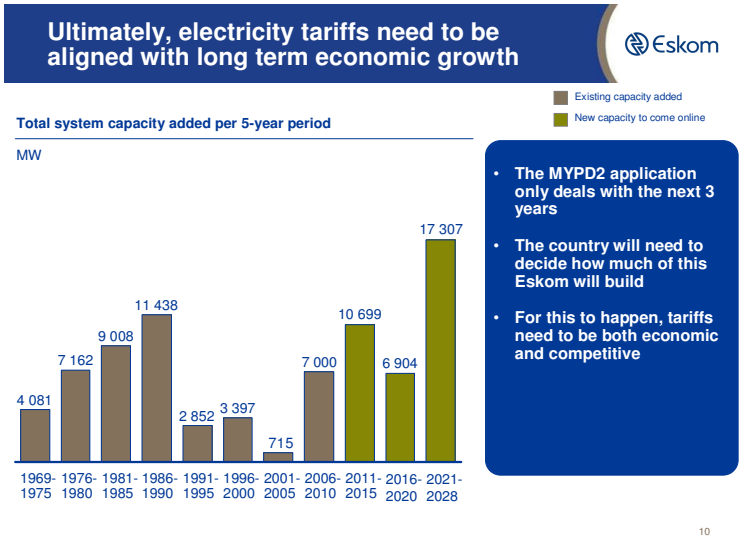


As funding is a key enabler to the successful execution of this programme (as stated previously), Eskom has done the following

- Secured Equity from government of R60bn and currently exploring additional equity options
- Extended our borrowing programmes to include facilities from three Export Credit Agencies (ECA) transactions totalling R27bn, AfDB of R20,7bn and we are currently in negotiations with World Bank (US $3.75bn)
- Guarantees: R176bn government guarantee
- Cash flow savings in operating and capital costs: R22bn by March 2010

Despite all these initiatives Eskom remains R14bn short.

I should emphasise that as a state-owned enterprise Eskom's objective is to meet its mandate of supplying reliable electricity and to ensure that it is able to remain financially sustainable in order to deliver on its mandate.



As already stated we need to be mindful of the longer term implications. The current capacity expansion programme results in a doubling of South Africa's installed capacity over the next 20 Years. Eskom and IPPs will play a part in providing the new supply for South Africa. The realisation of energy efficiency is critical to ensure a cleaner future as well as reducing the impact of price increases on the consumers

- Current installed Generation capacity in South Africa and contracted imported Generation amounts to approximately 43 500 MW. Of this 43 500 MW;
    - *1500 MW is generated and imported out of Cahora Bassa,*

    - *2000 MW comes from small local co-generators like the City of Tshwane, Kelvin Power Station and SASOL's facilities in Secunda,*
    - *40 500 MW comes from ESKOM*
- Current expansion plans are based on the moderate growth scenario (averaging 3% electricity consumption growth rate over a 20 year period). , to ensure adequate reserve margin, 20 000MW of additional generation capacity is required by 2020 and up to 40 000 additional megawatts by 2030.. This may change as part of the IRP development process.
- The country will through the IRP process determine how much Eskom and IPPs will build.
- Eskom's older coal fired power stations may start to be de-commissioned from 2023 onwards.
- Eskom's current build programme and well advanced IPP projects could contribute at least 14 000 MW by 2017 to this requirement.

The implication is that electricity prices will have to rise significantly until 2012/13, to ensure that the tariff reflects the true costs of installing and operating generation capacity (i.e. an average real price of 70c/kWh). These increases are required for both Eskom and IPPs to ensure reliable electricity, which is a critical strategic imperative to ensure sustainable economic growth in South Africa.

Relying on a national commitment to mitigate the risks that could materialise from this change, Eskom has applied for a revenue requirement that translates into a price increase of 35% for each year of the MYPD 2 period. This will lead to an average real price of 43c/kWh in FY2010/11, 55c/kWh in FY2011/12 and 70c/kWh in FY2012/13.

This will still mean a cash shortfall for Eskom of R14bn in FY2011/12 and R8bn in FY2012/13. We will address this shortfall by intensifying our efforts to raise the required borrowings and by facilitating the introduction of private equity as soon as possible.

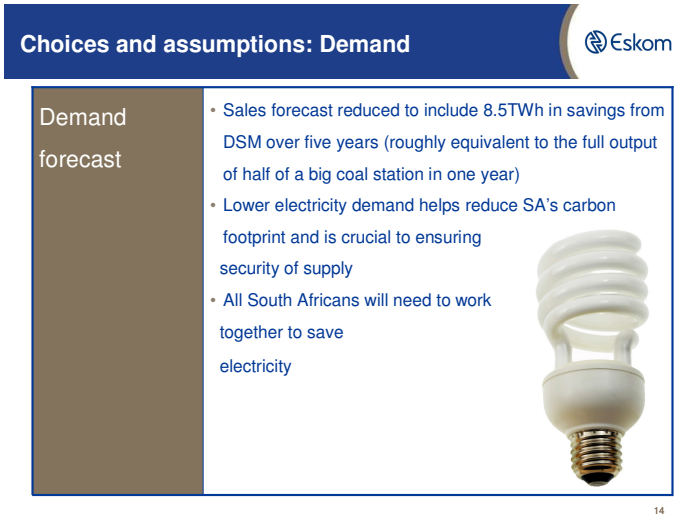
In the event that such initiatives are not realised, the rephasing of the capital expansion programme or other appropriate interventions may become necessary.

You can see that we are facing significant financial challenges. Successfully meeting this challenge with a lower tariff increase than Eskom initially requested is indeed possible – but this will require making some choices and trade-offs as a country.

Our approach to this submission has been informed by the choices that need to be made regarding the following issues:

- Firstly demand forecasts
- Secondly the capital expansion programme
- Thirdly cost reductions
- And finally seeking additional sources of funding

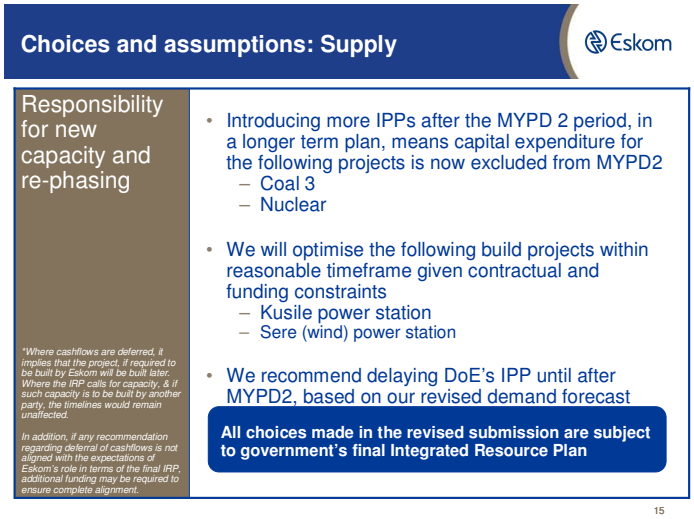
I will now provide some detail about these choices and trade-offs.



Regarding the sales forecast, Eskom's sales assumptions have been revised to reflect the impact of securing 8.5TWh reduction through energy efficiency savings over 5 years, resulting in a lower sales forecast. The primary lever for achieving these DSM savings is the successful rollout of solar water heating to 1 million households. It is important to note that the application only caters for a small portion of the funding of the solar water heating, thus the remainder must be funded elsewhere.

In the long term reducing demand for energy will be good for South Africa, lowering our carbon emissions and ensuring we have sufficient capacity to meet demand.

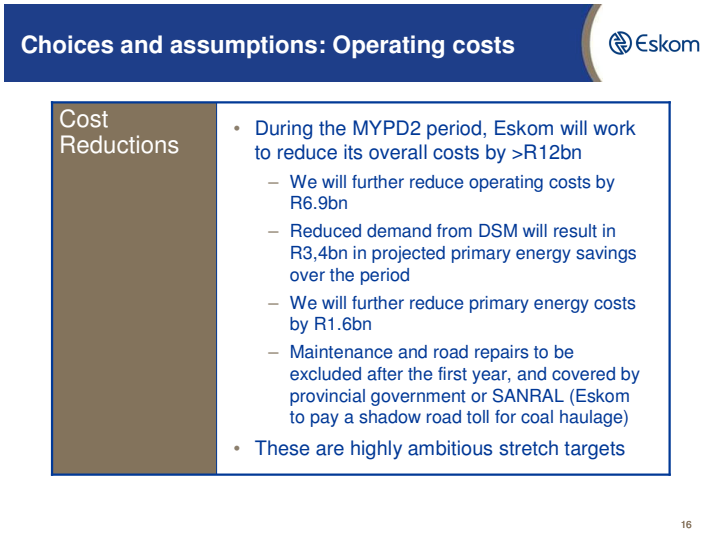
But reducing demand will require all South Africans to work together by changing our consumption behaviours and investing in more energy-efficient technologies where possible.



We have also optimised the schedule of Kusile within reasonable timeframe given contractual and funding constraints. The lower demand forecasts have already resulted in further flexibility in this regard. It should be pointed out that the impact on the schedule of the major committed contracts is being assessed and may be unaffected. We have also looked at re-phasing other build projects:

- Introducing more IPP options in later years (after the MYPD 2 period)
- Removing expenditure to prepare for the next power station (which we previously referred to as coal 3), on the assumption that someone other than Eskom will build this capacity, regardless of whether it be coal, gas or hydro-powered.
- Moving capital expenditure for the next nuclear plant outside the MYPD 2 period
- Delaying the wind option (Sere) for a year
- Recommending the removal of the expenditure for the Department of Energy IPP from Eskom's funding requirement for the MYPD 2 period has been recommended based on the revised demand forecast

It should be noted that most of the above choices are not Eskom's to make alone – they are subject to decisions made in government's final Integrated Resource Plan (IRP). Where capacity is instead built by someone other than Eskom, the original timelines might be unaffected.

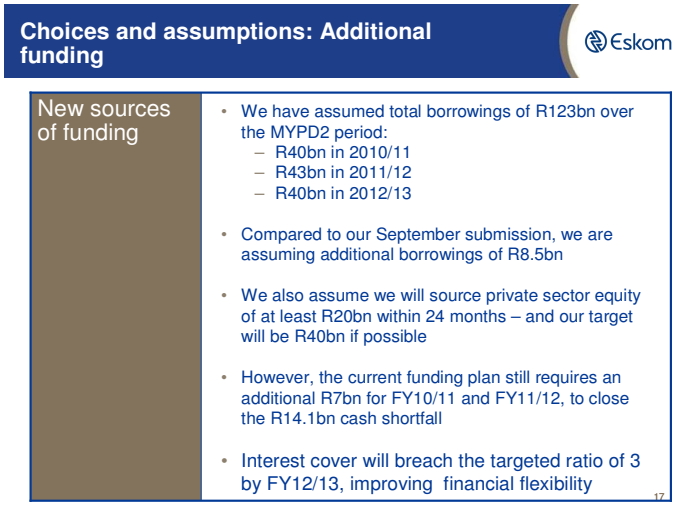


We at Eskom are also doing our part to save on costs during the MYPD2 period.

Apart from pursuing internal efficiencies, reduced demand will help us save on primary energy such as coal costs. We will also work to improve contracting arrangements and operational practices to further save on coal costs.

We have also removed the provision for the maintenance/repairs to roads after the first year, on the understanding that the roads will be maintained by Provincial Government or South African National Roads Agency Limited (SANRAL). Eskom will only be liable for a shadow toll for its use of the roads for coal haulage.

Achieving these savings targets will not be easy – we are cutting to the bone in an effort to make the new financial plan feasible.

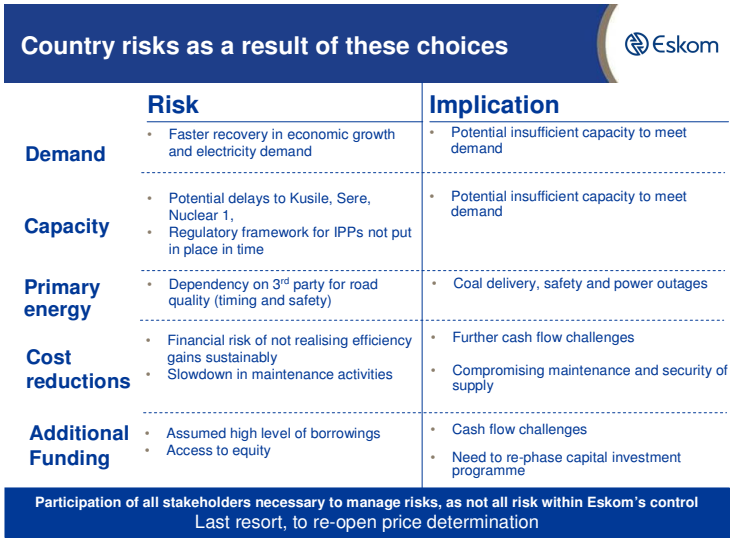


In terms of Additional Funding, we are planning to borrow a total of R123bn over the MYPD2 period. The revised application thus factors in an assumption that we will make additional borrowings of R8.5bn.

For planning purposes we have assumed that equity of at least R20bn will be sourced from the private sector at a project level within 24-36 months – but our intention is to maximise the introduction of such private equity with a target ultimately of R40bn.

This will not be sufficient, however, as we will still need another R7bn in 2010/11 and 2011/12 to cover Eskom's cash shortfall as a result of escalating capital expenditure and operating costs.

It should also be noted that funding from private equity comes with its own trade-offs – given that a higher tariff will need to be sustained so as to provide a fair return on investment for the equity partner.



Eskom's price application balances the interests of Eskom, customers and the country. It has also mitigated/reduced the possible adverse impact on the economy and job losses by choosing a longer time period to achieve cost reflective tariffs.

However, without collaboration with government and other stakeholders, this approach may increase South Africa's exposure to risks related to security of supply. It will also increase the risk profile of our operations and financial sustainability.

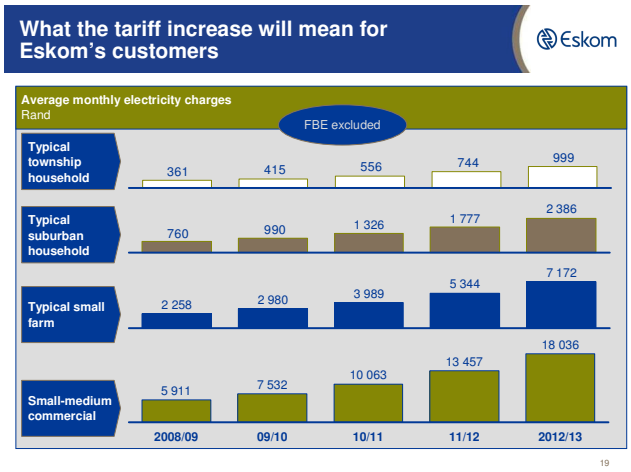
- In particular, should demand growth exceed our latest assumptions, urgent intervention will be necessary to ensure sufficient capacity is built timeously.
- Furthermore, the assumed levels of borrowing and equity are optimistic, and may not materialise. Should Eskom fail to raise the requisite funding, it will have little option but to further re-phase the capital investment programme. Such delays will further increase the security of supply risk.

The country's vulnerability is therefore increased and in the event that the required interventions are not implemented as anticipated, security of supply could be threatened. Conversely, if the required interventions are successful, the risk profile would reduce.

Not all these risks are within Eskom's control, and the participation of all stakeholders is necessary to manage these risks to ensure a suitable outcome and the achievement of our long-term goals as a country. Success depends on a collaborative effort by Eskom, Government, customers, business, communities and other stakeholders. An effective partnership is therefore necessary to achieve success.

It is critical that government should ensure that an effective monitoring process is established to monitor the progress regarding the achievement of the necessary interventions.

As a last resort, Eskom will consider the option of reopening the price determination process.



The impact of the proposed tariff increase for the individual customers is indicated on the above slide.

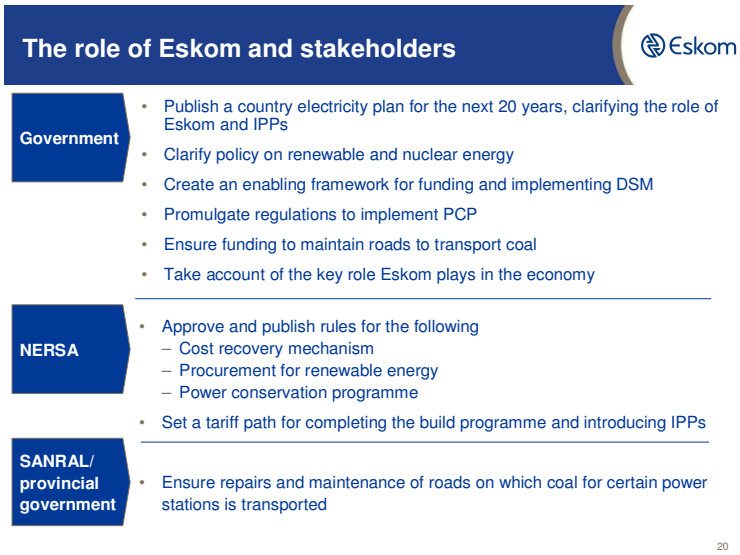
Although this slide indicates the increase in the month;ly charges, it does not reflect the reduction that could be achieved through electricity efficiency. In addition, the monthly bill will be lower for those consumers who are entitled to Free Basic Electricity (FBE).

Consumers who are municipal customers may pay rates different to those shown for direct Eskom customers.

What we mean by a ‘country compact’ is precisely the kind of coordinated joint effort I have been talking about – with all stakeholders playing a part in managing these trade-offs to achieve a secure and sustainable future.

Various stakeholders such as government, NERSA, SANRAL/provincial government, Independent Power Producers and customers, not to mention Eskom ourselves, have certain responsibilities to ensure success.

I would like to discuss these various stakeholder responsibilities in somewhat greater detail.

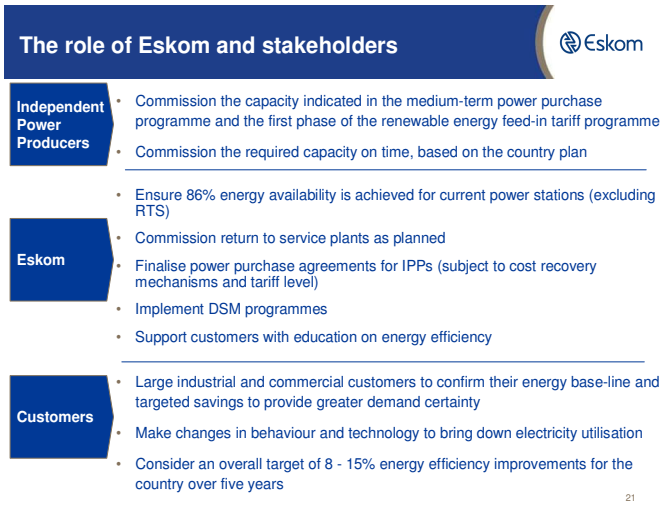


Government should publish a country electricity plan to provide clear direction on the vision for the electricity sector in the next 20 years and the role of Eskom and independent power producers.

- Government also needs to clarify the policy on renewable energy and nuclear energy, and create an effective enabling framework for the funding and implementation of demand side management programmes. We need regulations to facilitate the implementation of

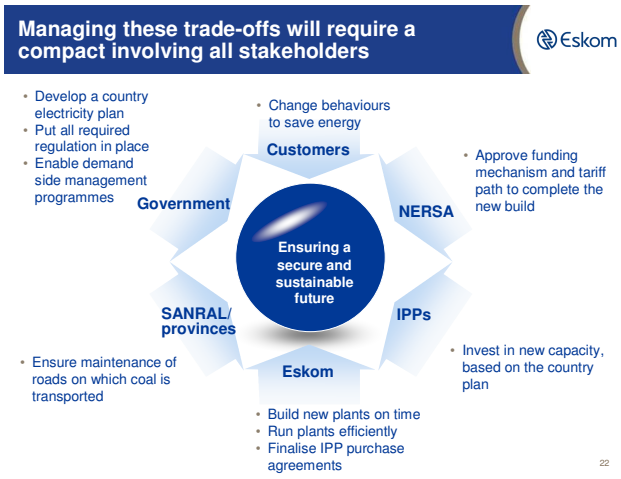
the of the power conservation programme. In addition government should ensure a funding mechanism for the repair and maintenance of roads used to transport coal to the power stations.

- NERSA in turn should approve and publish the cost recovery mechanism rules(this has since been done), procurement rules for the renewable energy programme and approve and publish rules for the power conservation programme. They should set a tariff path that caters for the completion of the current build programme and the introduction of independent power producers.
- SANRAL or provincial government should ensure that repairs and maintenance are carried out on the roads on which the coal for certain power stations is transported.
- Independent Power Producers (IPPs) should commission the capacity indicated in the medium term power purchase programme and the first phase of the renewable energy feed-in tariff programme



We at Eskom should:

- Ensure an 86% energy availability factor is achieved for our current fleet of power stations (excluding return to service plants)
- We should bring the return to service plants on line as planned.
- We have to ensure power purchase agreements are finalised for medium term IPPs and also the renewable energy feed-in tariff
- We have to support government in executing the demand side management programme
- We need to support government in establishing the power conservation programme, and finally
- we have to support customers with an education programme on energy efficiency



Large industrial and commercial customers need to confirm their energy base-lines and targeted savings, to provide some level of demand certainty over the next 3 years. They also need to consider their electricity utilisation patterns and make changes in behaviour and technology in order to achieve savings.

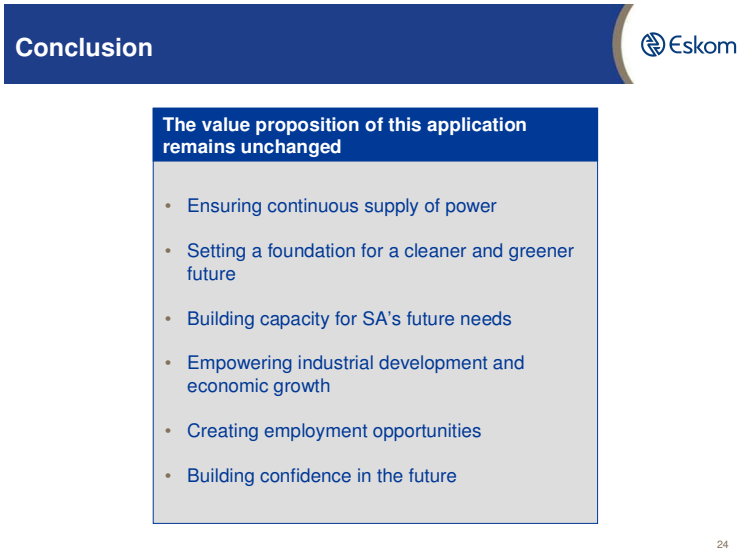
The MYPD 2 application needs to be seen within the context of developing a long-term vision for South Africa.

As a country we need to have a view of the overarching objectives for the long term success and sustainability of the economy and the electricity industry. The electricity price path must be consistent with that objective.

It is crucial that the roles of the various parties in achieving these national objectives are clear, in particular regarding the implementation of key initiatives: aggressive demand side management, facilitating access to funding, introducing new capacity, ensuring integrated infrastructure development, reducing our carbon footprint, reducing energy intensity per GDP output and ensuring security of supply.

Eskom cannot provide for all SA's future energy needs on its own – an enabling environment is required to attract new entrants to the market. A collaborative effort is therefore required between Eskom, government, and all stakeholders in the electricity industry.

Finally, Eskom needs to focus on executing its mandate within its own capability and capacity, while other role players in the country execute their own specific mandates.



Our objective is to ensure security of supply and consequently facilitate economic growth, address access to and affordability of electricity for the poor, empower and encourage private players to enter into the market over time, facilitate a move towards cleaner generation technologies and support regional development.

This MYPD 2 application, and in particular the price path and time period within which to migrate from the current price level to an appropriate price level, should be assessed in relation to achieving the overarching long-term country objectives. The MYPD 2 application is therefore a stepping stone towards achieving the objectives of South Africa in the long term.

Eskom is concerned about the increased risk profile but is committed to working within a broader national partnership to ensure we all achieve success.

The provision of reliable and affordable electricity is a critical and strategic imperative to ensure sustainable economic growth in South Africa.

Engagement with our stakeholders has been extremely useful and has informed the choices that have now been made. We believe that Eskom's price application will result in an integrated solution that balances the interests of Eskom, customers and the country. We believe that we have mitigated the adverse impact on the economy and job losses by choosing a longer time period to achieve cost reflective tariffs. It is our firm belief that it is in the national interest to make the appropriate country choices in a collaborative and participative process.

This is a defining moment, when together as South Africans we can decide on our future. Thank You!

Footnote from President Zuma

South Africa has ongoig problems in the energy sector that requires comprehensive solutions. The problems concerning energy are broader than the huge tariff increases we have to bear. There are issues of our energy mix, environmental sustainability, distribution mechanisms, surcharges by local municipalities and the role of private producers to address. We would be failing our people if we do not address these urgently.

ENVIRONMENTAL IMPACT ASSESSMENT (EIA)
EIA: 12/12/20/944

FOR THE PROPOSED ESKOM NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE

DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

PUBLIC MEETING WITH SPECIALISTS

SEA VISTA
25 MAY 2010
18h00 – 20H00

TABLE OF CONTENTS

PREFACE

Should participants who attended the meeting require any changes to these proceedings, please notify the Public Participation Office in writing within 14 days of receipt.

"Unidentified I&APs" refer largely to persons who attended the meeting and verbally raised issues without providing their names. This in no way diminishes the value of the issue raised. Should you recognise your issue and would like to have your name recorded next to it, please advise the Public Participation Office.

In order to provide a structure and to enable the reader to follow the proceedings with ease the minutes have not been captured verbatim and post-meeting notes have been added for clarity and information purposes and are indicated in **bold**.

1. ATTENDANCE

1.1. Attendance – Interested and Affected Parties

- As per attendance register.

1.2 Attendance – Eskom Holdings Limited

Name	Position/Role
Mr Mervin Theron	Manager – Regulatory Affairs and Localisation, Nuclear Division
Ms Carin de Villiers	Manager - Stakeholder Management and Communication, Nuclear Division
Mr Jan Norman	Acting Infrastructure Manager Nuclear-1 – Divisional Client Office
Mr Johan Breytenbach	Acting Project Manager - Nuclear-1
Mr Gert Greeff	Manager - Nuclear Sites
Ms Lorraine Ndala	Environmental Advisor – Environmental Generation Division
Mr Mandla Mbusi	Stakeholder Management – Koeberg Nuclear Power Station

1.3 Attendance – Specialists

Name	Position/Role
Prof Charles Griffiths	Marine Specialist
Mr Alewyn Dippenaar	Social Impact Assessment Specialist

1.4 Attendance – Environmental Consulting Team

Name	Organisation	Role in the project
Ms Jaana-Maria Ball	Arcus GIBB (Pty) Ltd	Nuclear 1 EIA: Project Manager
Mr Reuben Heydenrych	Arcus GIBB (Pty) Ltd	Senior Environmental Scientist
Ms Bongi Shinga	ACER (Africa)	Public Participation Consultant
Ms Karin Bowler	Karin Bowler Enterprises	Facilitator

2. WELCOME AND INTRODUCTIONS

The facilitator, Ms Karin Bowler, welcomed everyone to the meeting. The meeting was opened with a prayer. The meeting was conducted in English, Afrikaans and Xhosa.

The facilitator introduced the environmental team, the specialists and the Eskom representatives as per Sections 1.2 - 1.4.

3. FORMAT OF MEETING

The facilitator explained that during the last round of meetings held during March and April 2010, it became clear that many of the people present at the various meetings had pressing issues in terms of the various specialist studies. It was agreed with the environmental consultant that they would arrange for meetings with the relevant specialists. There were approximately 24 different specialists who contributed to the Draft Environmental Impact Report (EIR). It would be impossible to have all of these specialists attend a meeting. The environmental team, therefore, examined the Issues and Response Reports and the proceedings from the meetings and identified which of the specialists would be relevant to this particular area.

The format of the meeting is therefore to serve the objective to allow the specialists to respond to queries raised by stakeholders. The specialist studies to be presented would be: Marine Ecology Assessment, which also focuses on the Chokka Industry and the Social Impact Assessment.

The facilitator informed all present that the presentation will take approximately 15 minutes and then after each presentation there will be 30 minutes allowed for discussion. Should the public need more time for discussion, this will be decided after the 30 minute period. The facilitator explained that the meeting is being recorded and she asked everyone to identify themselves before raising their issues.

3.1 Matters Arising

No	Name	Comment	Response
1	Mr Ryan Donnelly FAST	He questioned if it was correct procedure for Mr Mandla Mbusi, from Eskom, the Applicant, to be translating into Xhosa. Ms Bowler agreed that this is not the ideal procedure but at the last meeting there were sufficient members in the audience to correct him when there was an incorrect translation and the same should apply to this meeting.	Ms Ball added that if Mr Donnelly objected there could be alternative arrangements made. However, Mr Mbusi understands the technicalities of the proposed project. There was a unanimous decision from the floor that Mr Mbusi continue with the Xhosa translations, and if he makes any errors, these would be pointed out by the participants.

4. PRESENTATION: SPECIALIST REPORTS

Copies of presentations are available from Mr Busakwe. Presentations can be emailed to participants upon request from ACER. Alternatively they can be downloaded from the EIA websites, **www.eskom.co.za** and http://projects.gibb.co.za under Nuclear 1 – Draft Environmental Impact Report.

5. RECORD OF ISSUES RAISED AND DISCUSSED

This section details all issues, comments and concerns, which were raised and discussed at the meeting after each presentation. Should you wish to make any corrections, please advise ACER within two weeks (i.e. 14 days) of receiving these minutes.

MARINE ECOLOGY ASSESSMENT SPECIALIST			
No	**Name**	**Comment**	**Response**
1	Mr Sidney Davids Sea Vista Resident	Mnr Davids wil weet hoe die water in die reaktor verkoel word. Tjokka word gevang verder as 3 km [van die kus af] en hy dink dus nie dit sal 'n groot effek op die tjokka hê nie. Vir hom is die die belangrikste om te weet hoe die reaktor verkoel gaan word. Translation: How exactly is the water in the reactor cooled? He understands that the water is pumped quite a distance into the sea so he does not think there is going to be a big impact on the Chokka.	Mr Theron replied that the water would remain in the reactor, which is a closed circuit. As and when the water level drops there will be more water pumped into the primary circuit but this will never be released into the environment. Ms de Villiers said that she was concerned that Mr Daniels might think this is sea water that is cooling the reactor, it is not sea water, it is freshwater. This water is de-mineralised and then it is put into the primary circuit. There is a system of water around the reactor for cooling then there is a second system of water that will make steam to drive the turbine and then there is a third system of water which cools the steam back to water. This is the water that is used from the sea. The sea water does not come into contact with the fresh water in either the system of water in the reactor or the water that forms steam to drive the turbine. The freshwater will be acquired from the desalination plant that will be constructed.
2	Mr Sydney Lamont Sea Vista Forum	Mr Lamont se vraag gaan oor die beskikbaarheid van vars water vir die verkoeling van die reaktor. Sal daar genoeg water beskikbaar wees vir al die jare wat die reaktor in werking is? Thyspunt het baie water, maar sal die werking van die reaktor nie daardie vars water affekteer en dit ongeskik maak vir menslike verbruik nie? Hy verstaan dat die reaktor by Thyspunt gebou gaan word, maar hy het in 'n visioen gesien dat mense omgekom het omdat hulle vars drinkwater gesoek het en dit nie kon kry nie. Hy verstaan ook dat	Mr Theron explained that the desalination plant has a capacity of 9 000 m^3 per day. This water will be used for the power station as well as for the construction of the plant. This will be about 9 million litres of water per day. This water will come from the sea. Ms de Villiers gave a brief explanation of how a desalinisation plant operates. Desalinisation is a process of removing salt from the sea water, which then produces fresh water.

MARINE ECOLOGY ASSESSMENT SPECIALIST			
No	**Name**	**Comment**	**Response**
		daar huise langs die reaktor gebou gaan word en wonder waar daardie mense water gaan kry. Translation: In terms of the fresh water that is going to be used, where is it coming from. What happens to the fresh water and will it still be suitable for human consumption after it is used in the reactor? Is there going to be enough fresh water on the site to be able to keep the reactor running for its lifespan. Mr Lamont understands that there is a strong need and a strong desire to build the nuclear site at Thyspunt. His concern is that he had a vision and in this vision he has visited the site with a friend and they struggled to find fresh water, he therefore wants to know if there is going to be enough water on that site for the future sustainability of the plant. He understands that there will be houses built next to the plant and where will these people get water is also a concern. Will people already living close to the plant be affected by the water?	Mnr Breytenbach: Eskom gaan glad nie huise naby die kragstasie of op die perseel van die kragstasie bou nie. Eskom will not build any houses on the site at the power station. All the houses will be built in the surrounding towns such as Humansdorp, St Francis Bay or Jeffrey's Bay. Eskom sal vir al die mense wat op die projek werk huise bou in die omliggende dorpe soos Humansdorp, St Francisbaai of Jeffreysbaai. The desalinisation plant will be built at the power station and will be used for the power station only. This water will not be used for the surrounding towns. Eskom sal al die water wat by die kragstasie ontsout word, net vir die kragstasie gebruik. Die water sal nie vir die dorpe in die omgewing gebruik word nie.
3	Mr Pieter du Plooy Sea Vista Resident	Mr du Plooy said that he is confused as freshwater is spoken about and now they are mentioning seawater.	Ms Bowler explained that seawater is pumped into the desalinisation plant, salt is then removed from this water and it becomes freshwater and that freshwater is used to cool the reactor. Therefore there will be sufficient freshwater available at all times.
4	Mr Greg Christy SA Squid Management Industrial Association	Prof Griffiths is an expert Marine Biologist but Mr Christy is concerned that there have been no experts in the Chokka/Squid Industry doing any studies on the effects of this project on the Squid Industry. This	Prof Griffiths responded that this could be the most serious environmental impact if the power station is built on this site. The current report has information about the area and volume of sand that will be pumped into the sea as well as the area it

MARINE ECOLOGY ASSESSMENT SPECIALIST			
No	**Name**	**Comment**	**Response**
		industry employs the fishermen in this area. Mnr Christy is bekommerd dat alhoewel prof Griffiths 'n spesialis in mariene biologie is, daar geen spesialiste of eksperts uit die tjokka-industrie by die studies betrek is nie. Hulle is gevolglik steeds baie bekommerd oor die effekte wat die projek op die tjokkabedryf gaan hê, wat werk verskaf aan vissermanne uit die area. Mr Christy is concerned that 32% of the Chokka is caught in this area. Eskom will be pumping 65 million cubic metres of sand into the sea. This will be pumped up to the 30 m mark which is where the squid lays its eggs. In 5 – 8 years time, the bottom of the sea will have 15 cm of sludge and sediment in this area. A squid scientist has done research that has shown that squid do not breed in the area where there is turbidity. Mr Christy is bekommerd dat 32% van die tjokka vangs uit die area kom wat deur die konstruksie geraak sal word. Eskom gaan 65 miljoen kubieke meter sand in die see inpomp. Dit sal tot op die 30-meter merk gepomp word, waar die tjokka hul eiers lê. Binne 5 tot 8 jaar sal daar 15cm afsaksel in die area wees. 'n Wetenskaplike wat kennis dra van tjokka het navorsing gedoen wat wys dat tjokka nie broei waar troebelheid vorkom nie. A bigger concern than the hot water issue, is the turbidity that is going to be caused by the soil that is going to be pumped out into the sea. The squid will	would effect. the report did not have good information about the exact percentage of squid that will be affected. This has been discussed with Prof. Warrick Sauer, a scientist with expertise in this field, and his input will be incorporated into the final specialist report.

MARINE ECOLOGY ASSESSMENT SPECIALIST			
No	**Name**	**Comment**	**Response**
		not spawn and avoid this area. There is a high percentage of squid that occurs in this area and this will have a detrimental impact on the squid industry in this area. The majority of the community in this area is involved in the squid industry and depends on it. Mr Christy added that if the industry lost this area, the squid industry would become unviable and will have to close down. Ons is baie bang dat ons in hierdie area nooit weer tjokka gaan vang nie. 'n Groter bekommernis as die warm water uittroming is die sand wat hulle gaan uitpomp na die see gedurende die bou van die kragstasie wat groot probleme vir die tjokka bedryf gaan veroorsaak. Ons gaan nie daar kan tjokka vang vir die volgende 10 – 15 jaar nie. Die tjokkabedryf is die een bedryf waarop hiedie gemeenskap staatmaak. Die tjokkabedryf is nie lewensvatbaar sonder hierdie area nie, aangesien 'n groot gedeelte van die tjokka hier gevang word.	
5	Mr Etienne Coenraad	In 1972 was hierdie gemeenskap deel van die groter vissergemeenskap van St Francis Baai en is as 'n gemeenskap gestig. 'n Mens is baie bekommerd namens jou gemeenskap oor die slegte effekte wat hierdie projek nou gaan hê op die visbedryf oor die volgende 18 of 19 jaar. Waar moet hulle nuwe weivelde vir die visbedryf gaan soek en wat gaan van hulle toekoms word? Translation: The Chokka industry has been in	Prof Griffiths replied that Mr Christy had explained the worst case scenario of what might happen. No-one really knows exactly what percentage of chokka stock in the area was going to be affected. It is also unknown whether the stock will completely disappear or whether they will move to an adjacent area which is not affected by the power station. More information is required regarding the squid industry. If there is a complete negative impact that threatens the entire industry then the power station will have to be built in another area. The decision to build must be based on good data.

MARINE ECOLOGY ASSESSMENT SPECIALIST			
No	**Name**	**Comment**	**Response**
		existence since 1972 in the St Francis Bay community. one is concerned about what is going to happen to the community because of the impacts of the nuclear power plant over the following 18 – 19 years. Where will they go for greener fishing pastures. They do not have a sustainable community into the future if the Chokka industry closes down. Hoe lank sal die boutydperk (konstruksiefase) duur en watte tipe inpak gaan dit hê? Hoe lank sal dit duur, indien dit wel gaan gebeur, voordat die tjokkabedryf homself sal kan hervestig? Ms Bowler asked how long a period would the Chokka industry be affected during the construction period, if the project goes ahead and how long would it take the squid industry to re-establish itself.	Die professor sê niemand weet nog presies wat gaan gebeur indien die kragstasie hier gebou word nie. Dit is nie bekend presies watter persentasie van die tjokka hier voorkom nie, en of hulle sal verdwyn of net oorbeweeg na 'n ander area wat nie deur die projek geraak word nie. As hierdie impak so drasties en so ersntig is dat die hele tjokkabedryf negatief beinvloed gaan word moet daar definitief gekyk word of die kragstasie hier gebou word. Moontlik sal die kragstasie dan op 'n ander plek gebou moet word. Hulle moet die besluit baseer op baie goeie data.
6	Mr Alwin Malgas Sea Vista Forum	Mnr Malgas sê die span was die vorige maand by Sea Vista en hy het vrae oor die vis bedryf gevra wat nog nie beantwoord is nie. Hy wil weet wanneer gaan hulle ware antwoorde kry. <u>Translation:</u> a concern is that a month ago a team was at Sea Vista, there were issues about the Chokka industry raised, and Mr Malgas is not happy that his questions still cannot be answered tonight despite the professor being present at this meeting. He wants to know when the team is going to give substantive answers.	Prof Griffiths admitted that the report did lack information but he had now got the additional information, which would be added to his report. Prof Griffiths het gesê dat hulle wel bewus is dat daar nog inligting is wat wel nie in die verslag is nie. Vanoggend was daar 'n vergardering waar belangrike inligting vir hom gegee is wat hy verder moet bestudeer. Mr Greg Christy het hierdie belangrike informasie vir die professor gegee. Hierdie informasie moet nou in die verslag ingevoeg word om 'n volledige verslag te kan opstel.
7	Ms Nomalungelo Ndengwane	In this community of Sea Vista, 15% of the community are working in the fishing industry and 85% are unemployed. This must be considered. If the project is	Mev Bowler sê dat dit nie Prof Griffiths se werk is om hierdie vraag te beantwoord nie. Hierdie kwessie gaan oorgehou word en vir die sosiale spesialis gevra word om dit te antwoord.

MARINE ECOLOGY ASSESSMENT SPECIALIST			
No	**Name**	**Comment**	**Response**
		going to help many of the people to get jobs, it should be allowed to go ahead as it will create many more jobs. Last year the fishermen stayed here for a year, marching and toy-toying for benefits; until today they are working without benefits. Maybe Eskom will help these people, they might get employed and have benefits. Translation: Mev Ndengwane sê dat net 15% van die mense in Sea Vista betrokke is en kry werk deur die tjokkabedryf en 85% van die mense is werkloos. Sy sê dat sy bekommerd is dat daar soveel aandag gegee word aan die tjokkabedryf omdat daar verlede jaar getoy-toy is deur die vissemanne, wat nie volledige voordele in die tjokka bedryf kry nie . Sy vra die vraag, indien Eskom die kragstasie bou ,gaan daar nie meer mense wees wat van daardie voordele gebruik gaan maak as hulle werk kan kry in daardie gebied nie?	Ms Bowler said that this was not in the specialisation of Professor Griffiths and that this question would be held over for the social specialist.
8	Mr Edward Busakwe Sea Vista Resident	Take people to Koeberg and they will be happy to see for themselves what is happening in a Nuclear Power Station. Meeting after meeting will not help the Sea Vista residents. If the government said that they want to build a nuclear plant, we can say whatever we say, it will be built. He questioned why people are worried about fish and not worried about the people who are murdered in this country. The farmers are being murdered every day but nobody is taking up that issue; even in Sea Vista there has been murder, but no one worries about that. Mr Busakwe requested everyone to stick to the point. For example if the government decides to build a	Ms de Villiers said that Eskom had been asked on numerous occasions if the community leaders could go to the Koeberg Nuclear Power Station (Koeberg). There has been approval given for some community leaders to visit to Koeberg. However, during the time of the FIFA World Cup, there is now a level 2 security on all power stations which means that no visitors are allowed on any of the powers station sites throughout the country. That is to make sure that during this important time nothing goes wrong with the electricity. All staff must make sure that the stations run efficiently. Leaders from the communities will be taken to Koeberg after the World Cup. Mev de Villiers het gesê dat daar ‘n paar keer gevra is of Eskom leiers van die gemeenskap na Koeberg toe sal vat om te sien

MARINE ECOLOGY ASSESSMENT SPECIALIST			
No	**Name**	**Comment**	**Response**
		nuclear power station, they will build it. He says that they have lost the battle to stop abortion, government has stated that that could happen. Some individuals are benefiting, the ones that carry out the abortion, Some are going there to murder their babies. He also made an example of the scenario of taking electricity from the white peoples' mansions and giving it to the squatter camps, then you will hear a different noise. He also referred to the 25 years of safety monitoring of the environment, the sea, the wild life at Koeberg Nuclear Power Station. He said that if that had been monitored successfully for 25 years so why not build a Nuclear Power Station and for that matter Koeberg is still there. Everyone can go to Koeberg and see for themselves what is happening at Koeberg.	hoe Koeberg lyk. Eskom het ooreengekom en dit gaan wel gedoen word, maar dit gaan nie nou gedoen word nie. Gedurende die Fifa Wêreldbeker is daar hoer vlakke van sekuriteit om seker to maak dat absoluut niks met die krag verkeerd gaan nie. Na die Fifa Wêreldbeker sal daar wel gereël word dat die leiers van die gemeenskap Koeberg toe gevat sal word.
9	Mohamed	Mohamed is a local resident and asked if this is an initiative and a partnership with government, could Eskom give excess water from the desalinisation plant to the surrounding local community. Could this request be forwarded to government so that the surrounding communities would benefit. There are shortages of water in this area and in the country.	Mr Breytenbach: Eskom's mandate is to supply electricity to South Africa, they do not supply anything else. The desalinisation plant is used to supply water to the nuclear plant. They will not supply water to outside communities. If government want to tap in to the desalinisation plant to supply water to local communities, they are more than welcome but this will not be done by Eskom. The desalinisation unit that will be erected at the power station will have a capacity of 9 000 m^3 per day, that will be used during the construction period. Once the plant is in operation, Eskom will only use 6 000 m^3 per day, there will therefore be spare capacity of 3 000 m^3. The spare capacity will be used as back-up for the power station.
10	I&AP Sea Vista Public Meeting	Ons is ingelig dat daar 'n 9-jaar bouperiode is waartydens die tjokka-industrie geaffekteer gaan word. Wat ons nog nie weet nie, is wat die impak sal wees na die nege jaar verby is. Dis nie net 'n kwessie van die verwarmde water wat uitgepomp word nie. Is	Prof Griffiths replied that during the operational phase there would be no sediment and no sand pumped into the ocean. The desalinated effluent will be mixed with a much larger amount of cooling water and then will be pumped back into the sea. The salt content of that water will be slightly higher and will not affect

MARINE ECOLOGY ASSESSMENT SPECIALIST			
No	**Name**	**Comment**	**Response**
		daar enige ander afval wat deur die kernkragsentrale geskep gaan word en in die see sal beland? Translation: There will be a 9-year construction period during which the chokka industry will be impacted. What happens during the operational phase? It is not just a question of the heated water that is pumped out, but is there actually any additional waste that is generated by the nuclear plant that will be pumped out into the sea?	fish or any other marine life. There will be heated water mixed with the brine from the desalination plant. There will be chlorine which will be mixed into the water and will also be pumped out. Prof Griffiths said the figures were all stipulated in the report. Prof Griffiths said that the final conclusion of the marine report was that Koeberg was the preferred site from a marine biological perspective. Ms de Villiers said there are small amounts of radioactive effluent waste that are pumped into the sea but these are strictly controlled by the NNR who set the limits on what this has to be. However, Koeberg has never released anything near the figure allowed. Mev de Villers verduidelik dat die NNR reguleer hoeveel raioaktieve afval Eskom in die see mag uitpomp en dit is 'n baie klein hoeveelheid. By Koeberg is daar nooit naastenby daardie hoeveelheid afval uitgepomp in die see nie.
11	I&AP Sea Vista Public Meeting	Is hierdie model kragstasie wat Eskom in Thyspunt wil bou, dieselfde model as wat by Koeberg is? Translation: Is the model that is proposed to be constructed at Thyspunt the same as the one at Koeberg.	Mr Theron said that the power station would be different to the one at Koeberg. It would have more safety features and is more advanced than Koeberg. Ms Ball explained that from an environmental perspective Nuclear-1 is very similar to Koeberg. it will be a Pressurised Water Reactor (PWR), but they do not know yet which vendor Eskom will use. The EIA examined an envelope of criteria, which would cover any type of PWR that Eskom would be interested in contracting for.

SOCIAL IMPACT ASSESSMENT SPECIALIST			
No	**Name**	**Comment**	**Response**
1	Ms Elmarie Jamaar Sea Vista Resident	Sy was baie bekommerd oor die veiligheid van die skoolkinders op die paaie. Wat werk [geleenthede] betref, is hierdie die soort van plek waar party mense weet van werk en die ander mense weet glad nie van die werk nie. Hoekom sal hierdie stasie hierso gebou word en nie by Coega nie? Sy het op TV gehoor kernkraq is baie belangrik vir Coega. Kan ons asseblief weet hoeveel werks geleetheede daar sal wees. Mense wat nie geleerd is gaan nie werk kry nie en hoveel werksgeleenthede sal daar wees vir construksie werkers. Daar is nie infrastruktuur in hierdie area nie. <u>Summary and translation</u>: She is concerned about the safety of the school children on the roads. As for job opportunities, this is the kind of place where some people know about jobs that are available, while others do not hear about the jobs at all. Why has the decision to build the power station at Thyspunt been made by Eskom? She has heard on Fokus on Television that the electricity that is going to be generated is going to be used by Coega. To clarify how many jobs are potentially going to be	Ms Ball replied that the Traffic and Transportation Specialist, in conjunction with the Social Specialist will examine the issue of school children's safety and recommendations will be made regarding pedestrian bridges over the various roads. <u>Translation</u>: Mev Ball antwoord dat die verkeer- en vervoerspesialis saam met die sosiale spesialis ondersoek sal instel na die kwessie van skoolkinders se veiligheid en dat aanbevelings gemaak sal word i.v.m. voetgangersbrûe oor die verskillende paaie. Ms Ball replied that from the beginning of the EIA it has been made quite clear that the whole country needs electricity. 40 000 MW are needed by 2025 and about 20 000 of this Eskom would like to be nuclear. The Integrated Resource Plan of Government is going to decide if the country must build additional nuclear power stations. The sites were taken from the Nuclear Site Investigation Program (NSIP), which was started in the 1980s, and this took about 10 years to complete. The coastline of South Africa was investigated and various sites were examined. 5 sites along the coast were eventually selected. One of the most important criteria is that the site has to be stable in terms of seismic risk (earthquake risk). During 2008 Brazil and Schulpfontein sites in the Northern Cape were excluded because the transmission infrastructure would be a problem, there was not a high demand for electricity in the Northern Cape and there was a lack of infrastructure in the area. Coega has been investigated and a decision will be made soon about this site. The biggest problem is the seismic investigations still have to be done, which will take 5 or 6 years.

SOCIAL IMPACT ASSESSMENT SPECIALIST			
No	**Name**	**Comment**	**Response**
		created and how many will be specialised, needing qualifications, and how many construction workers will be needed. There is no proper infrastructure in this area.	It might be a site for the future but it is not feasible for Nuclear-1. Translation: Mev Ball antwoord dat dit van die begin van die OIB duidelik gemaak was dat die hele land elektrisiteit nodig het. Teen 2025 sal 40.000MW nodig wees en Eskom wil hê dat 20,000MW hiervan van kernkrag moet wees. Die besluit om met kernkrag voort te gaan sal in die Geintergreede Energieplan uitgele word wat in Julie 2010 sal uitkom vir publieke komentaar. Die Geïntegreerde Energieplan sal bepaal hoeveel van die krag wat voorsien moet word in die toekoms van kernkrag moet kom, en hoeveel van steenkool en van ander kragbronne. Die terreine is bepaal deur 'n voorafgaande studie wat in die 1980's al langs die Suid Afrikaanse kus begin het en wat uituidelik 5 verskillende terreine langs die kus uitgeken het. In die vorige fase van die studie is daar besluit dat 2 van die terreine in die Noord-Kaap nie geskik is nie omdat die die bou van die kraglyne 'n problem skep en daar is ook nie 'n groot aanvraag vir krag in daardie gebied nie en darr is ook 'n tekort aan infrastuktuur. Tweedens is dit moeilik om die krag van die Noord-Kaap af te kry na die Oos- en Wes-Kaap. Eskom wil graag 'n kragstasie in die Oos-Kaap bou omdat daar 'n groot aanvrag vir krag in hierdie gebied is. Coega is as 'n alternatiewe terrein ondersoek. Die probleem met hierdie terrein is dat daar nie inligting bekend is oor die aardbewingsrisiko nie. Verdere studies wat van 5 tot 6 jaar sal duur, moet nog gedoen word.
2	Mr Sydney Lamont Sea Vista Forum	Hy verstaan uit wat gesê is dat daar 'n aantal werksgeleenthede gaan wees, byvoorbeeld by die bouwerk en om goed te verkoop vir die mense wat gaan intrek. Hoeveel gaan dit wees? Hy dink die munisipaliteit moet ingelig word, want die munisipaliteit moet dienste verskaf.	Mnr Dippenaar sê daar is soos wat genoem is 8,000 werksgeleenthede wat ter sprake is. Daar word geskat dat die hoeveelheid konstruksie-werksgeleenthede vir ongeskoolde en semigeskoolde werkers 'n goeie 5,000 werdsgeleenthede sal wees. Die spesifieke details oor hoeveel mense nodig is om spesifieke werke te doen is onbekend. Voordat daar met

SOCIAL IMPACT ASSESSMENT SPECIALIST			
No	**Name**	**Comment**	**Response**
		Translation: How many jobs are there going to be? Mr Dippenaar did refer to vendor's jobs and supplier's jobs and what is going to be potentially the overall figure of additional jobs that are going to be created. He feels that the municipality must be informed of this development as they will have to provide services for all of this,	konstruksie begin word, moet Eskom sê hoeveel werksgeleethede beskikbaar is vir spesifieke take, bv. 100 verwers, 200 lorriebestuurders, ens. Mense wat nie die nodige vaardighede het nie, sal dan die geleentheid hê om daardie vaardighede te probeer bekom. Translation: What is important is that before construction begins Eskom should provide details on exactly how many employment opportunities will be available and in what categories. Eskom must list their requirements in detail. This will enable people who do not have the required skills to try and obtain these skills. The community will also know exactly what type and how many jobs are available. Mr Dippenaar replied that a project such as the construction of a nuclear plant should not be undertaken to solve the existing social problems in the area. The local, provincial or national authority must take responsibility in solving the existing problems. Mnr Dippenaar antwoord dat 'n projek soos die bou van 'n kragstasie nie aangepak moet word om die bestaande sosiale problem in die omgewing op te los nie. Die plaaslike, provinsiale of nasionale regering moet verantwoordelikheid neem mom die bestaande problem op te los.
		Mnr Lamont vra of dit nodig sal wees om meer skole te bou weens die potensiële ontwikkeling. Translation: will there be a need to build more/new schools because of the potential development?	If there are many people coming into the area there might be additional 2 500 children that may require schooling. 2 500 children cannot be added to the existing schools as they cannot even cope with the existing number of learners. Presently the learner/teacher ratio is 1:60. Therefore, whether it be hospitals,

SOCIAL IMPACT ASSESSMENT SPECIALIST			
No	**Name**	**Comment**	**Response**
			clinics, schools, etc. the same will apply. When additional infrastructure is needed in order to cater for the increase in the number of people coming to work on the project, and the authorities lack funds to supply the additional infrastructure, Eskom will contribute towards this infrastructure. Indien daar baie nuwe mense na die omgewing kom, kan die huidige infrastruktuur – die bestaande skole, klinieke en sportfasiliteite – dit nie hanteer nie, want hulle is alreeds oorvol. Byvoorbeeld, in sekere gevalle is die onderwyser-tot-leerlingverhouding 1:60. Die gedagte is nie dat hierdie projek in die eerste plek die bestaande probleme moet oplos nie. Dit is die verantwoordlikheid van die huidige owerheidsdepartemente. Enige toevoegins soos byvoorbeeld die moontlikheid dat 2,500 kinders skole mag nodig hê, kan maak dat die bestaande skole nie hierdie addisionele kinders kan hanteer nie. Daarom is dit belangrik dat die owerhede verantwoordelik vir verder skole, onderwysers en klinieke ensovoorts neem. Waar die plaaslike owerhede nie daarin kan slaag om die nodige fondse beskikbaar te stel nie, sal Eskom van hulle kant die probleem sal aanspreek. Mr Theron explained that an example is the current project at Lephalale the Medupi project. This is a 4,800 MW coal station that is under construction. Eskom have established an information centre where the public can find out more about the project. Eskom has improved all the existing infrastructure in the area, they have improved the school facilities, they have built additional schools, they have investigated which type of small businesses can be established within the communities. Eskom has erected a laundry where one of the community members runs this business where the overalls are washed. Washing

SOCIAL IMPACT ASSESSMENT SPECIALIST			
No	**Name**	**Comment**	**Response**
			machines have been sponsored. They have created washing facilities for the trucks. Eskom has also provided transport in a range of 70 – 75 km to transport people to the site. These are the types of infrastructure developments that have occurred at Medupi. A medical facility was also constructed and Eskom assisted the local authority to improve their existing medical facility in the area. These are examples, which can be used as an indication of what could happen in this area. <u>Translation</u>: Wat in Lephalale by Medupi gebeur het is dat Eskom besef het dat die plaaslike owerheid en die gemeenskappe nie die nodige fondse het nie en daarom het Eskom die nodige skole en ander fasiliteite gebou of uitgebrei het.. Hulle het ook mense gehelp om klein besighede, soos die was van oorpakke en vragmotors, op die been te bring. Eskom het ook gehelp om vervoer te verskaf vir so ver as 70 km vir persone wat by die kragstasie werk. 'n mediese fasiliteit is ook gebou en Eskom het die plaaslike owerheid gehelp om die bestaande mediese fasiliteit in die omgewing te verbeter Dit is voorbeelde wat 'n aanduiding gee van wat moontlik ook in hierdie area kan gebeur.
		Mr Lamont wil weet hoe en waneer die plaaslike oeverheid (die munisipaliteit) hulle gesigte gaan wys want hy voel hulle speel wegkruip op die oomblik. Hulle kom sit nie om die tafel sodat die res van die gemeenskap kan sien hoe hulle betrokke is by hierdie prosess. <u>Translation</u>: Concerns raised were that many of the mitigation measures recommended by the Social Specialist	Mr Dippenaar het verduidelik dat binne die Kouga Munisipaliteit se ontwikkelingsraamwerk (die beplanning van die gebied se ruimtelike ontwikkeling) het hulle reeds voorsiening gemaak vir die moontlikheid van 'n kernkragsentrale. Die munisipaliteit is dus reeds bewus daarvan en hou daarmee rekening. Enige ontwikkeling wat plaasvind, of dit 'n gebou is, 'n kernkragsentrale, of 'n residensiële huis is, word binne die ontwikkelingsraamwerk vir hierdie soort goed beplan en voorsiening gemaak. Dit is deel van die normale proses van ingenieursbeplanning en normale proses van stads- en streeks-

SOCIAL IMPACT ASSESSMENT SPECIALIST			
No	**Name**	**Comment**	**Response**
		involves the local municipality and how are they going to become involved and have they got the capacity.	beplanning. Daar is sekere onduidelikhede wat op hierdie stadium nog nie by hulle opgelos is nie. Byvoorbeeld, as daar 'n konstruksiedorpie moet wees, presies waar moet hy sit en hoe groot moet hy wees. Dit hang af van hoeveel mense binne die plaaslike gebied werksgeleenthede gaan kry, en hoeveel mense van buite die gebied huisvesting moet kry. Daar moet ook nog gesien word in watter mate vervoer gebruik gaan word om mense aan te ry na die perseel, en dit word beïnvloed deur hoeveel mense daar gaan bly. Wanneer daar besluit word op die finale plek waar gebou gaan word, moet die munisipaliteit bepaal presies hoeveel grond nodig is en watter water en ander dienste nodig is. Eers wanneer hierdie inligting bekend is kan die munisipaliteit in detail praat oor die ontwikkeling. Translation: Mr Dippenaar explained that the Kouga Municipality had a spatial development plan in which all development was laid out and this had already taken into account the possibility of the construction of a nuclear power station. Any building, house or industry was taken up in this plan and this was a normal part of the process of town and regional planning. There are still uncertainties surrounding this project such as where the construction village should be and how big it will have to be. This will all depend on how many people will get jobs in the area and how many of them will have to be accommodated. Transportation will also have to be looked at and how many people will need to get to the construction site. The municipality will only be able to plan once the decision is made to go ahead with construction and then more detail will be given
3	Mr Edward Busakwe	Mr Busakwe said that the municipality was here some time last month and they made a presentation that the houses that were going to accommodate the influx of	Ms Ball said that this was the first time she had heard about any housing in this area as she has been told the housing would be at Humansdorp.

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No	**Name**	**Comment**	**Response**
		people that would be coming to work on the nuclear site would be alongside the R330 and the N2. Mr Busakwe confirmed that this is the Humansdorp area. Ms Bowler said that in terms of consistency with information that is being presented to the study team, to Eskom and to the public to make sure that there is a co-ordination of information.	Ms Ball asked Mr Busakwe for the name of the person who gave the presentation so that clarity can be obtained from the Municipality. Ms Ball added that Arcus GIBB and Eskom had held a meeting with the Municipality, and nothing about housing was mentioned. **<u>Post-meeting Note</u>** **The contact detail of the person who gave the presentation is:** **Mr Elvis Olivier** **Manager: Housing** **Kouga Municipality** **Tel: 042 200 2200** **Cell: 082 651 0145** **Arcus GIBB will follow-up with Mr. Olivier to obtain clarity regarding proposed housing to accommodate the potential influx of people into the area.**
4	Mohamed St Francis Bay Resident	Mohamed stated that the team and Eskom have done the feasibility study and had shown tonight what this was all about. He would like this project to continue and he gave his good wishes for the future of the project. This is the type of project that is needed in the area. This presentation has proved to them that this will benefit the communities in the area. There has been opposition to Eskom at the meeting but he is impressed that this is the correct way forward.	Ms Ball said that she and Mr Heydenrych represented Arcus GIBB and not Eskom. There were in fact 24 specialist studies and they do not all agree with one another. The six volumes were written by Arcus GIBB and the specialists and arising from this a recommendation has been given. There have been many requests for extra time to review the studies and she asked the community to read the Executive Summary. This is a complicated study. Hard copies of the presentations given will be made available; these would be given to Mr Edward Busakwe who will distribute them. Should there be a change in the closing date for comment, everyone

SOCIAL IMPACT ASSESSMENT SPECIALIST			
No	**Name**	**Comment**	**Response**
			will be notified. Translation: Mev Ball en Mnr Heydenrych is van Arcus GIBB en nie van Eskom nie. Arcus GIBB is onafhanklik en kyk na die voorstelle wat die spesialiste gemaak het. Die studies wat by hierdie vergadering voorgelê is net twee van 24 verskillende spesialisstudies. Daar is Xhosa, Afrikaans en Engelse samevatings van die verslag.. Mnr Heydenrych het almal uitgenooi om hulle te lees. Die voorleggings gaan almal beskikbaar wees en Edward Busakwe sal hulle versprei. Daar mag moontlik 'n verlenging wees van die kommentaarperiode. Hulle sal die mense in kennis stel as dit wel gebeur.
5	Ms Thobeka Petse Sea Vista Forum	She stated that she was pleased with the discussions that took place at the meeting. She emphasised that all role players need to come together, the local municipality and Eskom, provincial and national government, so that there can be clear outlines of who is responsible for what. If role players are not accepting responsibility during these discussions, there might be problems later on during implementation.	Mr Theron said that previously it had been mentioned that exploratory discussions were held with the Local Municipality. Approval must be obtained for the project before Eskom can move ahead and have detailed discussions with the municipalities and authorities. This also means the results from the Integrated Resource Plan must be taken into consideration.
6	Mr Mwasi	Is the 25% local employment for Sea Vista or is that for Oyster Bay? The most important area is Oyster Bay and Sea Vista because there is a lack of employment in these areas. Jeffrey's Bay has many companies and more opportunities for employment, whereas in this area there are very few opportunities. She said that if this development were in Jeffrey's Bay the community living in Jeffrey's Bay would get	Ms Ball said that the social specialist study had recommended the 25 %. Mr Dippenaar explained that "local" would have to be defined. Was this within 20 km, 50km, 80km of the area of the municipal boundary. This is something that needs to be discussed with all the communities. Irrespective of what is said, 25 % is considered to be the minimum that must come from local. If 60% or 70% or even 80% can come from the local area it would be even better. There will not be less than 25%.

SOCIAL IMPACT ASSESSMENT SPECIALIST			
No	**Name**	**Comment**	**Response**
		preference. The same should apply for Sea Vista and Oyster Bay. They would make sacrifices in order to get jobs.	Wat beteken “plaaslik”: is dit binne 20 km, 50 km, 80 km van die Kouga Munisipale gebied? Die 25% is die minimum persentasie van die werknemers wat uit die plaaslike gemeenskap moet kom. Indien dit meer kan wees – 60%, 70% of dalk 80% – sal dit net soveel te beter wees. Mr Dippenaar said that there must be a component of fairness in terms of people acquiring employment opportunities. Dit gaan oor wat is regverdig: daar is sekere behoeftes wat mense wil graag wil aanspreek in Oesterbaai en Kaap St Francis en Sea Vista. Mr Dippenaar said lack of employment was not a criterion when employment was being carried out. Once it is clear that this would be the preferred site and that these are the kind of job opportunities that would be available then one would start looking at different areas and ascertaining how many people would qualify for the different jobs.

6. WAY FORWARD – DISCUSSION

No	Name	Comment	Response
1	Mr Ryan Donnelley FAST	Mr Donnelley said that his concern is the snail's pace of the meeting. He does not believe that the residents were given sufficient opportunity to be a part of the process. He suggested separate meetings be held in Xhosa, English and Afrikaans. <u>Response from a local resident</u> Sy dink nie dit is die regte ding om verskillende vergaderings te hê nie. Dit sal 'n groot problem veroorsaak in die gemeenskap, waar dit reeds soms gebeur dat dinge gereël word en dan weet die kleurlinge die een kant en die swart mense die ander kant. Dit is hoekom die mense wat teenwoordig is sê dat daar een vergadering moet wees.	Ms Ball replied that a great effort had gone into this meeting in terms of advertising and the right date and time. If there were any further suggestions about how such community meetings could be improved, all suggestions would be most welcome. Ms Bowler said that it was her experience that if people are separated they feel excluded. She then asked if it was better to have an integrated meeting even though it is slower but the whole community understands each other. Ms Bowler asked for a show of hands if people would like separate meetings for English, Afrikaans and Xhosa. ***Response: All Sea Vista residents present at the meeting indicated that they prefer combined meetings and were happy with the current format of the meetings.***
2	Mr Ryan Donnelly FAST	Mr Donnelly's recommendation to Eskom: Eskom should build a gas power station at Coega to deal with the lack of electricity in the Eastern Cape while they assess the Kouga site. They can build a nuclear power station at another site because Thyspunt is not the right site.	Noted.
3	Ms Bowler The Facilitator	Regarding Mr Donnelly's concern that Sea Vista residents are not free to ask questions, Ms Bowler asked the participants if they felt they had had the freedom to ask their questions and do the community know how to raise their issues with the public participation consultants or the team. Mej Bowler sê daar is 'n bekommernis dat nie al die kwessies by hierdie vergadering geopper word nie, Sy wil seker maak dat almal voel dat hulle 'n kans gegun	Mr Busakwe responded by saying that the question can never be answered the same because there is a huge difference - people come from different areas, backgrounds and different schools of thought. There are people who are well established and have their own interests in this process. There are other people who still need to develop themselves. If you were to ask what people want – they would inform you that they want jobs.

No	Name	Comment	Response
		word om hul vrae te vra, en indien dit nie by die vergadering kan gebeur nie, dat hulle weet hoe om op ander maniere met die openbare deelnamespan kontak te maak.	
4	Mr Ryan Donnelley For A Safe Tomorrow	His concern is that people do not understand the reports as they are not in Xhosa so how can they submit issues. Ms Bowler questioned if the written media is the correct way of explaining the reports, are smaller focus groups not what is needed to integrate and get the message to the community?	Ms Ball said that a draft EIR was supplied to the community admittedly in English but Executive Summaries have been supplied in Xhosa, Afrikaans and English. If the community would like any of the other specialists to consult with them this could be arranged. Sea Vista residents indicated that they preferred meetings to written reports as some residents would not be able to read the reports.
5	EIA Team	They asked Sea Vista Residents if they are happy with meetings being held during the week or they would prefer weekends, e.g. Saturday.	There was a unanimous response from the Sea Vista residents that meetings during the week (**as currently has been the case with the EIA**) are preferred.

7. CONCLUDING REMARKS

Ms Bowler encouraged everyone to submit their questions and comments, if they have problems with writing, they could speak to Mr Edward Busakwe who will ensure that their comments are recorded. Ms de Villiers indicated that if the questions have not been raised out of the meeting, the questions could still be sent back to the team via Mr Busakwe.

Ms Shinga said that there were comment sheets available and Mr Edward Busakwe is the local contact person for Sea Vista Community and would gladly assist anyone with raising issues. The community was informed that if they would like to contact ACER telephonically, they could phone from Mr Busakwe's office and ACER would pay for the calls. The comment sheets are in English, Xhosa and Afrikaans and can be obtained from Mr Busakwe's office. The deadline for the submission of comments is 31 May 2010, which might be extended. All registered members of the public would be notified once the extension has been granted.

ATTENDANCE LIST

Surname	First Names	Title	Co/Org	Sea Vista Meeting 25 May 2010
Barratt	Christopher & Valda	Mr & Mrs		Attended
Breytenbach	Johann	Mr	Eskom Holdings Limited	Attended
Brown	Daniel	Mr		Attended
Busakwe	Edward	Mr	Seed of Abraham Church	Attended
Davids	Sidney	Mr		Attended
Donnelly	Ryan	Mr	For A Safe Tomorrow	Attended
du Plooy	Pieter	Mr		Attended
Elton	Edmund & Bridget	Mr & Mrs		Attended
Feni	Ntomboxolo	Mr/s		Attended
Fillis	Peter	Mr		Attended
Goede	Simon	Mr		Attended
Greeff	Gert	Mr	Eskom Holdings Limited	Attended
Jamaar	Elmarie	Mej	UCKG	Attended
Joka	Khululwa	Mr		Attended
Jujuju	Ntombizanele	Miss		Attended
Katos	TW	Miss		Attended
Christy	Greg	Mr	SA Squid Management Industrial Association	Attended
Lamont	Sydney	Mr	Sea Vista Forum	Attended
Leen	Petrus	Mr	Sea Vista Forum	Attended
Madikane	Gladys	Mrs		Attended
Mahoyi	Wandisile	Ms		Attended
Malan	Trudi	Ms	Thyspunt Alliance	Attended
Maleki	Ntomboxolo	Miss	Sea Vista Forum	Attended
Malgas	Alwyn	Mnr	Sea Vista Forum	Attended

Surname	First Names	Title	Co/Org	Sea Vista Meeting 25 May 2010
Maqunga	Godfrey	Mr		Attended
Matsha	Thembinkosi	Mr		Attended
Mkupa	Ohgama Kidwell	Mr		Attended
Mtshembe	Mzwabantu	Mr		Attended
Mzanywa	Mnikeli	Mr	Sea Community Member	Attended
Ndungana	Bongo	Mr		Attended
Nelana	Loyiso Desmond	Mr		Attended
Nodendwa	BP	Mr		Attended
Ntengwane	Cynthia	Mrs		Attended
Petse	Thobeka	Miss	Sea Vista Forum	Attended
Popose	Nosipho Florence	Miss		Attended
Sibeno	Kholiseka Paula	Mrs		Attended
Thembela	Mabel	Miss	Sea Vista Forum	Attended
Theron	Mervin	Mr	Eskom Holdings Limited	Attended
Tsoba	F	Miss		Attended
Visagie	Audrey	Ms		Attended

ESKOM HOLDINGS LIMITED

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR A PROPOSED NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE DEA REF. No.:12/12/20/944

EIA Phase Public Meeting:
Review of Draft Environmental Impact Report

March / April 2010

PROPOSED AGENDA

1. Sign attendance register, tea and coffee: 17:00 – 17:50
2. Welcome and introductions: 18:00 – 18:10
3. Presentation of EIA and EMP findings: 18:10 – 19:00
4. Discussion: 19h00 – 19:50
5. Way forward and closure: 19:50 – 20:00

MEETING CONDUCT

- Please wait for the discussion session to ask questions
- Introduce yourselves prior to asking a question and indicate your specific interest
- You are welcome to ask the question in your mother tongue. Presentations will be in English
- One person at a time
- Work through the facilitator
- Show respect
- Focus on the issue not the person
- Be constructive
- Agree to disagree

Please switch off all cell phones!

MEETING OBJECTIVES

- **The focus of the meeting is to provide an opportunity for Interested and Affected Parties (I&APs) to comment on the findings of the EIA and the Draft Environmental Impact Assessment Report (EIR). The Draft EIR makes recommendations with regards to the authorisation and siting of Nuclear-1**
- **Provide an opportunity for I&APs to seek further clarity on the proposed project, the EIA phase and the Draft EIR**
- **Provide I&APs with an opportunity for interaction with the EIA team**
- **Recording of issues - the proceedings will be recorded and used to compile meeting minutes. Comments will be included in the Issues and Response Report (IRR) and changes will be made to the Final EIR, where necessary**

KEY ISSUES

- People are opposed to a nuclear power station at Bantamsklip
- Grave concerns about the impacts of nuclear power station on human health, in particular children and future generations
- Serious concerns about safety during operation – the Chernobyl failure and far reaching impacts were quoted by many
- Hazardous waste that will be generated and storage were raised as serious concerns for which there are not acceptable solutions yet

KEY ISSUES

- People of the Overberg District share a deep-felt connection to the area and have a strong “sense of place.” Most put forward their plight for preservation and conservation of pristine coast line.
- Flora, fauna and ecosystems attract local and international tourists and a nuclear power station at Bantamsklip will have severe, irreversible and adverse impacts on ecosystems

KEY ISSUES

- Marine life could be adversely affected by altered sea temperature and turbulence caused by in flow and output of sea water to the plant
- Commercial and recreational fishing will be negatively impacted
- Light pollution
- Hermanus will loose its economic income if tourism stops as a result of whales retiring from this coast line due to warmer ocean temperatures

KEY ISSUES

- Nuclear power stations are expensive to build
- Generating nuclear power is a threat to people’s security, because if anything should go wrong, the consequences are catastrophic
- Some people expressed a lack of trust in the trustworthiness of the EIA

KEY ISSUES

- **A nuclear power station will be unsightly and cause visual pollution**
- **Concerns about drop in property values**
- **Some support for nuclear power stations, but not in this area**
- **Many favour green ways to generate power, e.g., wind, solar and/or tidal power generation**
- **Concern that many 1st world countries seem to be moving away from nuclear power – why does Eskom pursue nuclear power generation**

PROPOSED ACTIVITY

- Eskom proposes the construction, operation and decommissioning of a conventional nuclear power station and associated infrastructure either in the Eastern or Western Cape
- A nuclear power station of the Pressurised Water Reactor (PWR) type technology e.g. Koeberg Power Station
- The transmission power lines are subject to separate environmental authorisation processes

TRANSMISSION (TX) LINE EIAs

- Bantamsklip – Scoping phase has been extended to include Multi-stakeholder Workshops and additional public consultation. Revised Draft Scoping Report will be made available for public comment
- Thyspunt – Scoping Report accepted by Authorities and EIA phase has commenced
- Duynefontein – Scoping Report accepted by Authorities and EIA phase has commenced

PROJECT BACKGROUND

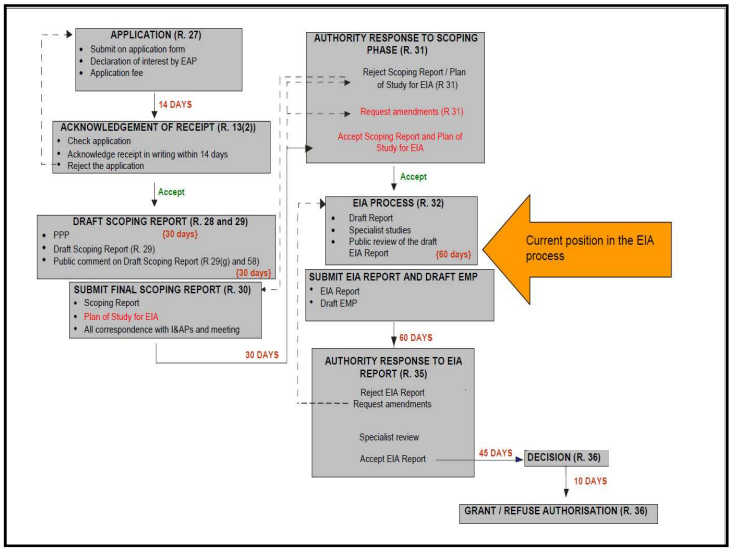
- **The power station and directly associated infrastructure will require approximately 31 ha. The footprint assessed makes provision for the potential future expansion of a power station, to 10 000 MW or the maximum carrying capacity, should this be technically feasible**
- **The proposed nuclear power station will include nuclear reactor, turbine complex, spent fuel, nuclear fuel storage facilities, waste handling facilities, intake and outfall pipelines, desalinisation plant and auxiliary service infrastructure**
- **Should the proposed project be authorised, it is anticipated that construction of the station could commence in 2011 with the first unit being commissioned in 2018**

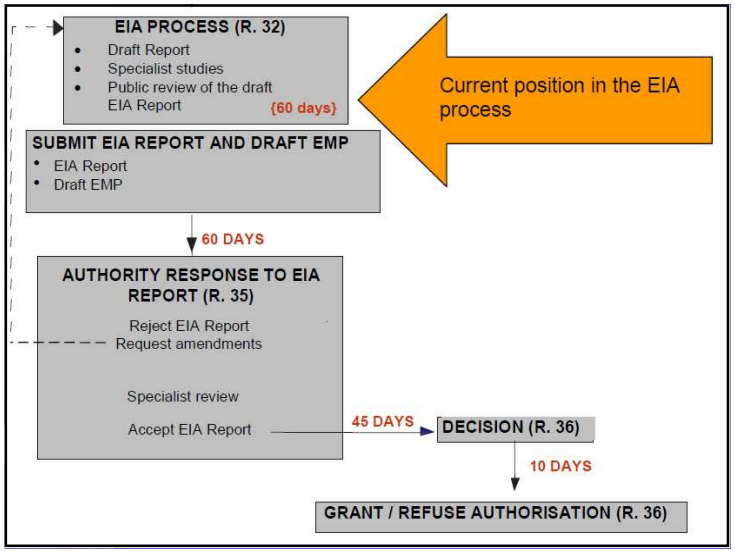
PROJECT MOTIVATION

- Increasing demand for electricity (> 4% growth per annum)
- Projected requirement for more than 40 000 MW of new electricity generating capacity over the next 20 years
- Need to consider aspects such as cost, lead time for construction, potential environmental impacts and operating characteristics relative to peaking and base load power generation
- In SA only coal and nuclear power are used for base load generation, while gas turbines, hydroelectric power stations and pumped storage schemes are used for peaking and emergency electricity generation

ENVELOPE OF CRITERIA

- Detailed description of proposed nuclear plant is not available, as preferred supplier has not been selected
- Approach used has been to specify enveloping environmental and other relevant requirements, to which the power station design and placement on site must comply
- Enveloping criteria represent the most conservative parameters associated with the various plant alternatives within the available PWR technology





SCOPING PHASE

EIA process comprises the Scoping and EIA phases

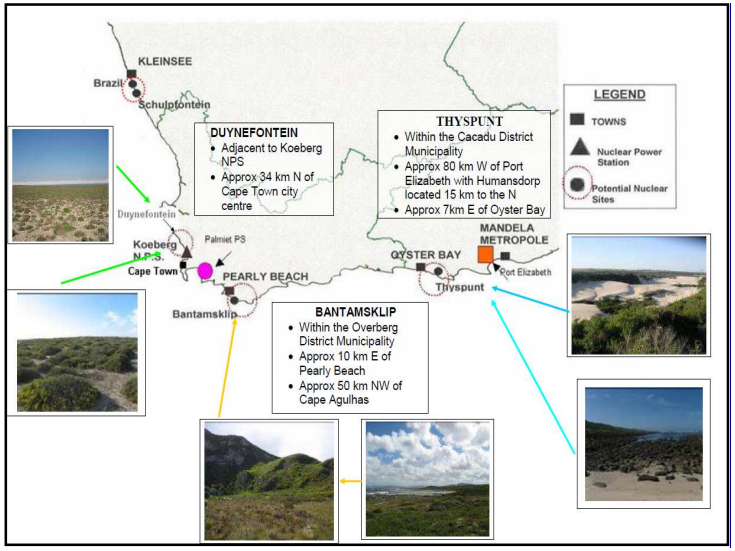
- **Approval of the Scoping Report**
  - **Application was submitted to the Department of Environmental Affairs (DEA) in May 2007 and amended in July 2008 for a single nuclear power station of up to 4 000 MW**
  - **DEA approved the Scoping Report - November 2008**
  - **In mid 2009, after publication of the amended EIA Regulations, Eskom announced that it was considering amending its application to include more than one nuclear power station. Eskom subsequently decided not to pursue the amendment of the application**

SCOPING PHASE

- **In line with Eskom's intention to investigate the potential development of up to 20 000 MW of nuclear power generating capacity an application for the second nuclear power station may be submitted soon after the submission of the Final EIR for Nuclear-1**
- **Approval of the Plan of Study for EIA**
  - **The Plan of Study (PoS) for EIA was made available for two rounds of public comment**
  - **DEA approved Final PoS for EIA - January 2010**
  - **The Scoping phase of the EIA process is complete**

SITE SELECTION

- Five alternative sites were assessed during the Scoping phase: Brazil, Schulpfontein, Duynefontein, Bantamsklip and Thyspunt
- Approval of the Scoping Report by the DEA included the recommendation that two of the alternative sites assessed (Brazil and Schulpfontein), be excluded from further consideration in the EIA
- Exclusion was based on the fact that the sites would not constitute reasonable and / or feasible site alternatives for Nuclear-1 based on limited local demand and the lack of existing electricity transmission corridors



SPECIALIST STUDIES

- **Potential impacts (negative and positive) were assessed by various independent specialists**
- **The potential impacts assessed were based on:**
  - Issues identified by I&APs during the public participation process (PPP)
  - Issues identified by specialists through research
  - Experience of relevant specialists with projects of a similar nature or in a similar environment
  - Consultation with local specialists
  - Environmental resources and conditions identified by specialists during site surveys

SPECIALIST STUDIES

- **Physical Impacts**
  - Geology and geological risk
  - Seismological risk
  - Geo-hydrology
  - Geotechnical characteristics
- **Biophysical Impacts**
  - Dune geomorphology
  - Flora
  - Fauna
  - Hydrology
  - Freshwater ecosystems
  - Oceanographic conditions
  - Marine biology
  - Air quality
  - Assessment of the1:100 year floodline

SPECIALIST STUDIES

- **Socio-economic Impacts**
  - Social
  - Economic
  - Noise
  - Visual
  - Heritage and cultural resources
  - Waste
  - Tourism

SPECIALIST STUDIES

- **The impacts of high and medium significance after mitigation were considered important for decision-making**
- **The key factors for decision-making:**
  - Transmission integration factors
  - Seismic suitability
  - Impacts on dune geomorphology
  - Impacts on wetlands
  - Impacts on vertebrate fauna
  - Impacts on invertebrate fauna
  - Economic impacts

SELECTED SPECIALIST STUDY RESULTS

- **Seismological Risk**

Seismic studies indicate that the design basis for the respective sites in terms of peak ground acceleration values (PGA) are as follows:

  - Duynefontein – PGA ~0.30 g
  - Bantamsklip - PGA ~0.23 g
  - Thyspunt - PGA ~0.16 g

SELECTED SPECIALIST STUDY RESULTS

- **Seismological Risk**
  - Thyspunt demonstrates considerably lower risk with respect to any future variations arising from additional studies
  - Depending on the outcomes of the process, possible subsequent deviations from a standard nuclear power station design, which is more likely to be the case for Bantamsklip and Duynefontein, will result in potentially significant cost and time delays to Nuclear-1 should it be authorised

SELECTED SPECIALIST STUDY RESULTS

- **Impacts on Dune Geomorphology**
  - Groundwater does not 'daylight' at the Duynefontein or Bantamsklip sites. There are no potential impacts related to the interaction between groundwater and dune dynamics at these sites
  - Access roads and transmission lines can be built across the mobile dunes at the Duynefontein and Bantamsklip, with potential negative operational impacts ranging from medium to low significance

SELECTED SPECIALIST STUDY RESULTS

- **Impacts on Dune Geomorphology**
  - Access roads and transmission lines at Duynefontein can be built across the artificially vegetated and vegetated parabolic dunefields with low potential operational impacts after rehabilitation. In both cases, mobile dunes in the vicinity of infrastructure would need to be artificially stabilised
  - The interaction between dune systems and wetlands is complex at Thyspunt, since groundwater 'daylights' in many inter-dune areas. The dune dynamics interacts with wetlands, groundwater and surface water. Disturbance of the Oyster Bay dunefield may cause significant secondary negative potential impacts on wetlands without mitigation

SELECTED SPECIALIST STUDY RESULTS

- **Impacts on Dune Geomorphology**
  - As a result of the location of the proposed construction of transmission lines, haul roads and conveyor belts between the nuclear power station in the south and the HV yard in the north, the negative potential impacts on dune geomorphology at Thyspunt are more extensive than at the other two sites

SELECTED SPECIALIST STUDY RESULTS

- **Impact on Flora**
  - Bantamsklip will experience the least potential negative impact on plant communities and species, as the ecosystems on this site are fairly common along this section of coastline, provided that the power station is situated on the eastern half of the EIA corridor, away from the limestone fynbos
  - Thyspunt has by far the greatest diversity of vegetation communities, including extensive and highly sensitive wetlands

SELECTED SPECIALIST STUDY RESULTS

- **Impacts on Wetlands**
  - The development of a nuclear power station at Duynefontein is unlikely to result in any unmitigable, highly significant negative impacts on wetlands
  - Development of the proposed nuclear power station at Bantamsklip would not be associated with any unmitigable impacts to wetland systems
  - The Thyspunt wetland systems are complex and potential negative impacts could occur without appropriate mitigation

THYSPUNT WETLANDS

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: Wetlands on site Thyspunt

Legend
HVY Corridor
EIA corridor
Wetlands
0 0.5 1 2 Kilometers
1:50,000
N
GIBB

SELECTED SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Vertebrates**
  - The amount of land that is not of high faunal sensitivity at Duynefontein is more than sufficient for the nuclear power station
  - At Bantamsklip the nuclear power station would have significant negative potential impacts, without mitigation, because of the impacts on faunal habitats within the footprint
  - At Thyspunt a nuclear power station would have significant potential negative impacts, without mitigation, because of the direct impacts on faunal habitats within the footprint, the development of two major new access roads, and the need for a development corridor across a large mobile dunefield

SELECTED SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Invertebrates**
  - The potential impacts of the nuclear power station on the terrestrial invertebrate communities are very similar for all alternative sites, but there are site-specific differences
  - None of the butterflies occurring in the Cape Flats Dune Fynbos area around Duynefontein are endangered or endemic
  - Non-vegetated and partially vegetated portions of the site are of very low and low sensitivity, respectively.
  - The new species of ant found at Duynefontein is regarded as a generalist and is likely to be found on other areas of the site

SELECTED SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Invertebrates**
  - Thyspunt has the highest butterfly diversity and conservation value of the alternative sites. Thyspunt is identified as higher sensitivity than Duynefontein, and only marginally lower than Bantamsklip
  - From the viewpoint of potential positive impacts of the nuclear power station, Duynefontein already positively benefits under the management of Eskom, which means that it would experience the least improvement in conservation status
  - Bantamsklip and Thyspunt would benefit substantially from formal protection status. The project would have a potential net positive impact on invertebrate communities at Bantamsklip or Thyspunt

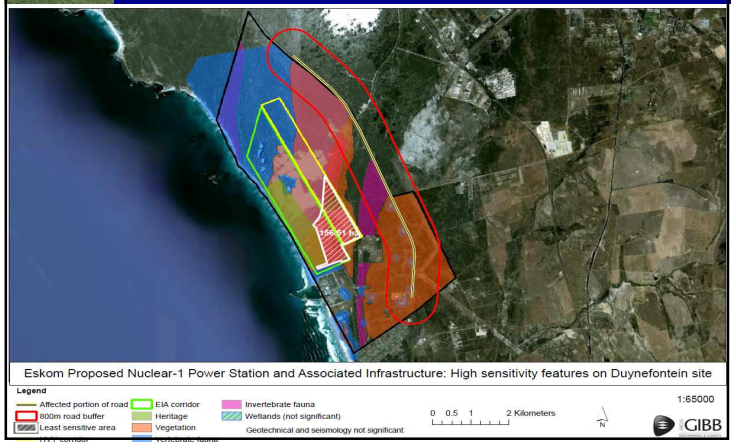
SELECTED SPECIALIST STUDY RESULTS

- **Economic Impacts**
  - The overall positive macro-economic impacts will be greatest at Bantamsklip and Duynefontein, and less at Thyspunt, as the sites are situated in a province with a larger, more diversified economy. Nuclear-1 would result in less dislocation of economic activities if located at Duynefontein than at either of the other two sites
  - Macroeconomic indicators favour Duynefontein and Bantamsklip
  - The cost-effectiveness analysis indicates that Thyspunt has a very slight edge over Duynefontein and a somewhat larger edge over Bantamsklip. The differences between the alternative sites are slight, and all the sites would have large positive economic impacts both on the local area and the province in which they are situated
  - The economic impact assessment gives greater weight to the cost-effectiveness analysis

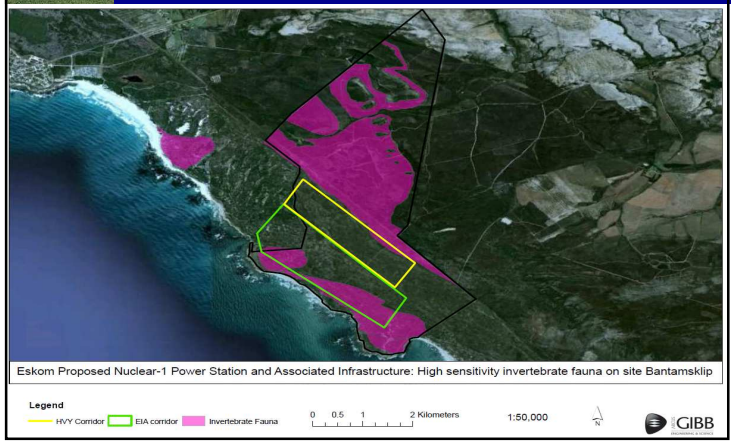
SELECTED SPECIALIST STUDY RESULTS

- **Heritage Impacts**
  - All alternative sites contain significant heritage resources. The amount of Late Stone Age heritage that will be potentially impacted at Duynefontein will be substantially less than that of Bantamsklip and Thyspunt
  - Duynefontein is palaeontologically highly sensitive. Bantamsklip is almost as sensitive as Thyspunt in terms of its heritage richness

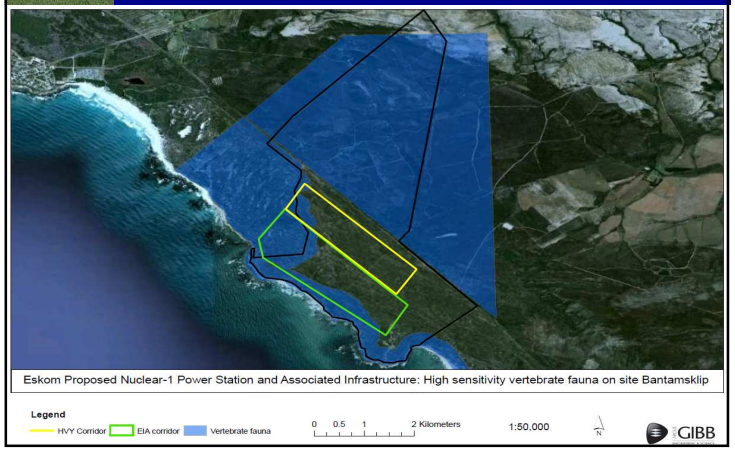
Site Sensitivity: Duynefontein – Combined Sensitivity



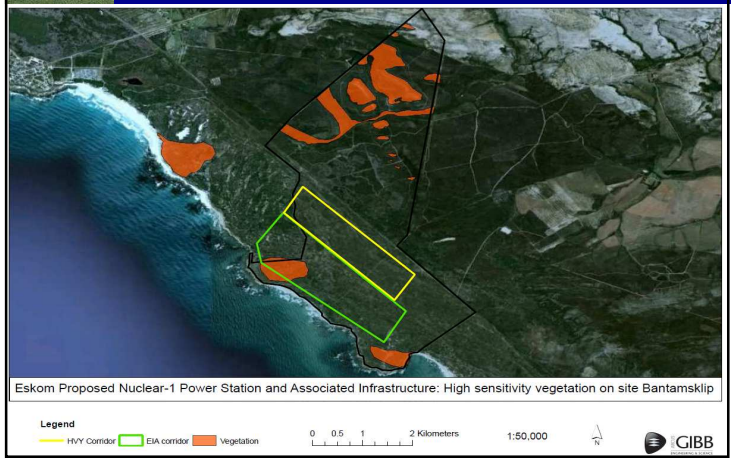
Site Sensitivity: Bantamsklip – Invertebrate Fauna



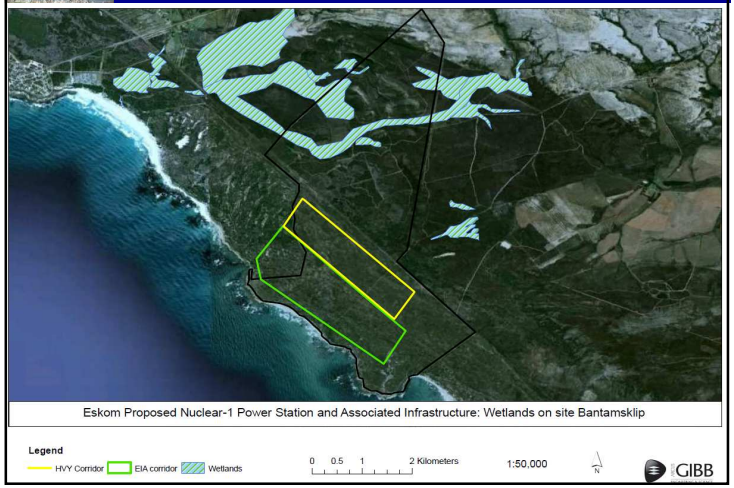
Site Sensitivity: Bantamsklip – Vertebrate Fauna



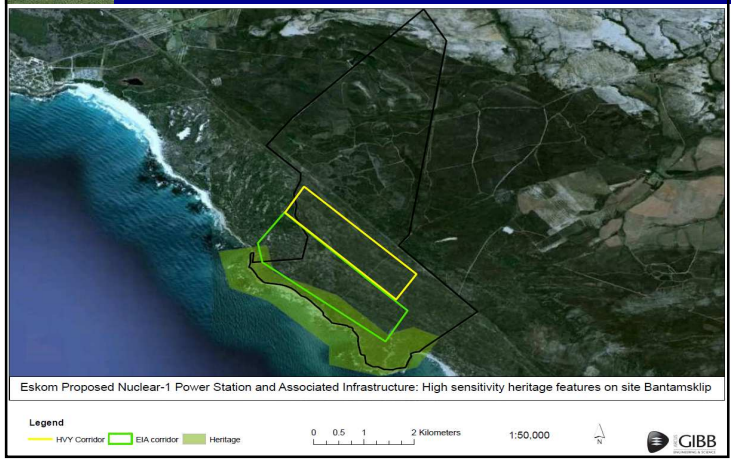
Site Sensitivity: Bantamsklip – Flora



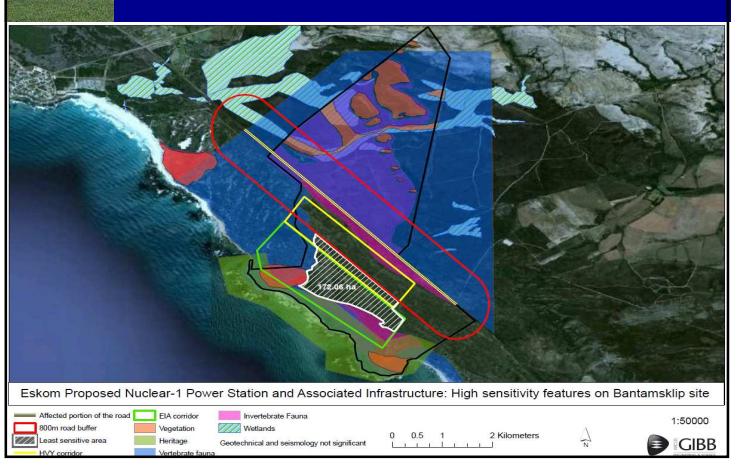
Site Sensitivity: Bantamsklip – Wetlands



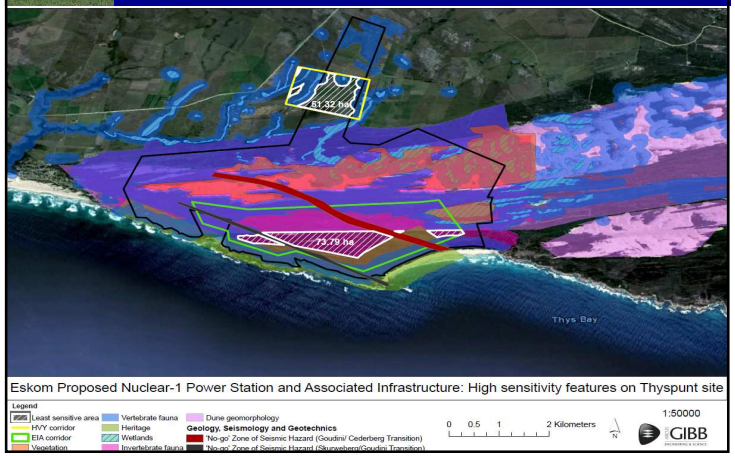
Site Sensitivity: Bantamsklip – Heritage



Site Sensitivity: Bantamsklip – Combined Sensitivity



Site Sensitivity: Thyspunt – Combined Sensitivity



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity features on Thyspunt site

Legend
Least sensitive area
HV/Y corridor
EIA corridor
Vegetation
Vertebrate fauna
Heritage
Wetlands
Invertebrate fauna
Dune geomorphology
Geology, Seismology and Geotechnics
'No-go' Zone of Seismic Hazard (Goudini/ Cederberg Transition)
'No-go' Zone of Seismic Hazard (Skurweberg/Goudini Transition)

0 0.5 1 2 Kilometers

1:50000

GIBB

TRANSMISSION INTEGRATION

- Electricity generated needs to be transmitted from the high voltage yard at the power station through a complex network of high voltage transmission lines and then through a series of distribution lines of ever decreasing voltage, until it reaches the end user
- The ease with which electricity produced at the power station can be 'integrated' with the rest of the transmission system is dependent on a number of technical factors

TRANSMISSION INTEGRATION

Eskom transmission system design philosophy is to connect new base load generation to the closest load, where possible

Transmission integration requirements are:

- System reliability and quality of supply
- Integration considerations
- Future potential for generation in each of the provinces

PROJECT ALTERNATIVES

- Forms of power generation
- Nuclear plant types
- Layout of the nuclear plant
- Fresh water supply and utilisation of abstracted groundwater
- Management of brine
- Intake of sea water
- Outlet of water
- Management of spoil material
- Access to Thyspunt
- Waste
- The no-development alternative (i.e. 'No-Go')
- Location of the power station

FORMS OF POWER GENERATION

- Nuclear generation and coal-fired power generation are the only proven base-load technologies
- Coal-fired generation is not viable in the coastal regions of the Western and Eastern Cape
- The life cycle contributions of nuclear electricity generation to greenhouse gas emissions is small compared to coal-fired electricity generation
- Renewable energy sources such as solar and wind energy do not provide the guaranteed base-load generation capacity that is required

NUCLEAR PLANT TYPES

- Pressurised Water Reactors (PWRs) are internationally the most commonly used nuclear reactors
- The existing Koeberg nuclear power station uses PWR technology, making it a tested form of power generation that has been operating safely for the past 24 years
- Eskom is familiar with the technology from a health, safety and an operational perspective

NUCLEAR PLANT LAYOUT

- Sensitivity maps of all specialist studies were integrated and composite maps were produced to indicate areas of high environmental suitability for each alternative site
- Finalisation of the site layout plans will require detailed investigations, in conjunction with the relevant qualified and experienced specialists

FRESH WATER SUPPLY AND UTILISATION OF ABSTRACTED GROUNDWATER

- At all sites desalination provides a guaranteed source of fresh water supply for the lifespan of the proposed nuclear power station without jeopardising the availability of fresh water to other users
- A desalinisation plant is therefore the preferred alternative for the provision of fresh water at all sites

MANAGEMENT OF BRINE

- The disposal of brine into the sea and the co-disposal of brine and cooling water into the sea is environmentally acceptable
- Disposal of brine directly into the sea should be utilised only during construction
- Brine should be mixed with cooling water that is discharged into the sea during the operational phase

INTAKE OF SEA WATER

- The installation of intake and outlet tunnels that obtain water from the ocean and feed cooling water into a storage area located adjacent to the cooling water pump houses is the only feasible alternative for all sites

OUTLET OF WATER

- Outlet structures for cooling water and chemical effluent must be offshore
- All releases need to occur at the distances prescribed by the relevant specialists
- Provided that the specific mitigation measures identified in the marine biology report are adhered to, offshore effluent release is the recommended alternative

MANAGEMENT OF SPOIL MATERIAL

- Fine spoil must be disposed of in the marine environment at all sites
- Spoil material that cannot be pumped to sea, must be disposed of on land and used for activities like levelling of the HV yard and to minimise the footprint on the terrestrial environment
- Spoil dumps on land must be placed and shaped so that they fulfil a visual screening role and must be designed to minimise their visual impact
- Transport of spoil to the panhandle at Thyspunt via conveyor belt is not recommended due to the sensitive and unique Oyster Bay mobile dune system across which such transport would have to take place

ACCESS TO THE THYSPUNT SITE

- The Eastern Access Route is required by Eskom for heavy loads and there is no alternative to this route
- The Western Access Route is favoured over the Northern Access Route, with respect to the potential impacts on agriculture, flora, wetlands, dune geomorphology and heritage resources
- The Northern Access Route is favoured only in terms of visual impacts
- Taking all potential impacts into account, the Western Access Road is the preferred access road for the Thyspunt site

WASTE

- The only feasible alternative for the disposal of Low-Level and Intermediate-Level radioactive waste is disposal at the Vaalputs nuclear waste disposal site,
- Vaalputs is the only authorised facility for this form of waste in SA. Vaalputs has sufficient capacity for the waste that will be generated by Nuclear-1
- With regards to High-Level Waste (spent fuel), the only alternative currently available in SA is long-term storage of the spent fuel in the nuclear power station
- Vaalputs is being considered as a disposal site for High-Level Waste, but the required authorisation processes for this will take several years, so currently the disposal of spent fuel at this facility is not a feasible alternative

NO-DEVELOPMENT ALTERNATIVE

- Given the urgent power demand in South Africa, the No-Go alternative is not considered to be an alternative, as Eskom's mandate is to provide power for the country
- Eskom would likely apply to develop more coal-fired power stations if the current application is declined as coal-fired generation is the only feasible base load alternative
- The life-cycle environmental impacts of coal-fired power generation are much greater than nuclear-fuelled power generation

NO-DEVELOPMENT ALTERNATIVE

- The No-Go alternative would imply that potential benefits that emanate from the proposed project would not be realised
- If Eskom does not utilise Bantamsklip and Thyspunt for nuclear development, it is likely to sell the properties
- The sale of the properties will be to a willing buyer at the market-related price, which would result in an alternative form of land use that will in all probability be more damaging than a nuclear power station and may not involve managing the majority of the properties as nature reserves

LOCATION OF THE POWER STATION

- Evaluation of alternatives was based on specialist assessments and the results of the specialist integration workshop
- Ranking of the sites was based on:
  - Results of the specialist studies: specialists indicated the significance of potential impacts, with mitigation, at each of the sites
  - An integration workshop, involving all specialists, where ranking of the sites was discussed
  - Cost
  - Transmission integration requirements

IMPACT IDENTIFICATION AND ASSESSMENT

- **The table that follows indicates the weighting assigned to the potential impacts of high and medium significance (after mitigation). These impacts should have the greatest influence on decision making**
- **Impacts that have the same significance at all the sites were filtered out, as they provide no basis for choice**
- **Both to reduce the number of decision factors to a manageable number and to ensure that responsible trade-offs can be made between impact categories that give contrasting recommendations regarding the preferred site, the categories of potential impacts were weighted in order to select a recommended site**

IMPACT IDENTIFICATION AND ASSESSMENT

Key decision-factors for selection of the preferred site alternative:

Specialist discipline	Weighted value
Transmission integration factors	**4**
Geo-hydrology	1
Seismic suitability	**4**
Impacts on flora	1
Impacts on dune geomorphology	**3**
Impacts on wetlands	**3**
Vertebrate fauna	**2**
Invertebrate fauna	**3**
Marine ecology	1
Heritage impact	1
Noise impacts	1
Tourism impact	1
Agricultural impact	1
Social impact	1
Economic impact	**3**

IMPACT IDENTIFICATION AND ASSESSMENT

A number of factors indicate that Bantamsklip cannot be regarded as a preferred alternative when compared with the other two alternative sites:

- Substantially higher construction costs due to its remote location (requirements for upgrading of roads and bridges and lengthy transmission lines)
- Cumulative environmental impacts of the transmission corridors
- Potential impacts on invertebrate fauna

Bantamsklip is regarded as the least preferred site alternative

IMPACT IDENTIFICATION AND ASSESSMENT

- The most important argument in favour of Thyspunt in terms of biophysical impacts is the conservation benefits realised through access control and active management of the site if a nuclear power station is constructed there
- This benefit would not be realised at Duynefontein, as the Koeberg Private Nature Reserve already includes Duynefontein
- Thyspunt has a considerably lower seismic risk profile and is favourably located in terms of Eskom's requirements for integration with the transmission system
- Thyspunt is therefore recommended for authorisation in terms of this application
- It is acknowledged that the Thyspunt site would experience environmental impacts of higher significance (particularly biophysical impacts) than Duynefontein. However, the conservation of the remainder of the site through access control and responsible long-term conservation management are significant positive impacts associated with this site

KEY MITIGATION MEASURES

- The findings of the technical specialist studies undertaken provide an assessment of both the benefits and negative impacts anticipated as a result of the proposed project
- Although Thyspunt is recommended as the preferred site for authorisation, there remain a number of key negative impacts of potentially high significance at this site
- In order for the negative impacts to be mitigated, it is imperative that the recommendations for mitigation contain in the EIR, the specialist studies and the Environmental Management Plan (EMP) be implemented

MITIGATION MEASURES FOR THYSPUNT

- Mitigation measures for botanical impacts, vertebrate and invertebrate fauna, wetlands and heritage resources are particularly important
- Mitigation of heritage impacts will require the work of a site-specific team dedicated to excavations over a period of several years prior to construction

MITIGATION MEASURES FOR THYSPUNT

- Qualified and experienced botanical, wetland, vertebrate and invertebrate fauna, dune geomorphology and heritage specialists will need to find an acceptable final access route alignment
- Additional groundwater studies are necessary to better understand the interaction between groundwater and wetlands

CONCLUSIONS AND RECOMMENDATIONS

An assessment of key criteria indicates that Thyspunt is preferred (with a score of 76 as opposed to Duynefontein's score of 57) due to:

- Lower seismic risk
- Benefits in terms of transmission integration
- Site's locality relative to the Port Elizabeth load centre
- Potential overall positive conservation benefits of the majority of the site, as well as additional land, being managed for conservation purposes

WAY FORWARD

- Comment Period – 6 March to 10 May (66 days)
- Public meetings and key stakeholder workshops will be held around the sites assessed from 23 March to 21 May. Minutes of meetings will be sent to attendees
- Comments received will be addressed in the Issues and Response Report in the Final EIR
- Final EIR will be submitted to the DEA for consideration and decision-making
- Final decision regarding EIA will be communicated to registered I&APs
- Construction of Nuclear-1 is subject to other approvals e.g. the NNR site safety decision and transmission lines EIA authorisations

WAY FORWARD

Written comments can be submitted by:

- Post: Public Participation Office, Nuclear 1 EIA, PO Box 503, Mtunzini, 3867, SA
- Fax: +27 (0) 35 340 2232
- Email: nuclear1@acerafrica.co.za

THANK YOU

ESKOM HOLDINGS LIMITED

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR A PROPOSED NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE DEA REF. No.:12/12/20/944

EIA Phase Public Meeting:
Review of Draft Environmental Impact Report

March / April 2010

Slide 1

PROPOSED AGENDA

1. Sign attendance register and discussion with team: 17:00 – 17:50
2. Welcome and introductions: 18:00 – 18:10
3. Presentation of EIA and EMP findings: 18:10 – 19:00
4. Discussion: 19h00 – 19:50
5. Way forward and close: 19:50 – 20:00

Slide 2

MEETING CONDUCT

- Please wait for the discussion session to ask questions
- Introduce yourselves prior to asking a question and indicate your specific interest
- You are welcome to ask the question in your mother tongue. Presentations will be in English
- One person at a time
- Work through the facilitator
- Show respect
- Focus on the issue not the person
- Be constructive
- Agree to disagree

Please switch off all cell phones!

Slide 3

MEETING OBJECTIVES

- The focus of the meeting is to provide an opportunity for Interested and Affected Parties (I&APs) to comment on the findings of the EIA and the Draft Environmental Impact Assessment Report (EIR)
- Provide an opportunity for I&APs to seek further clarity on the proposed project, the EIA phase and the Draft EIR
- Provide I&APs with an opportunity for interaction with the EIA team
- Recording of issues - the proceedings will be recorded and used to compile meeting minutes. Comments will be included in the Issues and Response Report (IRR) and changes will be made to the Final EIR, where necessary

Slide 4

KEY ISSUES

- Some people are opposed to and others are in favour of a nuclear power station at Bantamsklip, Thyspunt and Duynefontein
- Concerns about the potential impacts on human health and safety
- Local residents share a deep-felt connection to the area and have a strong “sense of place”
- A power station could potentially be unsightly
- Tourism is linked to conservation and preservation of the coastline

KEY ISSUES

- Marine life could potentially be adversely affected by altered sea temperature and turbulence caused by inflow and output of sea water to the plant
- Concern that commercial and recreational fishing may be negatively impacted
- Light pollution
- Concerns about potential drop in property values
- Concern about cost of constructing a power station
- Some people expressed a lack of trust in the EIA
- Storage of hazardous waste
- Renewable (‘green’) energy (e.g. wind, solar) vs. nuclear

PROJECT MOTIVATION

- Increasing demand for electricity (> 4% growth per annum)
- Projected requirement for more than 40 000 MW of new electricity generating capacity over the next 20 years
- In SA only coal and nuclear power are solutions for base load generation, while gas turbines, hydroelectric power stations and pumped storage schemes are used for peaking and emergency electricity generation

PROPOSED ACTIVITY

- Eskom proposes the construction, operation and decommissioning of a conventional nuclear power station and associated infrastructure either in the Eastern or Western Cape
- A nuclear power station of the Pressurised Water Reactor (PWR) type technology e.g. Koeberg Power Station
- The transmission power lines are subject to separate environmental authorisation processes

TRANSMISSION (TX) LINE EIAs

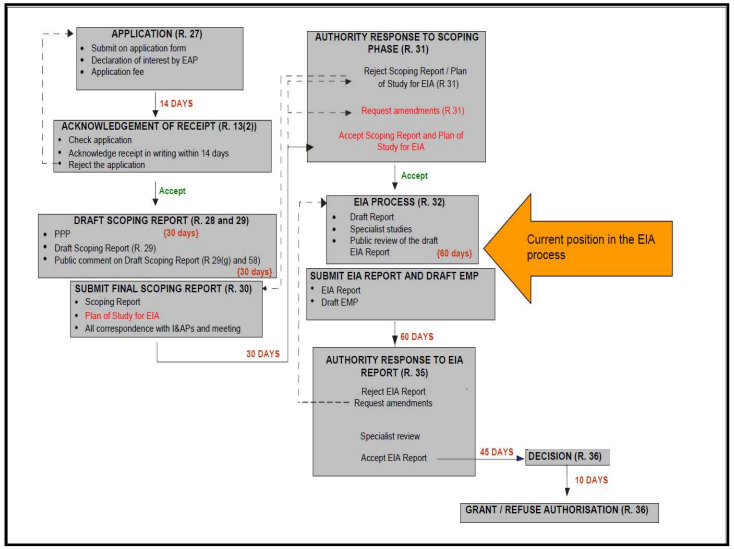
- Bantamsklip – Scoping phase has been extended to include Multi-stakeholder Workshops and additional public consultation. Revised Draft Scoping Report will be made available for public comment
- Thyspunt – Scoping Report accepted by Authorities and EIA phase has commenced
- Duynefontein – Scoping Report accepted by Authorities and EIA phase has commenced

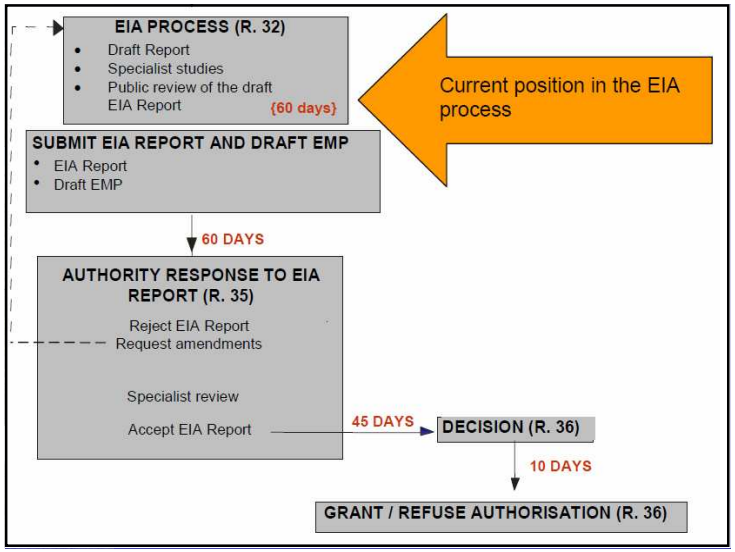
PROJECT BACKGROUND

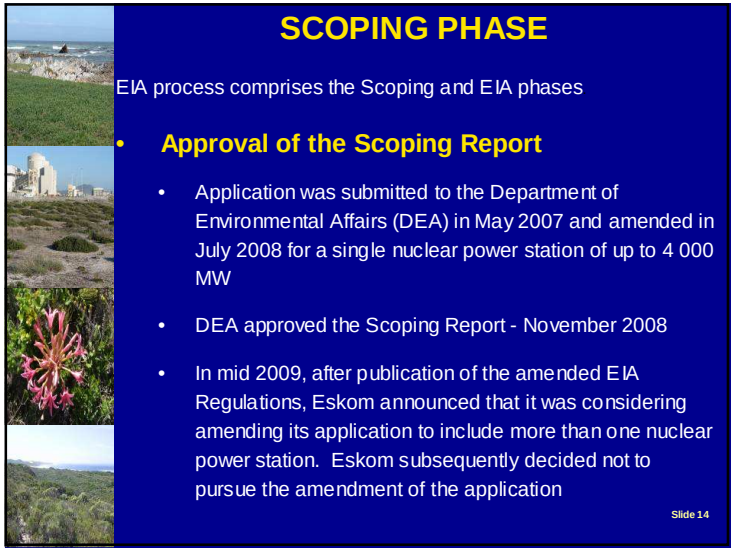
- The power station and directly associated infrastructure will require approximately 31 ha
- The footprint assessed makes provision for the potential future expansion of a power station, to 10 000 MW or the maximum carrying capacity
- The proposed nuclear power station will include nuclear reactor, turbine complex, spent fuel, nuclear fuel storage facilities, waste handling facilities, intake and outfall pipelines, desalinisation plant and auxiliary service infrastructure
- Should the proposed project be authorised, it is anticipated that construction of the station could commence in 2011 with the first unit being commissioned in 2018

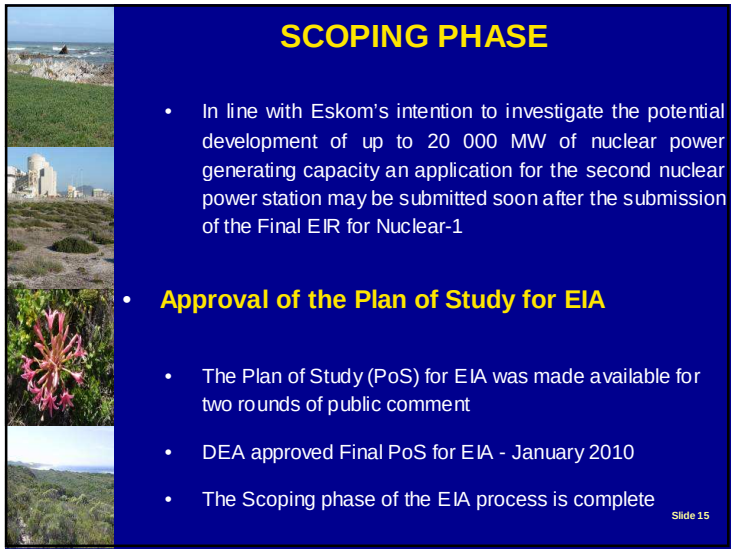
ENVELOPE OF CRITERIA

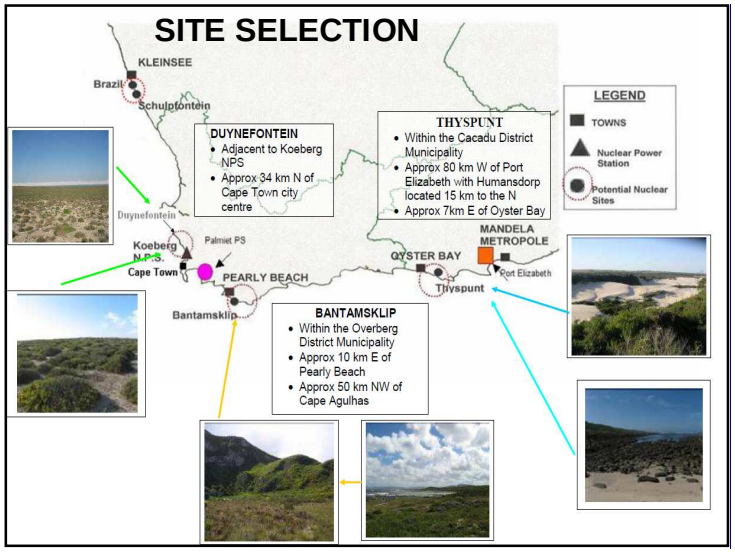
- Detailed description of proposed nuclear plant is not available, as preferred supplier has not been selected
- Approach used has been to specify enveloping environmental and other relevant requirements, to which the power station design and placement on site must comply
- Enveloping criteria represent the most conservative parameters associated with the various plant alternatives within the available PWR technology




EIA PROCESS (R. 32)
Draft Report
Specialist studies
Public review of the draft EIA Report
{60 days}
Current position in the EIA process
SUBMIT EIA REPORT AND DRAFT EMP
EIA Report
Draft EMP
60 DAYS
AUTHORITY RESPONSE TO EIA REPORT (R. 35)
Reject EIA Report
Request amendments
Specialist review
Accept EIA Report
45 DAYS
DECISION (R. 36)
10 DAYS
GRANT / REFUSE AUTHORISATION (R. 36)


SCOPING PHASE
EIA process comprises the Scoping and EIA phases
Approval of the Scoping Report
Application was submitted to the Department of Environmental Affairs (DEA) in May 2007 and amended in July 2008 for a single nuclear power station of up to 4 000 MW
DEA approved the Scoping Report - November 2008
In mid 2009, after publication of the amended EIA Regulations, Eskom announced that it was considering amending its application to include more than one nuclear power station. Eskom subsequently decided not to pursue the amendment of the application
Slide 14


SCOPING PHASE
In line with Eskom's intention to investigate the potential development of up to 20 000 MW of nuclear power generating capacity an application for the second nuclear power station may be submitted soon after the submission of the Final EIR for Nuclear-1
Approval of the Plan of Study for EIA
The Plan of Study (PoS) for EIA was made available for two rounds of public comment
DEA approved Final PoS for EIA - January 2010
The Scoping phase of the EIA process is complete
Slide 15


SITE SELECTION
KLEINSEE
Brazil
Schulpfontein
DUYNEFONTEIN
Adjacent to Koeberg NPS
Approx 34 km N of Cape Town city centre
THYSPUNT
Within the Cacadu District Municipality
Approx 80 km W of Port Elizabeth with Humansdorp located 15 km to the N
Approx 7km E of Oyster Bay
LEGEND
TOWNS
Nuclear Power Station
Potential Nuclear Sites
Duynefontein
Koeberg N.P.S.
Palmiet PS
Cape Town
PEARLY BEACH
Bantamsklip
MANDELA METROPOLE
OYSTER BAY
Port Elizabeth
Thyspunt
BANTAMSKLIP
Within the Overberg District Municipality
Approx 10 km E of Pearly Beach
Approx 50 km NW of Cape Agulhas

ASSESSMENT OF IMPACTS

- **The potential impacts assessed were based on:**
  - Issues identified by I&APs during the public participation process (PPP)
  - Issues identified by specialists through research
  - Experience of relevant specialists with projects of a similar nature or in a similar environment
  - Consultation with local specialists
  - Environmental resources and conditions identified during site surveys

METHODOLOGY

- Independent specialists assessed potential positive and negative impacts with and without mitigation
- According to the specialists, all potential negative impacts can be mitigated
- There are no fatal flaws at any of the alternative sites

SPECIALIST STUDIES

- **Physical Impacts**
  - Geology and geological risk
  - **Seismological risk**
  - Geo-hydrology
  - Geotechnical characteristics
- **Biophysical Impacts**
  - **Dune geomorphology**
  - **Flora**
  - Fauna **(Invertebrate and Vertebrate)**
  - Hydrology
  - **Freshwater ecosystems**
  - Oceanographic conditions
  - **Marine biology**
  - Air quality
  - Assessment of the1:100 year floodline

SPECIALIST STUDIES

- **Socio-economic Impacts**
  - **Social**
  - **Economic**
  - Noise
  - Visual
  - **Heritage and cultural resources**
  - Waste
  - **Tourism**
- As per the NNR / DEA co-operative agreement, a number of specialist studies related to human health risk and safety were commissioned and included in this EIR for information (4 studies)

SPECIALIST STUDY RESULTS

- **Seismological Risk**

Seismic studies indicate that the design basis for the respective sites in terms of peak ground acceleration values (PGA) are as follows:

  – Duynefontein – PGA ~0.30 g
  – Bantamsklip - PGA ~0.23 g
  – Thyspunt - PGA ~0.16 g

SPECIALIST STUDY RESULTS

- **Impacts on Dune Geomorphology**
  - Groundwater does not 'daylight' at the Duynefontein or Bantamsklip sites: access roads and transmission lines can be built across the mobile dunes at these sites
  - Access roads and transmission lines at Duynefontein can be built across the artificially vegetated and vegetated parabolic dunefields – provided dunes are stabilised
  - The interaction between dune systems and wetlands is complex at Thyspunt, since groundwater 'daylights' in many inter-dune areas

SPECIALIST STUDY RESULTS

- **Impacts on Dune Geomorphology**
  - As a result of the location of the proposed construction of transmission lines, haul roads and conveyor belts between the nuclear power station in the south and the HV yard in the north, the negative potential impacts on dune geomorphology at Thyspunt are more extensive than at the other two sites

SPECIALIST STUDY RESULTS

- **Impacts on Flora**
  - Bantamsklip will experience the least potential negative impact on plant communities and species, as the ecosystems on this site are fairly common along this section of coastline, provided that the power station is situated on the eastern half of the EIA corridor, away from the limestone fynbos
  - Thyspunt has by far the greatest diversity of vegetation communities, including extensive and highly sensitive wetlands

SPECIALIST STUDY RESULTS

- **Impacts on Wetlands**
  - The development of a nuclear power station at Duynefontein is unlikely to result in any unmitigable, highly significant negative impacts on wetlands
  - Development of the proposed nuclear power station at Bantamsklip would not be associated with any unmitigable impacts to wetland systems
  - The Thyspunt wetland systems are complex and potential negative impacts could occur without appropriate mitigation

THYSPUNT WETLANDS

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: Wetlands on site Thyspunt

SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Vertebrates**
  - The amount of land that is not of high faunal sensitivity at Duynefontein is more than sufficient for the nuclear power station
  - At Bantamsklip the nuclear power station could have significant negative potential impacts, without mitigation, because of the impacts on faunal habitats within the footprint
  - At Thyspunt a nuclear power station would have significant potential negative impacts, without mitigation, because of the direct impacts on faunal habitats within the footprint, the development of two major new access roads, and the need for a development corridor across a large mobile dunefield

SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Invertebrates**
  - The potential impacts of the nuclear power station on the terrestrial invertebrate communities are very similar for all alternative sites, but there are site-specific differences
  - None of the butterflies occurring in the Cape Flats Dune Fynbos area around Duynefontein are endangered or endemic
  - Non-vegetated and partially vegetated portions of the site are of very low and low sensitivity, respectively.
  - The new species of ant found at Duynefontein is regarded as a generalist and is likely to be found on other areas of the site

SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Invertebrates**
  - Thyspunt has the highest butterfly diversity and conservation value of the alternative sites. Thyspunt is identified as higher sensitivity than Duynefontein, and only marginally lower than Bantamsklip
  - From the viewpoint of potential positive impacts of the nuclear power station, Duynefontein already positively benefits under the management of Eskom, which means that it would experience the least improvement in conservation status
  - Bantamsklip and Thyspunt would benefit substantially from formal protection status. The project would have a potential net positive impact on invertebrate communities at Bantamsklip or Thyspunt

SPECIALIST STUDY RESULTS

- **Economic Impacts**
  - The overall positive macro-economic impacts will be greatest at Bantamsklip and Duynefontein, and less at Thyspunt, as the sites are situated in a province with a larger, more diversified economy. Nuclear-1 would result in less dislocation of economic activities if located at Duynefontein than at either of the other two sites
  - Macroeconomic indicators favour Duynefontein and Bantamsklip
  - The cost-effectiveness analysis indicates that Thyspunt has a very slight edge over Duynefontein and a somewhat larger edge over Bantamsklip. The differences between the alternative sites are slight, and all the sites would have large positive economic impacts both on the local area and the province in which they are situated
  - The economic impact assessment gives greater weight to the cost-effectiveness analysis

SPECIALIST STUDY RESULTS

- **Heritage Impacts**
  - All alternative sites contain significant heritage resources.
  - The amount of Late Stone Age heritage that will be potentially impacted at Duynefontein will be substantially less than that of Bantamsklip and Thyspunt
  - Duynefontein is palaeontologically highly sensitive. Bantamsklip is almost as sensitive as Thyspunt in terms of its heritage richness

SPECIALIST STUDY RESULTS

Marine Biology Impacts

- Potential impacts similar at all sites and the impacts can be mitigated if the proposed designs are implemented as planned
- Potentially the most significant impacts are:
  - Disruption of the marine environment through the offshore disposal of sediment
  - Release of warmed cooling water
- Potential impacts of marine spoil disposal will have a potentially highly significant long-term negative affect on the marine environment

Slide 33

SPECIALIST STUDY RESULTS

Social Impacts

- Potential negative impacts relate to accommodation for temporary workers during construction
- Potential positive impact is the provision of electricity and related benefits to the broader national and regional economies
- Perceived risks associated with nuclear incidents could potentially lead to a change in attitude and behaviour – reliable information is important

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SPECIALIST STUDY RESULTS

Tourism Impacts

- Communities at Thyspunt and Bantamsklip have expressed opposition to the proposed power station
- Thyspunt community highlighted the premium nature of the top-end coastal vacation destination
- Bantamsklip community emphasised the new and fragile nature of the developing tourism product and the local dependence thereon
- Some Duynefontein tourism stakeholders have personal objections to another power station, however they recognise the potential for increased business and promote a generally positive outlook for tourism

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SPECIALIST STUDY RESULTS

Tourism Impacts

- Assessment takes account decline in nature-based tourism as well as an increase in business-related tourism associated with the proposed nuclear power station
- Duynefontein – limited potential impact during construction. During operation a potential 1.43% improvement in tourism is predicted
- Bantamsklip - potential 5% positive impact during construction. During operation a potential 8.57% improvement in tourism is predicted
- Thyspunt – Potential 7.86% negative impact during construction. During operation a zero potential impact is predicted

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PROJECT ALTERNATIVES

- Forms of power generation
- Nuclear plant types
- **Layout of the nuclear plant**
- **Fresh water supply and utilisation of abstracted groundwater**
- Management of brine
- Intake of sea water
- **Outlet of water**
- Management of spoil material
- Access to Thyspunt
- **Waste**
- **The no-development alternative (i.e. 'No-Go')**
- **Location of the power station (i.e. site selection)**

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SITE SELECTION

- Site selection was based on:
  - Results of independent specialist studies: the significance of potential impacts, with mitigation, at each of the sites
  - An integration workshop, involving all specialists, where ranking of the sites and key decision factors were agreed on
  - Quantified ranking taking into account the key decision factors

Slide 38

SITE SELECTION

- Impacts of low significance at all alternative sites filtered out e.g. noise, visual impacts, hydrology
- Impacts of medium and high significance that have the same significance at all sites were filtered out e.g. social
- The key factors for decision-making:
  - Integration into the national grid
  - Seismic suitability
  - Impacts on dune geomorphology
  - Impacts on wetlands
  - Impacts on vertebrate fauna
  - Impacts on invertebrate fauna
  - Economic impacts

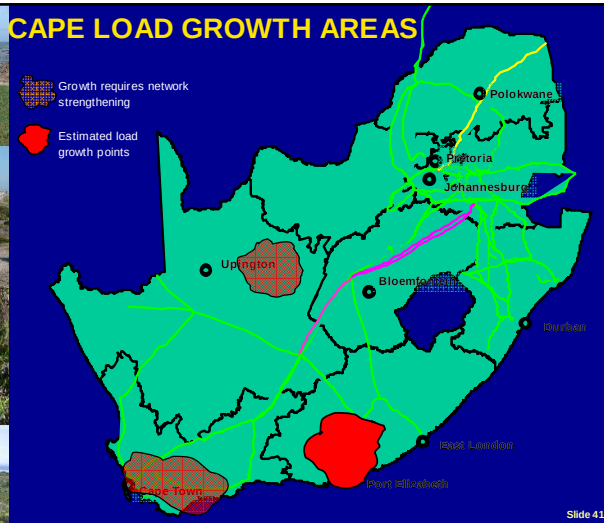
Slide 39

INTEGRATION INTO THE NATIONAL GRID

- Where do we require power stations for future load growth?
- Electricity needs to be transmitted from the high voltage yard at the power station through a network of transmission and distribution lines to end users
- To improve efficient, Eskom tries connect new base load generation to the closest load, where possible

Slide 40

CAPE LOAD GROWTH AREAS



Slide 41

SITE SELECTION

A number of factors indicate that Bantamsklip cannot be regarded as a preferred alternative when compared with the other two alternative sites:

- Substantially higher construction costs due to its remote location (requirements for upgrading of roads and bridges and lengthy transmission lines)
- Cumulative environmental impacts of the transmission corridors
- Potential impacts on invertebrate fauna

Bantamsklip is regarded as the least preferred site alternative for **Nuclear-1**

Slide 42

SITE SELECTION: RECOMMENDATIONS

A quantitative assessment of key criteria indicates that Thyspunt is preferred (with a score of 76 as opposed to Duynefontein's score of 57) due to:

- Lower seismic risk
- Relative ease of integration into the transmission grid
- Site's locality relative to the Port Elizabeth load centre
- Potential overall positive conservation benefits of the majority of the site, as well as additional land being managed for conservation purposes
- Conservation benefits would not be realised at Duynefontein

Slide 43

NUCLEAR PLANT LAYOUT

- Sensitivity maps of all specialist studies were integrated and composite maps were produced to indicate areas of high environmental suitability for each alternative site

- Finalisation of the site layout plans will require detailed investigations, in conjunction with relevant qualified and experienced specialists

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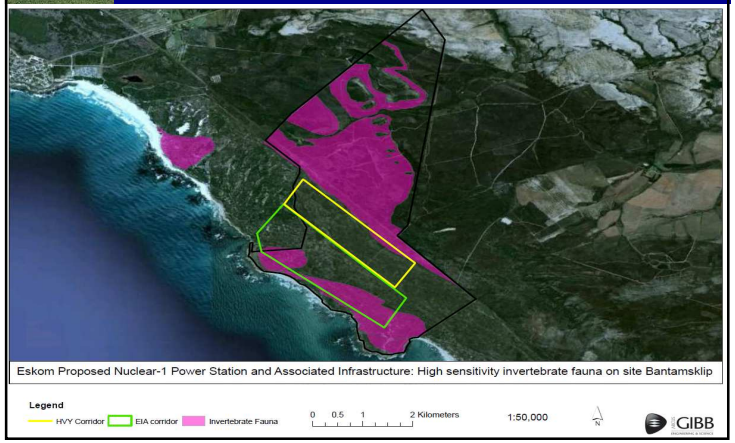
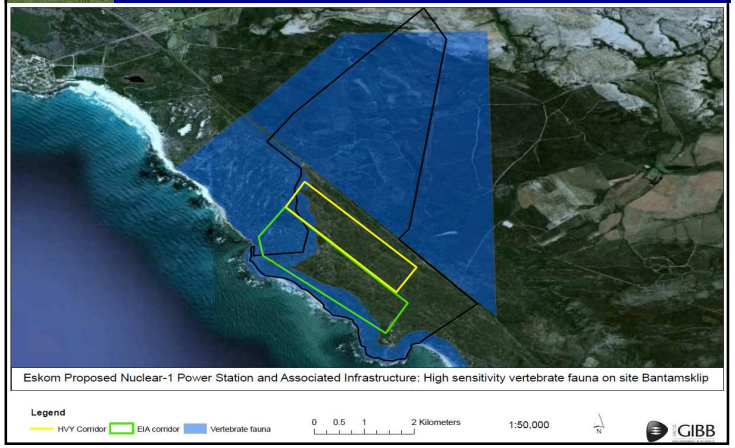
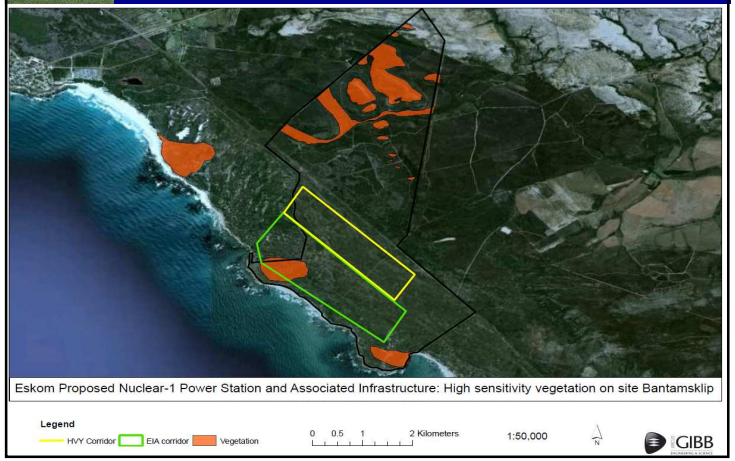
Site Sensitivity: Bantamsklip – Invertebrate Fauna



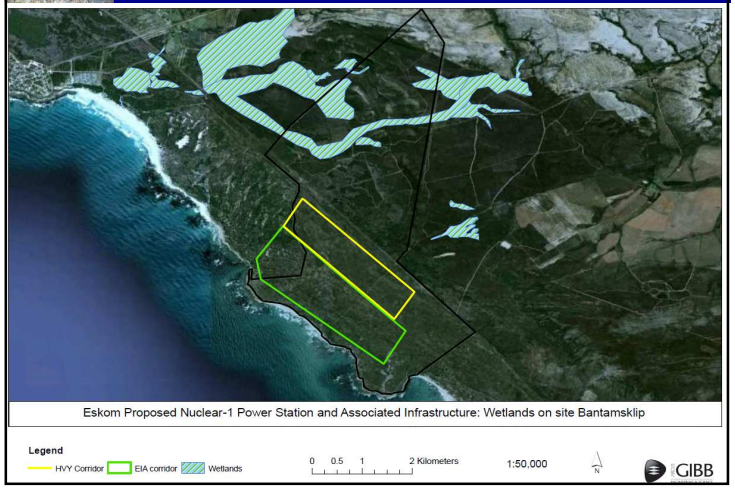
Site Sensitivity: Bantamsklip – Vertebrate Fauna



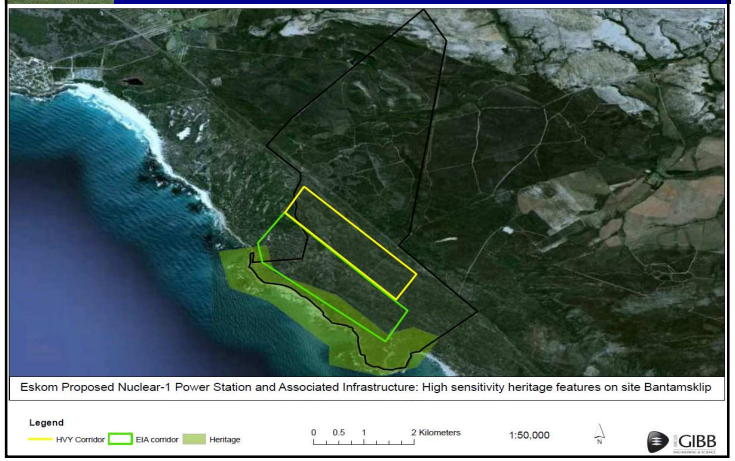
Site Sensitivity: Bantamsklip – Flora



Site Sensitivity: Bantamsklip – Wetlands



Site Sensitivity: Bantamsklip – Heritage



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity heritage features on site Bantamsklip

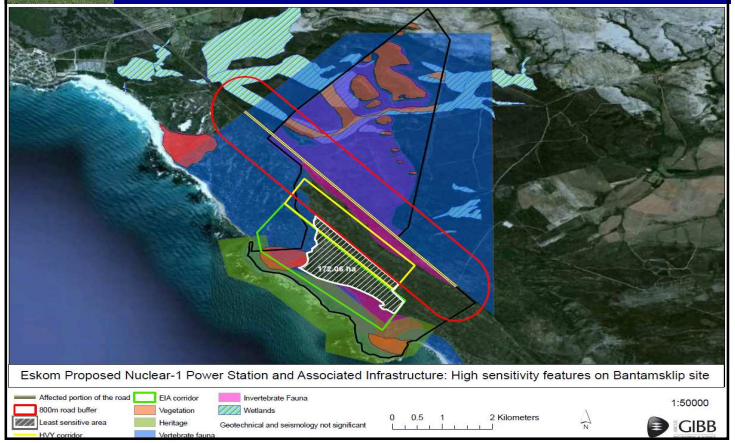
Legend
HV/Y Corridor | EIA corridor | Heritage

0 0.5 1 2 Kilometers

1:50,000

GIBB

Site Sensitivity: Bantamsklip – Combined Sensitivity



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity features on Bantamsklip site

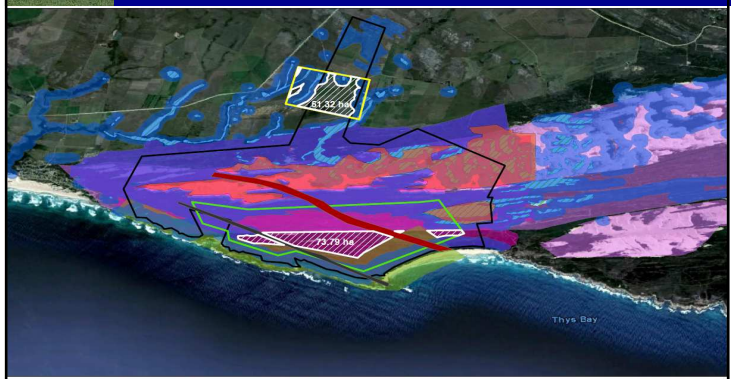
Affected portion of the road | EIA corridor | Invertebrate Fauna
800m road buffer | Vegetation | Wetlands
Least sensitive area | Heritage | Geotechnical and seismology not significant
HV/Y corridor | Vertebrate fauna

0 0.5 1 2 Kilometers

1:50000

GIBB

Site Sensitivity: Thyspunt – Combined Sensitivity



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity features on Thyspunt site

Legend
Least sensitive area | Vertebrate fauna | Dune geomorphology
HV/Y corridor | Heritage | Geology, Seismology and Geotechnics
EIA corridor | Wetlands | 'No-go' Zone of Seismic Hazard (Goudini/ Cederberg Transition)
Vegetation | Invertebrate fauna | 'No-go' Zone of Seismic Hazard (Skurweberg/Goudini Transition)

0 0.5 1 2 Kilometers

1:50000

GIBB

Site Sensitivity: Duynefontein – Combined Sensitivity

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity features on Duynefontein site

Legend
Affected portion of road | EIA corridor | Invertebrate fauna
800m road buffer | Heritage | Wetlands (not significant)
Least sensitive area | Vegetation | Geotechnical and seismology not significant

0 0.5 1 2 Kilometers

1:65000

GIBB

FRESH WATER SUPPLY AND UTILISATION OF ABSTRACTED GROUNDWATER

- At all sites desalination provides a guaranteed source of fresh water supply for the lifespan of the proposed nuclear power station without jeopardising the availability of fresh water to other users
- A desalinisation plant is therefore the preferred alternative for the provision of fresh water at all sites

Slide 53

INTAKE AND OUTLET OF WATER

- The installation of intake and outlet tunnels that obtain water from the ocean and feed cooling water into a storage area located adjacent to the cooling water pump houses is the only feasible alternative for all sites
- Outlet structures for cooling water and chemical effluent must be offshore
- All releases need to occur at the distances prescribed by the relevant specialists
- Provided that the specific mitigation measures identified in the marine biology report are adhered to, offshore effluent release is the recommended alternative

Slide 54

WASTE

- The only feasible alternative for the disposal of Low-Level and Intermediate-Level radioactive waste is disposal at the Vaalputs nuclear waste disposal site
- Vaalputs is the only authorised facility for this form of waste in SA. Vaalputs has sufficient capacity for the waste that will be generated by Nuclear-1
- With regards to High-Level Waste (spent fuel), the only alternative currently available in SA is long-term storage of the spent fuel in the nuclear power station
- Vaalputs may be considered as a disposal site for High-Level Waste in future

Slide 55

NO-DEVELOPMENT ALTERNATIVE

- Given the urgent power demand in South Africa, the No-Go alternative is not considered to be an alternative, as Eskom's mandate is to provide power for the country
- Eskom would likely apply to develop coal-fired power stations if the current application is declined as coal-fired generation is the only feasible base load alternative
- The life-cycle environmental impacts of coal-fired power generation are much greater than nuclear-fuelled power generation

Slide 56

NO-DEVELOPMENT ALTERNATIVE

- If Eskom does not utilise Bantamsklip and Thyspunt for nuclear development, it is likely to sell the properties
- The sale of the properties will be to a willing buyer at the market-related price, which may result in an alternative form of land use that may not involve management of the majority of the properties as nature reserves

Slide 57

KEY MITIGATION MEASURES

- Independent specialists have proposed mitigation measures to reduce potential negative impacts
- Draft EMP has been compiled as part of draft EIR and if authorised, it will be a legally binding document
- Compliance to EMP must be independently audited throughout construction and operation
- Mitigation measures for botanical impacts, vertebrate and invertebrate fauna, wetlands and heritage resources are particularly important
- Mitigation of heritage impacts will require the work of a site-specific team dedicated to excavations over a period of several years prior to construction

Slide 58

KEY MITIGATION MEASURES

- Qualified and experienced botanical, wetland, vertebrate and invertebrate fauna, dune geomorphology and heritage specialists will need to find an acceptable final access route alignment
- Additional groundwater studies are necessary to better understand the interaction between groundwater and wetlands

Slide 59

WAY FORWARD

- Comment Period – 6 March to 10 May (66 days)
- Public meetings and key stakeholder workshops will be held around the sites assessed from 23 March to 21 April. Minutes of meetings will be sent to attendees
- Comments received will be addressed in the Issues and Response Report in the Final EIR
- Final EIR will be submitted to the DEA for consideration and decision-making
- Final decision regarding EIA will be communicated to registered I&APs
- Construction of Nuclear-1 is subject to other approvals e.g. the NNR site safety decision and transmission lines EIA authorisations

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WAY FORWARD

Written comments can be submitted by:

- Post: Public Participation Office, Nuclear 1 EIA, PO Box 503, Mtunzini, 3867, SA
- Fax: +27 (0) 35 340 2232
- Email: nuclear1@acerafrica.co.za

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MEETING CONDUCT

- Please wait for the discussion session to ask questions
- Introduce yourselves prior to asking a question and indicate your specific interest
- You are welcome to ask the question in your mother tongue. Presentations will be in English
- One person at a time
- Work through the facilitator
- Show respect
- Focus on the issue not the person
- Be constructive
- Agree to disagree

Please switch off all cell phones!

Slide 62

THANK YOU

Slide 63

SPECIALIST STUDY RESULTS

Oceanographic Impacts

- Nuclear-1 will be built at least 10 m above high water mark
- Dispersion of the plume is considered to be acceptable at all alternative sites
- Relatively unfavourable dispersion of the thermal plume takes place at Thyspunt, where the plume hugs the coastline and shallow near shore areas
- The most efficient dispersal of the thermal plume will occur at Duynefontein
- Potential for suspended sediment plumes to impact upon tourism (e.g. shark cage diving at Dyer Island) should be mitigated

Slide 64

SPECIALIST STUDY RESULTS

Impact on Transportation Systems

- Duynefontein does not require significant upgrades to transport systems during construction and operation
- Costly upgrades are required to the public transport system for Bantamsklip and Thyspunt. Upgrades would be significant for Bantamsklip

SPECIALIST STUDY RESULTS

Impact on Fresh Water Supply

- There are no rivers or perennial streams at any of the alternative sites and construction and operation of the power station will thus not have any direct impacts on surface water supply schemes or catchments
- As groundwater is near the end of the flow path, the only existing groundwater use that could be directly affected are the coastal springs and potential impacts would be of a localised extent

SPECIALIST STUDY RESULTS

Impact on Hydrological Conditions

- Direct hydrological impacts at all alternative sites are of a low significance
- Potential impacts relate to flood hazard at low points along the coastal frontage of the EIA corridor and increased surface run-off volumes and peaks

SPECIALIST STUDY RESULTS

Impact on Geotechnical Suitability

- Potential impacts related to slope stability imposing safety risks are of a low significance and consequences at all sites, as slope stability design techniques will be employed to deal with these issues
- Potential impacts associated with larger volume excavations in sands will be significant at all sites, depending on the final footprint, and will need mitigation

SPECIALIST STUDY RESULTS

Impacts on Geological Risk

- There is a low geological risk and no disqualifiers at any of the sites and surrounding environment
- Potential impacts related to geological risk is interrelated to the seismic hazard of the site and water quality in the area

SPECIALIST STUDY RESULTS

Agriculture Impacts

- Agriculture around Thyspunt is based mainly on milk production (2008: R150 m per annum) -
- Fynbos farming prevails at the Bantamsklip although there is some dairy as well as grape, beef, sheep and game farming (2008: R29 m per annum)
- Duynefontein is based on mixed farming (2008: R75 m per annum)

SPECIALIST STUDY RESULTS

Agriculture Impacts

- Duynefontein – no impact on agriculture during construction and operation
- Bantamsklip – negative potential impact of dust (construction). Potential of less than 5% increase in local market due to water limitations that restrict expansion
- Thyspunt – negative potential impact of dust (construction). Potential for positive impact on production by increasing the size of the local market for fresh produce

SPECIALIST STUDY RESULTS

Air Quality Impacts

- Sources of impacts during construction would be fugitive dust emissions from general construction activities and emissions from vehicles and equipment
- Potential sources of non-radioactive air emissions during operation:
  - Carbon, sulfur and nitrogen oxides in the exhaust gases from engines of the backup electricity generators
  - Formaldehyde and carbon monoxide emitted by the insulation when installations go back into operation after servicing
  - Ammonia discharged as the temperature rises in the steam generators during start-up

SPECIALIST STUDY RESULTS

Air Quality Impacts

- Low predicted impacts of non-radiological pollutants when compared to human health risk and vegetation impact criteria
- During normal operation, trace quantities of radiological materials will be released to the environment
- Dispersion simulations included a number of identified Design Basis Accidents. Predicted highest whole body dose at 1 km downwind of power station following such accidental releases was shown to be below the maximum acceptable limit of 50 mSv for a single event, as stipulated by the NNR

SPECIALIST STUDY RESULTS

Noise Impacts

- Potential negative noise impacts are of low or very low significance
- There will be no potential noise impact on adjacent land surrounding any of the sites during construction and operation due to large distances between power station and site boundary
- OCGT power plant (emergency power) will be placed on property boundary at Thyspunt, which will result in a potential noise impact on residents situated within 1000 m of the plant

SPECIALIST STUDY RESULTS

Visual Impact

- Due to the size of a nuclear power station and its location in relative open, treeless landscapes along the coast, with negligible visual screening by landforms, potential visual impacts at all sites may be significant
- The use of screens, appropriate lighting, appropriate positioning of spoil dumps and attention to the colour of large structures etc. is recommended

SPECIALIST STUDY RESULTS

Impacts of Emergency Planning

- Duynefontein is currently in proximity to the Koeberg Nuclear Power Station, therefore the emergency response infrastructure and systems are in place
- Outcomes of the Safety Analyses will determine if the current infrastructure would be adequate to cope with the demands of the proposed power station
- Bantamsklip and Thyspunt will require substantial upgrading of infrastructure since they are in remote areas

SPECIALIST STUDY RESULTS

Site Control Impacts

Duynefontein

- Site already developed as a NPS with full access and site control
- It has full visitor facilities with a Visitor's Centre
- Access will be via new access control points and upgraded existing roads leading off the R27

Thyspunt

- Access to the site is currently limited and controlled by fencing and electronic/locked gates
- A new access control point will be developed on the western or eastern owner controlled boundary and at the outer and inner security fence

Slide 77

SPECIALIST STUDY RESULTS

Site Control Impacts

- Bantamsklip
  - Access to the site is currently limited and controlled by fencing and gates
  - The R43 tarred road passes through the site

Slide 78

SPECIALIST STUDY RESULTS

Human Health Impacts

- The NNR will issue a license for the establishment of an NNR at any particular site only if full compliance with the radiological dose limits and dose constraints is demonstrated, taking into account the principles of ALARA and all other matters relating to the overall safety case

Slide 79

SPECIALIST STUDY RESULTS

Geohydrological Impacts

Six potential environmental impacts involving groundwater have been identified:

- Flooding by groundwater
- Depletion of local aquifers
- Degradation of ecologically sensitive wetlands / phreatophytes/ seeps /springs
- Contamination
- Degradation of infrastructure
- Contamination of the shore zone

- The impacts are of low significance due to the sites being situated in coastal zones with groundwater being at/near the end of its flow path and minimal downstream receptors

Slide 80

SPECIALIST STUDY RESULTS

1:100 Flood Line

The 1:100 year flood lines have been calculated for each site for the present day and 2075 (based on predicted sea level rise).

	Present day: Excluding climate change		Year 2075: Including climate change	
Site	Min [m MSL]	Max [m MSL]	Min [m MSL]	Max [m MSL]
Thyspunt	4.4	9.9	5.7	11.2
Bantamsklip	4.0	9.4	4.8	10.8
Duynefontein	4.4	6.3	5.3	7.4

ESKOM HOLDINGS LIMITED

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR A PROPOSED NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE DEA REF. No.:12/12/20/944

EIA Phase Public Meeting:
Review of Draft Environmental Impact Report

March / April 2010

Slide 1

PROPOSED AGENDA

1. Sign attendance register and discussion with team: 17:00 – 17:50
2. Welcome and introductions: 18:00 – 18:10
3. Presentation of EIA and EMP findings: 18:10 – 19:00
4. Discussion: 19h00 – 19:50
5. Way forward and close: 19:50 – 20:00

Slide 2

MEETING CONDUCT

- Please wait for the discussion session to ask questions
- Introduce yourselves prior to asking a question and indicate your specific interest
- You are welcome to ask the question in your mother tongue. Presentations will be in English
- One person at a time
- Work through the facilitator
- Show respect
- Focus on the issue not the person
- Be constructive
- Agree to disagree

Please switch off all cell phones!

Slide 3

MEETING OBJECTIVES

- The focus of the meeting is to provide an opportunity for Interested and Affected Parties (I&APs) to comment on the findings of the EIA and the Draft Environmental Impact Assessment Report (EIR)
- Provide an opportunity for I&APs to seek further clarity on the proposed project, the EIA phase and the Draft EIR
- Provide I&APs with an opportunity for interaction with the EIA team
- Recording of issues - the proceedings will be recorded and used to compile meeting minutes. Comments will be included in the Issues and Response Report (IRR) and changes will be made to the Final EIR, where necessary

Slide 4

KEY ISSUES

- Some people are opposed to and others are in favour of a nuclear power station at Bantamsklip, Thyspunt and Duynefontein
- Concerns about the potential impacts on human health and safety
- Local residents share a deep-felt connection to the area and have a strong “sense of place”
- A power station could potentially be unsightly
- Tourism is linked to conservation and preservation of the coastline

KEY ISSUES

- Marine life could potentially be adversely affected by altered sea temperature and turbulence caused by inflow and output of sea water to the plant
- Concern that commercial and recreational fishing may be negatively impacted
- Light pollution
- Concerns about potential drop in property values
- Concern about cost of constructing a power station
- Some people expressed a lack of trust in the EIA
- Storage of hazardous waste
- Renewable (‘green’) energy (e.g. wind, solar) vs. nuclear

PROJECT MOTIVATION

- Increasing demand for electricity (> 4% growth per annum)
- Projected requirement for more than 40 000 MW of new electricity generating capacity over the next 20 years
- In SA only coal and nuclear power are solutions for base load generation, while gas turbines, hydroelectric power stations and pumped storage schemes are used for peaking and emergency electricity generation

PROPOSED ACTIVITY

- Eskom proposes the construction, operation and decommissioning of a conventional nuclear power station and associated infrastructure either in the Eastern or Western Cape
- A nuclear power station of the Pressurised Water Reactor (PWR) type technology e.g. Koeberg Power Station
- The transmission power lines are subject to separate environmental authorisation processes

TRANSMISSION (TX) LINE EIAs

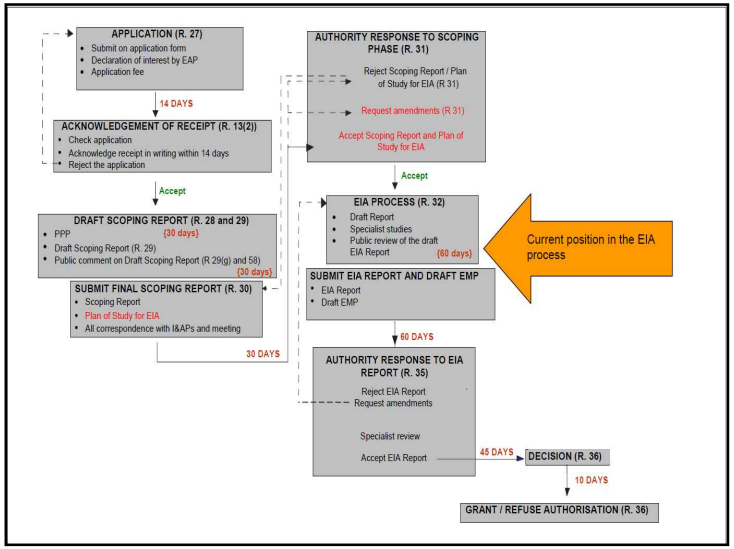
- Bantamsklip – Scoping phase has been extended to include Multi-stakeholder Workshops and additional public consultation. Revised Draft Scoping Report will be made available for public comment
- Thyspunt – Scoping Report accepted by Authorities and EIA phase has commenced
- Duynefontein – Scoping Report accepted by Authorities and EIA phase has commenced

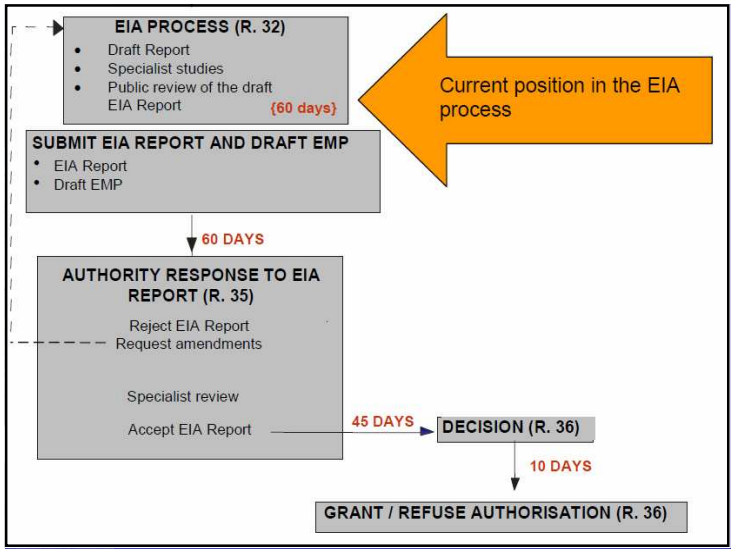
PROJECT BACKGROUND

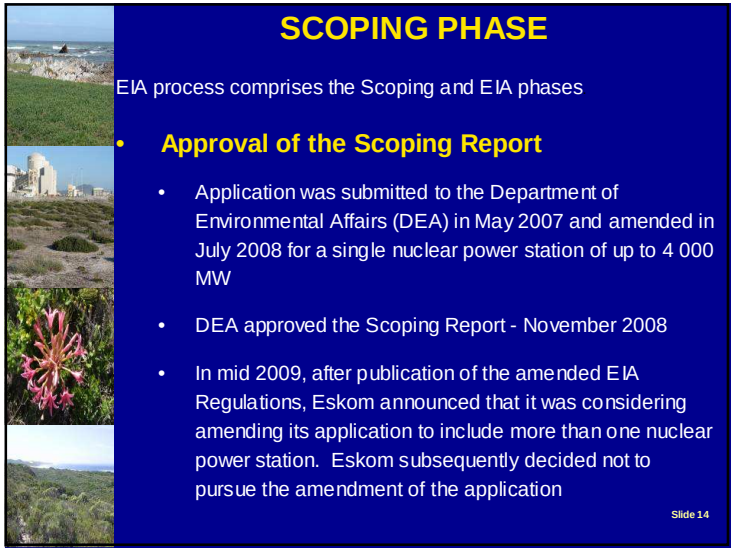
- The power station and directly associated infrastructure will require approximately 31 ha
- The footprint assessed makes provision for the potential future expansion of a power station, to 10 000 MW or the maximum carrying capacity
- The proposed nuclear power station will include nuclear reactor, turbine complex, spent fuel, nuclear fuel storage facilities, waste handling facilities, intake and outfall pipelines, desalinisation plant and auxiliary service infrastructure
- Should the proposed project be authorised, it is anticipated that construction of the station could commence in 2011 with the first unit being commissioned in 2018

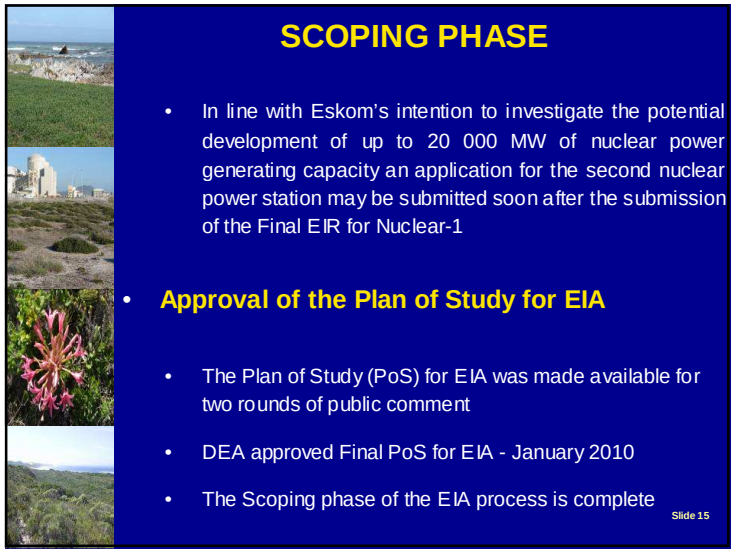
ENVELOPE OF CRITERIA

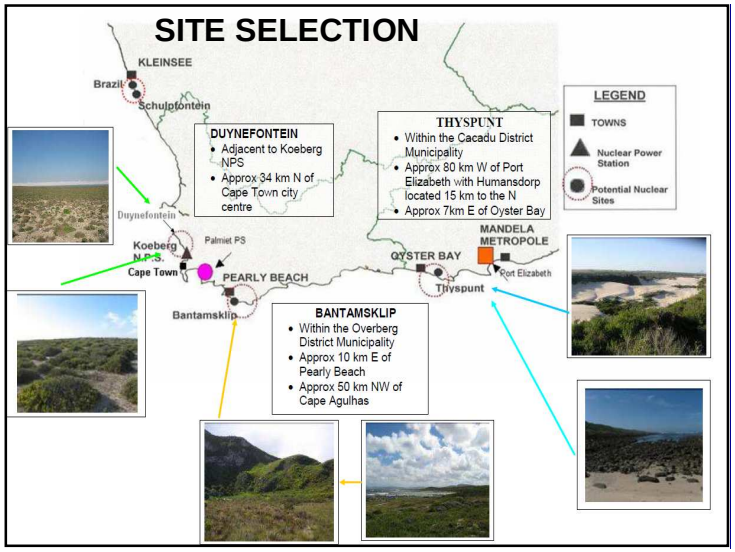
- Detailed description of proposed nuclear plant is not available, as preferred supplier has not been selected
- Approach used has been to specify enveloping environmental and other relevant requirements, to which the power station design and placement on site must comply
- Enveloping criteria represent the most conservative parameters associated with the various plant alternatives within the available PWR technology




EIA PROCESS (R. 32)
Draft Report
Specialist studies
Public review of the draft EIA Report
{60 days}
Current position in the EIA process
SUBMIT EIA REPORT AND DRAFT EMP
EIA Report
Draft EMP
60 DAYS
AUTHORITY RESPONSE TO EIA REPORT (R. 35)
Reject EIA Report
Request amendments
Specialist review
Accept EIA Report
45 DAYS
DECISION (R. 36)
10 DAYS
GRANT / REFUSE AUTHORISATION (R. 36)


SCOPING PHASE
EIA process comprises the Scoping and EIA phases
Approval of the Scoping Report
Application was submitted to the Department of Environmental Affairs (DEA) in May 2007 and amended in July 2008 for a single nuclear power station of up to 4 000 MW
DEA approved the Scoping Report - November 2008
In mid 2009, after publication of the amended EIA Regulations, Eskom announced that it was considering amending its application to include more than one nuclear power station. Eskom subsequently decided not to pursue the amendment of the application
Slide 14


SCOPING PHASE
In line with Eskom's intention to investigate the potential development of up to 20 000 MW of nuclear power generating capacity an application for the second nuclear power station may be submitted soon after the submission of the Final EIR for Nuclear-1
Approval of the Plan of Study for EIA
The Plan of Study (PoS) for EIA was made available for two rounds of public comment
DEA approved Final PoS for EIA - January 2010
The Scoping phase of the EIA process is complete
Slide 15


SITE SELECTION
KLEINSEE
Brazil
Schulpfontein
DUYNEFONTEIN
Adjacent to Koeberg NPS
Approx 34 km N of Cape Town city centre
THYSPUNT
Within the Cacadu District Municipality
Approx 80 km W of Port Elizabeth with Humansdorp located 15 km to the N
Approx 7km E of Oyster Bay
LEGEND
TOWNS
Nuclear Power Station
Potential Nuclear Sites
Duynefontein
Koeberg N.P.S.
Palmiet PS
Cape Town
PEARLY BEACH
Bantamsklip
MANDELA METROPOLE
OYSTER BAY
Port Elizabeth
Thyspunt
BANTAMSKLIP
Within the Overberg District Municipality
Approx 10 km E of Pearly Beach
Approx 50 km NW of Cape Agulhas

ASSESSMENT OF IMPACTS

- **The potential impacts assessed were based on:**
  - Issues identified by I&APs during the public participation process (PPP)
  - Issues identified by specialists through research
  - Experience of relevant specialists with projects of a similar nature or in a similar environment
  - Consultation with local specialists
  - Environmental resources and conditions identified during site surveys

METHODOLOGY

- Independent specialists assessed potential positive and negative impacts with and without mitigation
- According to the specialists, all potential negative impacts can be mitigated
- There are no fatal flaws at any of the alternative sites

SPECIALIST STUDIES

- **Physical Impacts**
  - Geology and geological risk
  - **Seismological risk**
  - Geo-hydrology
  - Geotechnical characteristics
- **Biophysical Impacts**
  - **Dune geomorphology**
  - **Flora**
  - **Fauna (Invertebrate and Vertebrate)**
  - Hydrology
  - **Freshwater ecosystems**
  - Oceanographic conditions
  - **Marine biology**
  - Air quality
  - Assessment of the1:100 year floodline

SPECIALIST STUDIES

- **Socio-economic Impacts**
  - **Social**
  - **Economic**
  - Noise
  - Visual
  - **Heritage and cultural resources**
  - Waste
  - **Tourism**
- As per the NNR / DEA co-operative agreement, a number of specialist studies related to human health risk and safety were commissioned and included in this EIR for information (4 studies)

SPECIALIST STUDY RESULTS

- **Seismological Risk**

Seismic studies indicate that the design basis for the respective sites in terms of peak ground acceleration values (PGA) are as follows:

  – Duynefontein – PGA ~0.30 g
  – Bantamsklip - PGA ~0.23 g
  – Thyspunt - PGA ~0.16 g

SPECIALIST STUDY RESULTS

- **Impacts on Dune Geomorphology**
  - Groundwater does not 'daylight' at the Duynefontein or Bantamsklip sites: access roads and transmission lines can be built across the mobile dunes at these sites
  - Access roads and transmission lines at Duynefontein can be built across the artificially vegetated and vegetated parabolic dunefields – provided dunes are stabilised
  - The interaction between dune systems and wetlands is complex at Thyspunt, since groundwater 'daylights' in many inter-dune areas

SPECIALIST STUDY RESULTS

- **Impacts on Dune Geomorphology**
  - As a result of the location of the proposed construction of transmission lines, haul roads and conveyor belts between the nuclear power station in the south and the HV yard in the north, the negative potential impacts on dune geomorphology at Thyspunt are more extensive than at the other two sites

SPECIALIST STUDY RESULTS

- **Impacts on Flora**
  - Bantamsklip will experience the least potential negative impact on plant communities and species, as the ecosystems on this site are fairly common along this section of coastline, provided that the power station is situated on the eastern half of the EIA corridor, away from the limestone fynbos
  - Thyspunt has by far the greatest diversity of vegetation communities, including extensive and highly sensitive wetlands

SPECIALIST STUDY RESULTS

- **Impacts on Wetlands**
  - The development of a nuclear power station at Duynefontein is unlikely to result in any unmitigable, highly significant negative impacts on wetlands
  - Development of the proposed nuclear power station at Bantamsklip would not be associated with any unmitigable impacts to wetland systems
  - The Thyspunt wetland systems are complex and potential negative impacts could occur without appropriate mitigation

THYSPUNT WETLANDS

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: Wetlands on site Thyspunt

SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Vertebrates**
  - The amount of land that is not of high faunal sensitivity at Duynefontein is more than sufficient for the nuclear power station
  - At Bantamsklip the nuclear power station could have significant negative potential impacts, without mitigation, because of the impacts on faunal habitats within the footprint
  - At Thyspunt a nuclear power station would have significant potential negative impacts, without mitigation, because of the direct impacts on faunal habitats within the footprint, the development of two major new access roads, and the need for a development corridor across a large mobile dunefield

SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Invertebrates**
  - The potential impacts of the nuclear power station on the terrestrial invertebrate communities are very similar for all alternative sites, but there are site-specific differences
  - None of the butterflies occurring in the Cape Flats Dune Fynbos area around Duynefontein are endangered or endemic
  - Non-vegetated and partially vegetated portions of the site are of very low and low sensitivity, respectively.
  - The new species of ant found at Duynefontein is regarded as a generalist and is likely to be found on other areas of the site

SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Invertebrates**
  - Thyspunt has the highest butterfly diversity and conservation value of the alternative sites. Thyspunt is identified as higher sensitivity than Duynefontein, and only marginally lower than Bantamsklip
  - From the viewpoint of potential positive impacts of the nuclear power station, Duynefontein already positively benefits under the management of Eskom, which means that it would experience the least improvement in conservation status
  - Bantamsklip and Thyspunt would benefit substantially from formal protection status. The project would have a potential net positive impact on invertebrate communities at Bantamsklip or Thyspunt

SPECIALIST STUDY RESULTS

- **Economic Impacts**
  - The overall positive macro-economic impacts will be greatest at Bantamsklip and Duynefontein, and less at Thyspunt, as the sites are situated in a province with a larger, more diversified economy. Nuclear-1 would result in less dislocation of economic activities if located at Duynefontein than at either of the other two sites
  - Macroeconomic indicators favour Duynefontein and Bantamsklip
  - The cost-effectiveness analysis indicates that Thyspunt has a very slight edge over Duynefontein and a somewhat larger edge over Bantamsklip. The differences between the alternative sites are slight, and all the sites would have large positive economic impacts both on the local area and the province in which they are situated
  - The economic impact assessment gives greater weight to the cost-effectiveness analysis

SPECIALIST STUDY RESULTS

- **Heritage Impacts**
  - All alternative sites contain significant heritage resources.
  - The amount of Late Stone Age heritage that will be potentially impacted at Duynefontein will be substantially less than that of Bantamsklip and Thyspunt
  - Duynefontein is palaeontologically highly sensitive. Bantamsklip is almost as sensitive as Thyspunt in terms of its heritage richness

SPECIALIST STUDY RESULTS

Marine Biology Impacts

- Potential impacts similar at all sites and the impacts can be mitigated if the proposed designs are implemented as planned
- Potentially the most significant impacts are:
  - Disruption of the marine environment through the offshore disposal of sediment
  - Release of warmed cooling water
- Potential impacts of marine spoil disposal will have a potentially highly significant long-term negative affect on the marine environment

Slide 33

SPECIALIST STUDY RESULTS

Social Impacts

- Potential negative impacts relate to accommodation for temporary workers during construction
- Potential positive impact is the provision of electricity and related benefits to the broader national and regional economies
- Perceived risks associated with nuclear incidents could potentially lead to a change in attitude and behaviour – reliable information is important

Slide 34

SPECIALIST STUDY RESULTS

Tourism Impacts

- Communities at Thyspunt and Bantamsklip have expressed opposition to the proposed power station
- Thyspunt community highlighted the premium nature of the top-end coastal vacation destination
- Bantamsklip community emphasised the new and fragile nature of the developing tourism product and the local dependence thereon
- Some Duynefontein tourism stakeholders have personal objections to another power station, however they recognise the potential for increased business and promote a generally positive outlook for tourism

Slide 35

SPECIALIST STUDY RESULTS

Tourism Impacts

- Assessment takes account decline in nature-based tourism as well as an increase in business-related tourism associated with the proposed nuclear power station
- Duynefontein – limited potential impact during construction. During operation a potential 1.43% improvement in tourism is predicted
- Bantamsklip - potential 5% positive impact during construction. During operation a potential 8.57% improvement in tourism is predicted
- Thyspunt – Potential 7.86% negative impact during construction. During operation a zero potential impact is predicted

Slide 36

PROJECT ALTERNATIVES

- Forms of power generation
- Nuclear plant types
- **Layout of the nuclear plant**
- **Fresh water supply and utilisation of abstracted groundwater**
- Management of brine
- Intake of sea water
- **Outlet of water**
- Management of spoil material
- Access to Thyspunt
- **Waste**
- **The no-development alternative (i.e. 'No-Go')**
- **Location of the power station (i.e. site selection)**

Slide 37

SITE SELECTION

- Site selection was based on:
  - Results of independent specialist studies: the significance of potential impacts, with mitigation, at each of the sites
  - An integration workshop, involving all specialists, where ranking of the sites and key decision factors were agreed on
  - Quantified ranking taking into account the key decision factors

Slide 38

SITE SELECTION

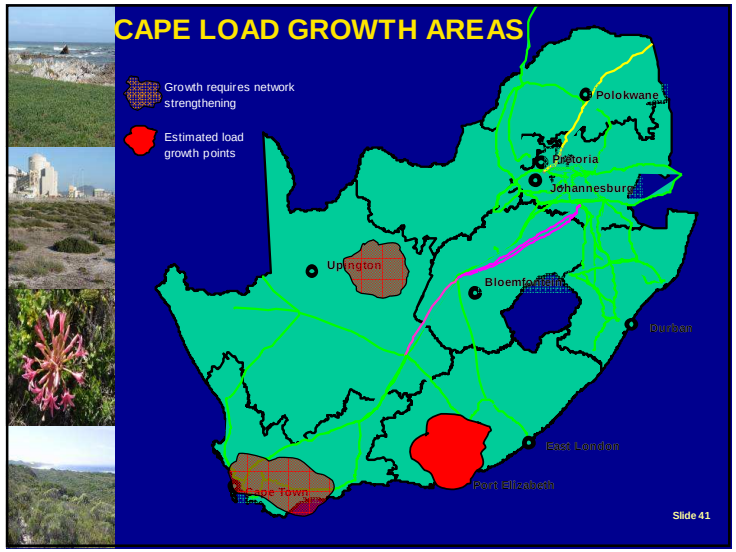
- Impacts of low significance at all alternative sites filtered out e.g. noise, visual impacts, hydrology
- Impacts of medium and high significance that have the same significance at all sites were filtered out e.g. social
- The key factors for decision-making:
  - Integration into the national grid
  - Seismic suitability
  - Impacts on dune geomorphology
  - Impacts on wetlands
  - Impacts on vertebrate fauna
  - Impacts on invertebrate fauna
  - Economic impacts

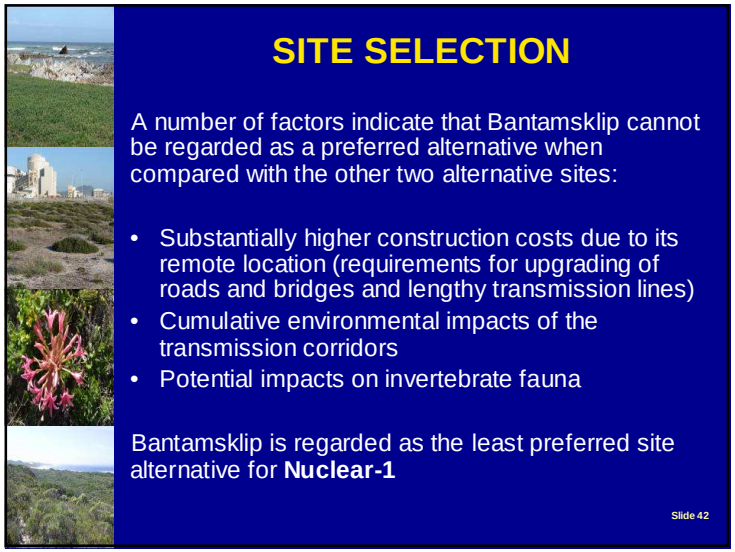
Slide 39

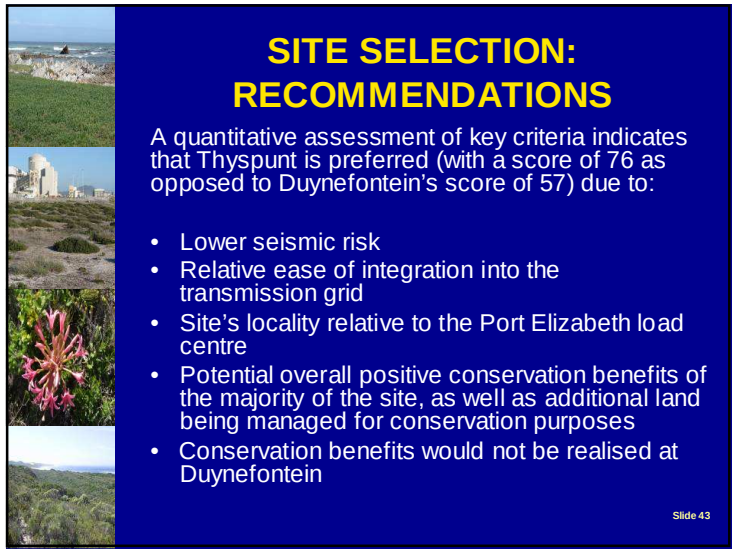
INTEGRATION INTO THE NATIONAL GRID

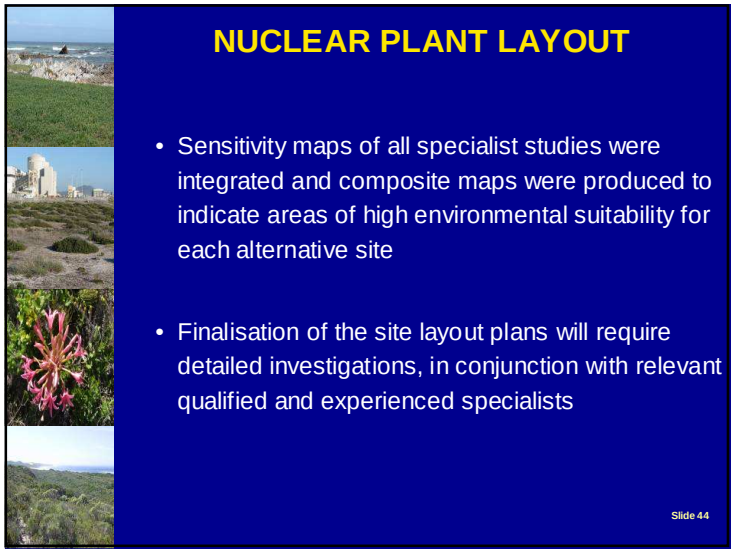
- Where do we require power stations for future load growth?
- Electricity needs to be transmitted from the high voltage yard at the power station through a network of transmission and distribution lines to end users
- To improve efficient, Eskom tries connect new base load generation to the closest load, where possible

Slide 40

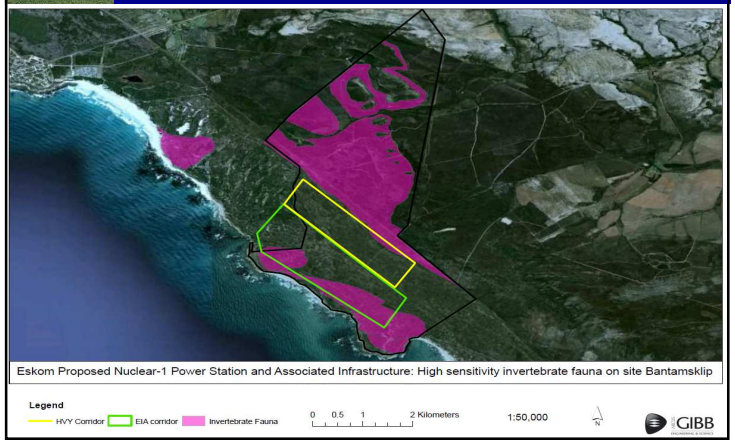

CAPE LOAD GROWTH AREAS
Growth requires network strengthening
Estimated load growth points
Polokwane
Pretoria
Johannesburg
Upington
Bloemfontein
Durban
East London
Port Elizabeth
Cape Town
Slide 41


SITE SELECTION
A number of factors indicate that Bantamsklip cannot be regarded as a preferred alternative when compared with the other two alternative sites:
• Substantially higher construction costs due to its remote location (requirements for upgrading of roads and bridges and lengthy transmission lines)
• Cumulative environmental impacts of the transmission corridors
• Potential impacts on invertebrate fauna
Bantamsklip is regarded as the least preferred site alternative for **Nuclear-1**
Slide 42

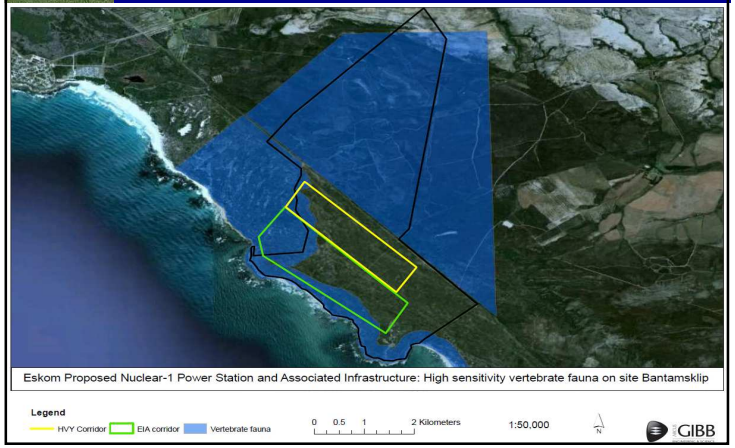

SITE SELECTION: RECOMMENDATIONS
A quantitative assessment of key criteria indicates that Thyspunt is preferred (with a score of 76 as opposed to Duynefontein's score of 57) due to:
• Lower seismic risk
• Relative ease of integration into the transmission grid
• Site's locality relative to the Port Elizabeth load centre
• Potential overall positive conservation benefits of the majority of the site, as well as additional land being managed for conservation purposes
• Conservation benefits would not be realised at Duynefontein
Slide 43


NUCLEAR PLANT LAYOUT
• Sensitivity maps of all specialist studies were integrated and composite maps were produced to indicate areas of high environmental suitability for each alternative site
• Finalisation of the site layout plans will require detailed investigations, in conjunction with relevant qualified and experienced specialists
Slide 44

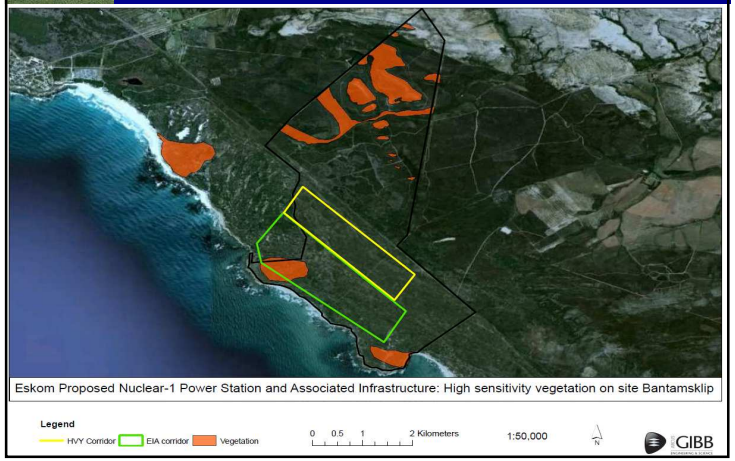
Site Sensitivity: Bantamsklip – Invertebrate Fauna



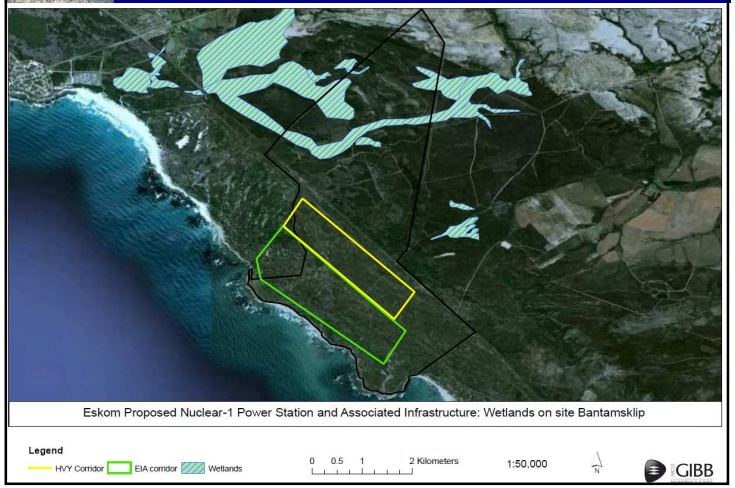
Site Sensitivity: Bantamsklip – Vertebrate Fauna



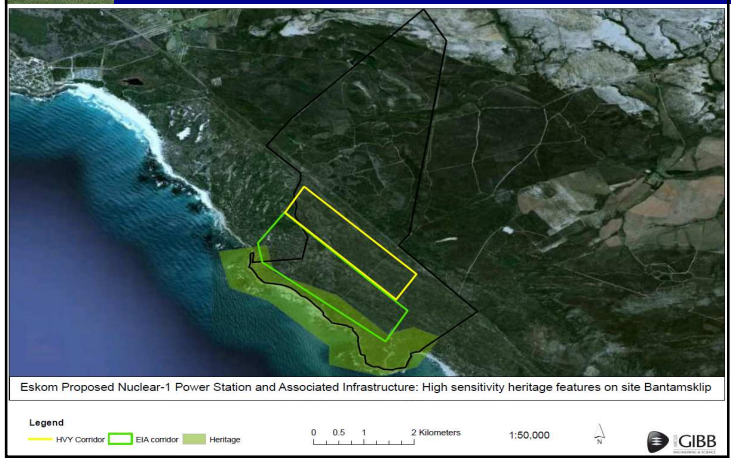
Site Sensitivity: Bantamsklip – Flora



Site Sensitivity: Bantamsklip – Wetlands



Site Sensitivity: Bantamsklip – Heritage



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity heritage features on site Bantamsklip

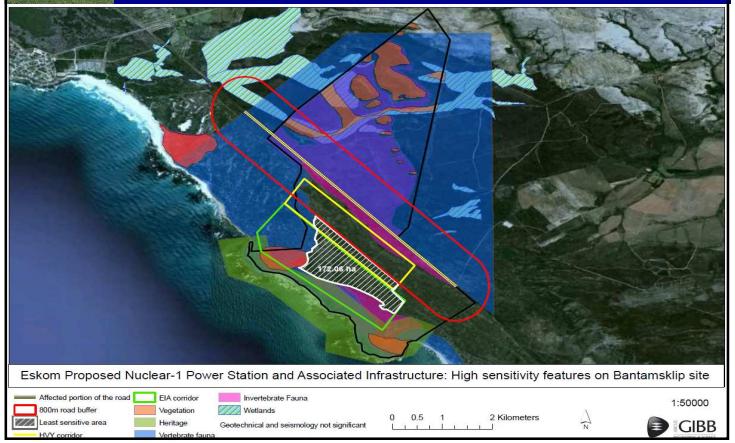
Legend
HV/Y Corridor | EIA corridor | Heritage

0 0.5 1 2 Kilometers

1:50,000

GIBB

Site Sensitivity: Bantamsklip – Combined Sensitivity



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity features on Bantamsklip site

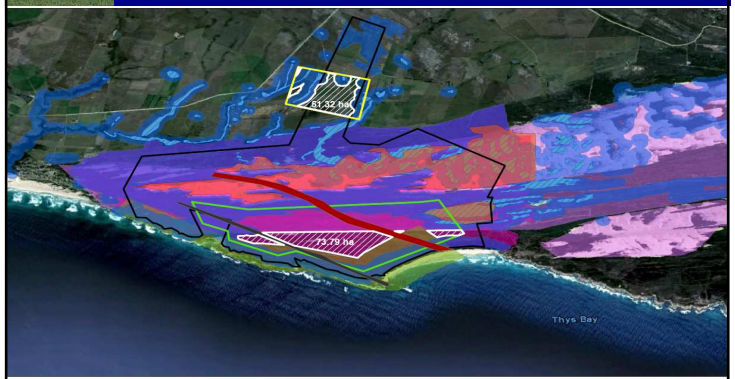
Affected portion of the road | EIA corridor | Invertebrate Fauna
800m road buffer | Vegetation | Wetlands
Least sensitive area | Heritage | Geotechnical and seismology not significant
HV/Y corridor | Vertebrate fauna

0 0.5 1 2 Kilometers

1:50000

GIBB

Site Sensitivity: Thyspunt – Combined Sensitivity



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity features on Thyspunt site

Legend
Least sensitive area | Vertebrate fauna | Dune geomorphology
HV/Y corridor | Heritage | Geology, Seismology and Geotechnics
EIA corridor | Wetlands | 'No-go' Zone of Seismic Hazard (Goudini/ Cederberg Transition)
Vegetation | Invertebrate fauna | 'No-go' Zone of Seismic Hazard (Skurweberg/Goudini Transition)

0 0.5 1 2 Kilometers

1:50000

GIBB

Site Sensitivity: Duynefontein – Combined Sensitivity

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity features on Duynefontein site

Legend
Affected portion of road | EIA corridor | Invertebrate fauna
800m road buffer | Heritage | Wetlands (not significant)
Least sensitive area | Vegetation | Geotechnical and seismology not significant

0 0.5 1 2 Kilometers

1:65000

GIBB

FRESH WATER SUPPLY AND UTILISATION OF ABSTRACTED GROUNDWATER

- At all sites desalination provides a guaranteed source of fresh water supply for the lifespan of the proposed nuclear power station without jeopardising the availability of fresh water to other users
- A desalinisation plant is therefore the preferred alternative for the provision of fresh water at all sites

Slide 53

INTAKE AND OUTLET OF WATER

- The installation of intake and outlet tunnels that obtain water from the ocean and feed cooling water into a storage area located adjacent to the cooling water pump houses is the only feasible alternative for all sites
- Outlet structures for cooling water and chemical effluent must be offshore
- All releases need to occur at the distances prescribed by the relevant specialists
- Provided that the specific mitigation measures identified in the marine biology report are adhered to, offshore effluent release is the recommended alternative

Slide 54

WASTE

- The only feasible alternative for the disposal of Low-Level and Intermediate-Level radioactive waste is disposal at the Vaalputs nuclear waste disposal site
- Vaalputs is the only authorised facility for this form of waste in SA. Vaalputs has sufficient capacity for the waste that will be generated by Nuclear-1
- With regards to High-Level Waste (spent fuel), the only alternative currently available in SA is long-term storage of the spent fuel in the nuclear power station
- Vaalputs may be considered as a disposal site for High-Level Waste in future

Slide 55

NO-DEVELOPMENT ALTERNATIVE

- Given the urgent power demand in South Africa, the No-Go alternative is not considered to be an alternative, as Eskom's mandate is to provide power for the country
- Eskom would likely apply to develop coal-fired power stations if the current application is declined as coal-fired generation is the only feasible base load alternative
- The life-cycle environmental impacts of coal-fired power generation are much greater than nuclear-fuelled power generation

Slide 56

NO-DEVELOPMENT ALTERNATIVE

- If Eskom does not utilise Bantamsklip and Thyspunt for nuclear development, it is likely to sell the properties
- The sale of the properties will be to a willing buyer at the market-related price, which may result in an alternative form of land use that may not involve management of the majority of the properties as nature reserves

Slide 57

KEY MITIGATION MEASURES

- Independent specialists have proposed mitigation measures to reduce potential negative impacts
- Draft EMP has been compiled as part of draft EIR and if authorised, it will be a legally binding document
- Compliance to EMP must be independently audited throughout construction and operation
- Mitigation measures for botanical impacts, vertebrate and invertebrate fauna, wetlands and heritage resources are particularly important
- Mitigation of heritage impacts will require the work of a site-specific team dedicated to excavations over a period of several years prior to construction

Slide 58

KEY MITIGATION MEASURES

- Qualified and experienced botanical, wetland, vertebrate and invertebrate fauna, dune geomorphology and heritage specialists will need to find an acceptable final access route alignment
- Additional groundwater studies are necessary to better understand the interaction between groundwater and wetlands

Slide 59

WAY FORWARD

- Comment Period – 6 March to 10 May (66 days)
- Public meetings and key stakeholder workshops will be held around the sites assessed from 23 March to 21 April. Minutes of meetings will be sent to attendees
- Comments received will be addressed in the Issues and Response Report in the Final EIR
- Final EIR will be submitted to the DEA for consideration and decision-making
- Final decision regarding EIA will be communicated to registered I&APs
- Construction of Nuclear-1 is subject to other approvals e.g. the NNR site safety decision and transmission lines EIA authorisations

Slide 60

WAY FORWARD

Written comments can be submitted by:

- Post: Public Participation Office, Nuclear 1 EIA, PO Box 503, Mtunzini, 3867, SA
- Fax: +27 (0) 35 340 2232
- Email: nuclear1@acerafrica.co.za

Slide 61

MEETING CONDUCT

- Please wait for the discussion session to ask questions
- Introduce yourselves prior to asking a question and indicate your specific interest
- You are welcome to ask the question in your mother tongue. Presentations will be in English
- One person at a time
- Work through the facilitator
- Show respect
- Focus on the issue not the person
- Be constructive
- Agree to disagree

Please switch off all cell phones!

Slide 62

THANK YOU

Slide 63

SPECIALIST STUDY RESULTS

Oceanographic Impacts

- Nuclear-1 will be built at least 10 m above high water mark
- Dispersion of the plume is considered to be acceptable at all alternative sites
- Relatively unfavourable dispersion of the thermal plume takes place at Thyspunt, where the plume hugs the coastline and shallow near shore areas
- The most efficient dispersal of the thermal plume will occur at Duynefontein
- Potential for suspended sediment plumes to impact upon tourism (e.g. shark cage diving at Dyer Island) should be mitigated

Slide 64

SPECIALIST STUDY RESULTS

Impact on Transportation Systems

- Duynefontein does not require significant upgrades to transport systems during construction and operation
- Costly upgrades are required to the public transport system for Bantamsklip and Thyspunt. Upgrades would be significant for Bantamsklip

SPECIALIST STUDY RESULTS

Impact on Fresh Water Supply

- There are no rivers or perennial streams at any of the alternative sites and construction and operation of the power station will thus not have any direct impacts on surface water supply schemes or catchments
- As groundwater is near the end of the flow path, the only existing groundwater use that could be directly affected are the coastal springs and potential impacts would be of a localised extent

SPECIALIST STUDY RESULTS

Impact on Hydrological Conditions

- Direct hydrological impacts at all alternative sites are of a low significance
- Potential impacts relate to flood hazard at low points along the coastal frontage of the EIA corridor and increased surface run-off volumes and peaks

SPECIALIST STUDY RESULTS

Impact on Geotechnical Suitability

- Potential impacts related to slope stability imposing safety risks are of a low significance and consequences at all sites, as slope stability design techniques will be employed to deal with these issues
- Potential impacts associated with larger volume excavations in sands will be significant at all sites, depending on the final footprint, and will need mitigation

SPECIALIST STUDY RESULTS

Impacts on Geological Risk

- There is a low geological risk and no disqualifiers at any of the sites and surrounding environment
- Potential impacts related to geological risk is interrelated to the seismic hazard of the site and water quality in the area

SPECIALIST STUDY RESULTS

Agriculture Impacts

- Agriculture around Thyspunt is based mainly on milk production (2008: R150 m per annum) -
- Fynbos farming prevails at the Bantamsklip although there is some dairy as well as grape, beef, sheep and game farming (2008: R29 m per annum)
- Duynefontein is based on mixed farming (2008: R75 m per annum)

SPECIALIST STUDY RESULTS

Agriculture Impacts

- Duynefontein – no impact on agriculture during construction and operation
- Bantamsklip – negative potential impact of dust (construction). Potential of less than 5% increase in local market due to water limitations that restrict expansion
- Thyspunt – negative potential impact of dust (construction). Potential for positive impact on production by increasing the size of the local market for fresh produce

SPECIALIST STUDY RESULTS

Air Quality Impacts

- Sources of impacts during construction would be fugitive dust emissions from general construction activities and emissions from vehicles and equipment
- Potential sources of non-radioactive air emissions during operation:
  - Carbon, sulfur and nitrogen oxides in the exhaust gases from engines of the backup electricity generators
  - Formaldehyde and carbon monoxide emitted by the insulation when installations go back into operation after servicing
  - Ammonia discharged as the temperature rises in the steam generators during start-up

SPECIALIST STUDY RESULTS

Air Quality Impacts

- Low predicted impacts of non-radiological pollutants when compared to human health risk and vegetation impact criteria
- During normal operation, trace quantities of radiological materials will be released to the environment
- Dispersion simulations included a number of identified Design Basis Accidents. Predicted highest whole body dose at 1 km downwind of power station following such accidental releases was shown to be below the maximum acceptable limit of 50 mSv for a single event, as stipulated by the NNR

SPECIALIST STUDY RESULTS

Noise Impacts

- Potential negative noise impacts are of low or very low significance
- There will be no potential noise impact on adjacent land surrounding any of the sites during construction and operation due to large distances between power station and site boundary
- OCGT power plant (emergency power) will be placed on property boundary at Thyspunt, which will result in a potential noise impact on residents situated within 1000 m of the plant

SPECIALIST STUDY RESULTS

Visual Impact

- Due to the size of a nuclear power station and its location in relative open, treeless landscapes along the coast, with negligible visual screening by landforms, potential visual impacts at all sites may be significant
- The use of screens, appropriate lighting, appropriate positioning of spoil dumps and attention to the colour of large structures etc. is recommended

SPECIALIST STUDY RESULTS

Impacts of Emergency Planning

- Duynefontein is currently in proximity to the Koeberg Nuclear Power Station, therefore the emergency response infrastructure and systems are in place
- Outcomes of the Safety Analyses will determine if the current infrastructure would be adequate to cope with the demands of the proposed power station
- Bantamsklip and Thyspunt will require substantial upgrading of infrastructure since they are in remote areas

SPECIALIST STUDY RESULTS

Site Control Impacts

Duynefontein

- Site already developed as a NPS with full access and site control
- It has full visitor facilities with a Visitor's Centre
- Access will be via new access control points and upgraded existing roads leading off the R27

Thyspunt

- Access to the site is currently limited and controlled by fencing and electronic/locked gates
- A new access control point will be developed on the western or eastern owner controlled boundary and at the outer and inner security fence

Slide 77

SPECIALIST STUDY RESULTS

Site Control Impacts

- Bantamsklip
  - Access to the site is currently limited and controlled by fencing and gates
  - The R43 tarred road passes through the site

Slide 78

SPECIALIST STUDY RESULTS

Human Health Impacts

- The NNR will issue a license for the establishment of an NNR at any particular site only if full compliance with the radiological dose limits and dose constraints is demonstrated, taking into account the principles of ALARA and all other matters relating to the overall safety case

Slide 79

SPECIALIST STUDY RESULTS

Geohydrological Impacts

Six potential environmental impacts involving groundwater have been identified:

- Flooding by groundwater
- Depletion of local aquifers
- Degradation of ecologically sensitive wetlands / phreatophytes/ seeps /springs
- Contamination
- Degradation of infrastructure
- Contamination of the shore zone

- The impacts are of low significance due to the sites being situated in coastal zones with groundwater being at/near the end of its flow path and minimal downstream receptors

Slide 80

SPECIALIST STUDY RESULTS

1:100 Flood Line

The 1:100 year flood lines have been calculated for each site for the present day and 2075 (based on predicted sea level rise).

	Present day: Excluding climate change		Year 2075: Including climate change	
Site	Min [m MSL]	Max [m MSL]	Min [m MSL]	Max [m MSL]
Thyspunt	4.4	9.9	5.7	11.2
Bantamsklip	4.0	9.4	4.8	10.8
Duynefontein	4.4	6.3	5.3	7.4

ESKOM HOLDINGS LIMITED

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR A PROPOSED NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE DEA REF. No.:12/12/20/944

EIA Phase Public Meeting:
Review of Draft Environmental Impact Report

March / April 2010

Slide 1

PROPOSED AGENDA

1. Sign attendance register and discussion with team: 17:00 – 17:50
2. Welcome and introductions: 18:00 – 18:10
3. Presentation of EIA and EMP findings: 18:10 – 19:00
4. Discussion: 19h00 – 19:50
5. Way forward and close: 19:50 – 20:00

Slide 2

MEETING CONDUCT

- Please wait for the discussion session to ask questions
- Introduce yourselves prior to asking a question and indicate your specific interest
- You are welcome to ask the question in your mother tongue. Presentations will be in English
- One person at a time
- Work through the facilitator
- Show respect
- Focus on the issue not the person
- Be constructive
- Agree to disagree

Please switch off all cell phones!

Slide 3

MEETING OBJECTIVES

- The focus of the meeting is to provide an opportunity for Interested and Affected Parties (I&APs) to comment on the findings of the EIA and the Draft Environmental Impact Assessment Report (EIR)
- Provide an opportunity for I&APs to seek further clarity on the proposed project, the EIA phase and the Draft EIR
- Provide I&APs with an opportunity for interaction with the EIA team
- Recording of issues - the proceedings will be recorded and used to compile meeting minutes. Comments will be included in the Issues and Response Report (IRR) and changes will be made to the Final EIR, where necessary

Slide 4

KEY ISSUES

- Some people are opposed to and others are in favour of a nuclear power station at Bantamsklip, Thyspunt and Duynefontein
- Concerns about the potential impacts on human health and safety
- Local residents share a deep-felt connection to the area and have a strong “sense of place”
- A power station could potentially be unsightly
- Tourism is linked to conservation and preservation of the coastline

KEY ISSUES

- Marine life could potentially be adversely affected by altered sea temperature and turbulence caused by inflow and output of sea water to the plant
- Concern that commercial and recreational fishing may be negatively impacted
- Light pollution
- Concerns about potential drop in property values
- Concern about cost of constructing a power station
- Some people expressed a lack of trust in the EIA
- Storage of hazardous waste
- Renewable (‘green’) energy (e.g. wind, solar) vs. nuclear

PROJECT MOTIVATION

- Increasing demand for electricity (> 4% growth per annum)
- Projected requirement for more than 40 000 MW of new electricity generating capacity over the next 20 years
- In SA only coal and nuclear power are solutions for base load generation, while gas turbines, hydroelectric power stations and pumped storage schemes are used for peaking and emergency electricity generation

PROPOSED ACTIVITY

- Eskom proposes the construction, operation and decommissioning of a conventional nuclear power station and associated infrastructure either in the Eastern or Western Cape
- A nuclear power station of the Pressurised Water Reactor (PWR) type technology e.g. Koeberg Power Station
- The transmission power lines are subject to separate environmental authorisation processes

TRANSMISSION (TX) LINE EIAs

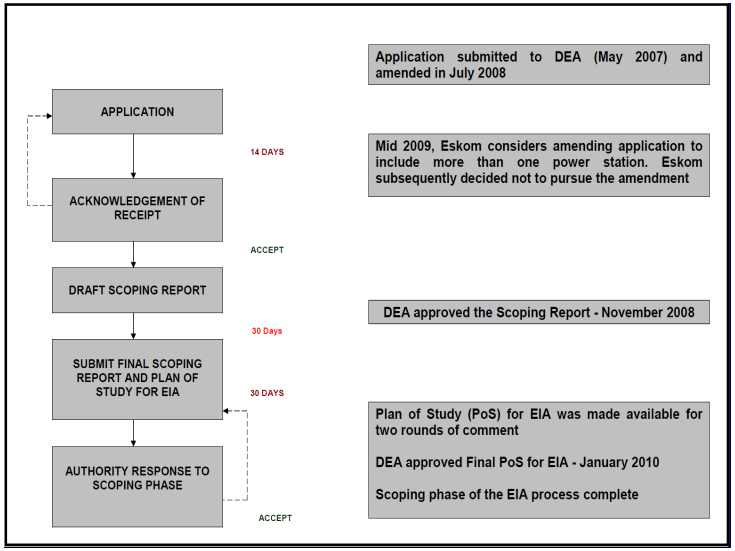
- Bantamsklip – Scoping phase has been extended to include Multi-stakeholder Workshops and additional public consultation. Revised Draft Scoping Report will be made available for public comment
- Thyspunt – Scoping Report accepted by Authorities and EIA phase has commenced
- Duynefontein – Scoping Report accepted by Authorities and EIA phase has commenced

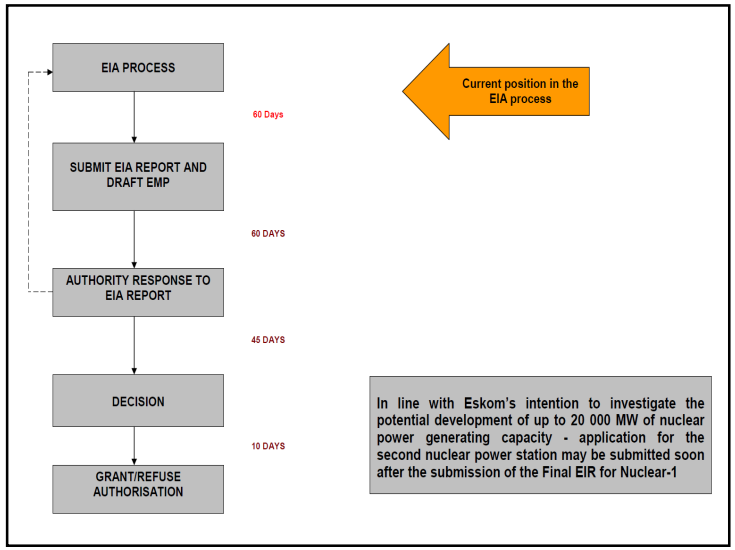
PROJECT BACKGROUND

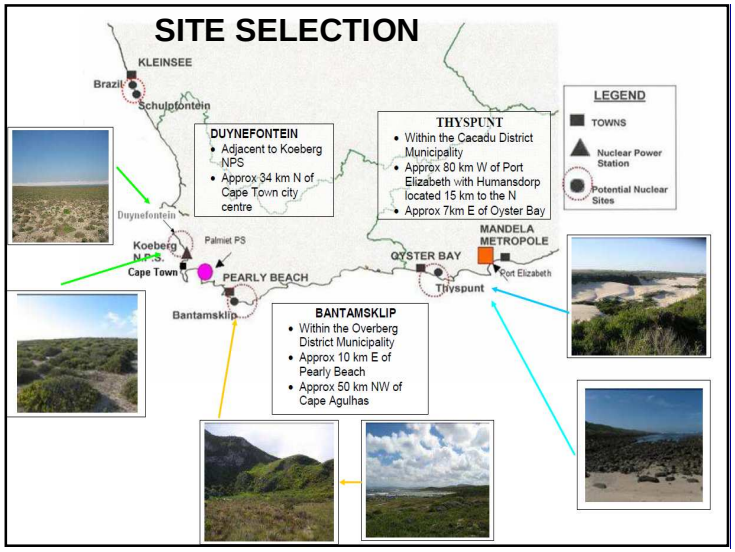
- The power station and directly associated infrastructure will require approximately 31 ha
- The footprint assessed makes provision for the potential future expansion of a power station to 10 000 MW or the maximum carrying capacity
- The proposed nuclear power station will include nuclear reactor, turbine complex, spent fuel, nuclear fuel storage facilities, waste handling facilities, intake and outfall pipelines, desalinisation plant and auxiliary service infrastructure

ENVELOPE OF CRITERIA

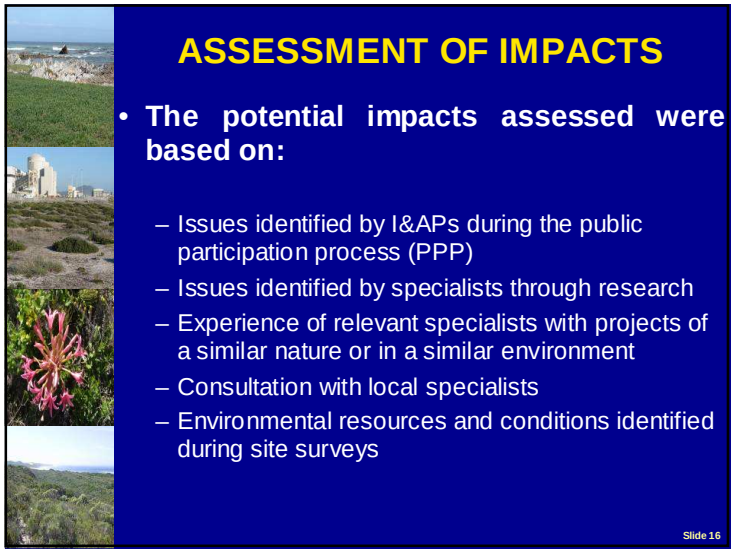
- Detailed description of proposed nuclear plant is not available, as preferred supplier has not been selected
- Approach used has been to specify enveloping environmental and other relevant requirements, to which the power station design and placement on site must comply
- Enveloping criteria represent the most conservative parameters associated with the various plant alternatives within the available PWR technology




EIA PROCESS
60 Days
SUBMIT EIA REPORT AND DRAFT EMP
60 DAYS
AUTHORITY RESPONSE TO EIA REPORT
45 DAYS
DECISION
10 DAYS
GRANT/REFUSE AUTHORISATION
Current position in the EIA process
In line with Eskom's intention to investigate the potential development of up to 20 000 MW of nuclear power generating capacity - application for the second nuclear power station may be submitted soon after the submission of the Final EIR for Nuclear-1


SITE SELECTION
KLEINSEE
Brazil
Schulpfontein
DUYNEFONTEIN
• Adjacent to Koeberg NPS
• Approx 34 km N of Cape Town city centre
THYSPUNT
• Within the Cacadu District Municipality
• Approx 80 km W of Port Elizabeth with Humansdorp located 15 km to the N
• Approx 7km E of Oyster Bay
LEGEND
TOWNS
Nuclear Power Station
Potential Nuclear Sites
Duynefontein
Koeberg N.P.S.
Palmiet PS
Cape Town
MANDELA METROPOLE
OYSTER BAY
Port Elizabeth
Thyspunt
PEARLY BEACH
Bantamsklip
BANTAMSKLIP
• Within the Overberg District Municipality
• Approx 10 km E of Pearly Beach
• Approx 50 km NW of Cape Agulhas


LOCALITY
Krom River
Oyster Bay
5.5 km
10 km
St. Francis Bay
Thysbaai
Thyspunt
11.5 km
Cape St. Francis
Indian Ocean
Slide 15


ASSESSMENT OF IMPACTS
• The potential impacts assessed were based on:
– Issues identified by I&APs during the public participation process (PPP)
– Issues identified by specialists through research
– Experience of relevant specialists with projects of a similar nature or in a similar environment
– Consultation with local specialists
– Environmental resources and conditions identified during site surveys
Slide 16

METHODOLOGY

- Independent specialists assessed potential positive and negative impacts with and without mitigation
- According to the specialists, all potential negative impacts can be mitigated
- There are no fatal flaws at any of the alternative sites

SPECIALIST STUDIES

- **Physical Impacts**
  - Geology and geological risk
  - **Seismological risk**
  - Geo-hydrology
  - Geotechnical characteristics
- **Biophysical Impacts**
  - **Dune geomorphology**
  - **Flora**
  - **Fauna (Invertebrate and Vertebrate)**
  - Hydrology
  - **Freshwater ecosystems**
  - Oceanographic conditions
  - **Marine biology**
  - Air quality
  - Assessment of the1:100 year floodline

SPECIALIST STUDIES

- **Socio-economic Impacts**
  - **Social**
  - **Economic**
  - Noise
  - Visual
  - **Heritage and cultural resources**
  - Waste
  - **Tourism**
  - **Agriculture**
- As per the NNR / DEA co-operative agreement, a number of specialist studies related to human health risk and safety were commissioned and included in this EIR for information (4 studies)

SPECIALIST STUDY RESULTS

- **Seismological Risk**

Seismic studies indicate that the design basis for the respective sites in terms of peak ground acceleration values (PGA) are as follows:

- Duynefontein – PGA ~0.30 g
- Bantamsklip - PGA ~0.23 g
- Thyspunt - PGA ~0.16 g

SPECIALIST STUDY RESULTS

- **Impacts on Dune Geomorphology**
  - Groundwater does not 'daylight' at Duynefontein or Bantamsklip sites: access roads and transmission lines can be built across the mobile dunes
  - The interaction between dune systems and wetlands is complex at Thyspunt, since groundwater 'daylights' in many inter-dune areas:
  - Haul roads and conveyor belts between the nuclear power station in the south and the HV yard in the north, may cause potential negative impacts on dune geomorphology at Thyspunt are more extensive than at the other two sites

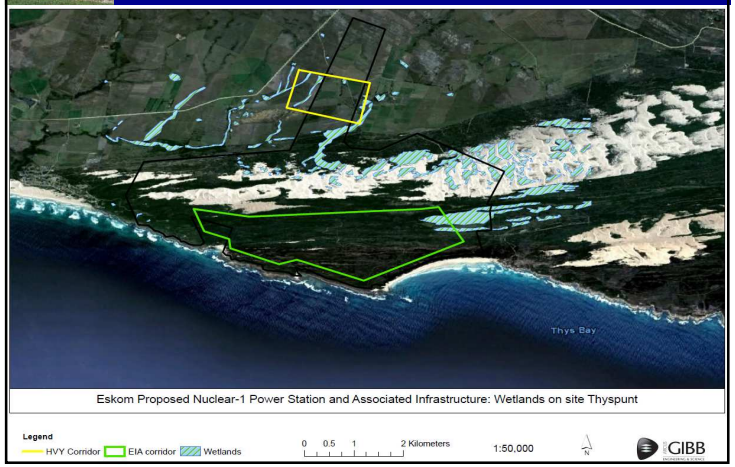
SPECIALIST STUDY RESULTS

- **Impacts on Flora**
  - Bantamsklip will experience the least potential negative impact on plant communities and species, as the ecosystems on this site are fairly common along this section of coastline, provided that the power station is situated away from the limestone fynbos
  - Thyspunt has by far the greatest diversity of vegetation communities, including extensive and highly sensitive wetlands

SPECIALIST STUDY RESULTS

- **Impacts on Wetlands**
  - The development of a nuclear power station at Duynefontein is unlikely to result in any unmitigable, highly significant negative impacts on wetlands
  - Development of the proposed nuclear power station at Bantamsklip would not be associated with any unmitigable impacts to wetland systems
  - The Thyspunt wetland systems are complex and potential negative impacts could occur without appropriate mitigation

THYSPUNT WETLANDS



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: Wetlands on site Thyspunt

SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Vertebrates**
  - The amount of land that is not of high faunal sensitivity at **Duynefontein** is more than sufficient for the nuclear power station
  - At **Bantamsklip** the nuclear power station could have significant negative potential impacts, without mitigation, because of the impacts on faunal habitats within the footprint
  - At **Thyspunt** a nuclear power station would have significant potential negative impacts, without mitigation, because of the direct impacts on faunal habitats within the footprint, the development of two major new access roads, and the need for a development corridor across a large mobile dunefield

SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Invertebrates**
  - The potential impacts of the nuclear power station on the terrestrial invertebrate communities are very similar for all alternative sites, but there are site-specific differences
  - None of the butterflies occurring in the Cape Flats Dune Fynbos area around **Duynefontein** are endangered or endemic
  - Duynefontein of low to very low sensitivity
  - The new species of ant found at Duynefontein is regarded as a generalist and is likely to be found on other areas of the site

SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Invertebrates**
  - Thyspunt has the highest butterfly diversity and conservation value of the alternative sites.
  - From the viewpoint of potential positive impacts of the nuclear power station, Duynefontein already positively benefits under the management of Eskom, which means that it would experience the least improvement in conservation status
  - Bantamsklip and Thyspunt would benefit substantially from formal protection status. The project would have a potential net positive impact on invertebrate communities at Bantamsklip and Thyspunt

SPECIALIST STUDY RESULTS

- **Economic Impacts**
  - The positive macro-economic impacts will be greatest at Bantamsklip and Duynefontein, and less at Thyspunt, as the sites are situated in a province with a larger, more diversified economy. Nuclear-1 would result in less dislocation of economic activities if located at Duynefontein than at either of the other two sites
  - Macroeconomic indicators favour Duynefontein and Bantamsklip
  - The cost-effectiveness analysis indicates that Thyspunt is slightly favoured relative to Duynefontein and more favoured relative to Bantamsklip.
  - The differences between the alternative sites are slight, and all the sites would have positive economic impacts both on the local area and the province in which they are situated
  - The economic impact assessment gives greater weight to the cost-effectiveness analysis, which favours Thyspunt

SPECIALIST STUDY RESULTS

- **Heritage Impacts**
  - All alternative sites contain significant heritage resources.
  - The amount of Late Stone Age heritage that will be potentially impacted at Duynefontein will be substantially less than that of Bantamsklip and Thyspunt
  - Duynefontein is palaeontologically highly sensitive. Bantamsklip is almost as sensitive as Thyspunt in terms of its heritage richness

SPECIALIST STUDY RESULTS

Marine Biology Impacts

- Potential impacts similar at all sites and the impacts can be mitigated if the proposed designs are implemented as planned
- Potentially the most significant impacts are:
  - Disruption of the marine environment through the offshore disposal of sediment
  - Release of warmed cooling water
- Spoil disposal will have a potentially highly significant long-term negative impact on the marine environment within a localised area (3 km^2 initially to 6 km^2 [2 x 3 km] after 5 years) – acceptable impact according to marine specialist

SPECIALIST STUDY RESULTS

Marine Biology Impacts

- Impacts on Chokka fishing industry:
  - Chokka spawn at depths less than 50m
  - Recommended that spoil must be released in depths more than 50m (between 1.4 km and 1.8 km offshore) and medium pumping rate
  - Warm water release recommendations to aid heat dissipation:
    - tunnelled design;
    - multiple release points;
    - high flow rate; and
    - above sea floor.

SPECIALIST STUDY RESULTS

Marine Biology Impacts

- Radionuclides such as Cesium (Cs-137) and Strontium (Sr-90) present in oceans alongside other elements since 1940s
- Background levels of Cesium have been recorded at Koeberg before the nuclear power station was established
- Detected in mussels, sand mussels and fish below levels at which further investigation would be required
- Strontium not recorded in marine organisms at Koeberg
- Due to few organisms in which Cesium has been recorded, low concentrations and lack of Strontium, these nuclides have no detectable potential impact on marine organisms

SPECIALIST STUDY RESULTS

Social Impacts

- Potential negative impacts relate to accommodation for temporary workers during construction
- Potential positive impact is the provision of electricity and related benefits to the broader national and regional economies
- Perceived risks associated with nuclear incidents could potentially lead to a change in attitude and behaviour – reliable information is important

SPECIALIST STUDY RESULTS

Tourism Impacts

- Communities at Thyspunt and Bantamsklip have expressed opposition to the proposed power station
- Thyspunt community highlighted the premium nature of the top-end coastal vacation destination
- Bantamsklip community emphasised the new and fragile nature of the developing tourism product and the local dependence thereon
- Some Duynefontein tourism stakeholders have personal objections to another power station, however they recognise the potential for increased business and promote a generally positive outlook for tourism

SPECIALIST STUDY RESULTS

Tourism Impacts

- Assessment takes account decline in nature-based tourism as well as an increase in business-related tourism associated with the proposed nuclear power station
- Duynefontein – limited potential impact during construction; potential 1.4% improvement during operation
- Bantamsklip - potential 5% positive impact during construction; a potential 8.6% improvement during operation
- Thyspunt – potential 7.9% negative impact during construction; potential zero impact during operation

SPECIALIST STUDY RESULTS

Agricultural Impacts

- Agriculture around Thyspunt is based mainly on milk production (2008: R150 m per annum)
- Fynbos farming prevails at the Bantamsklip although there is some dairy as well as grape, beef, sheep and game farming (2008: R29 m per annum)
- Duynefontein is based on mixed farming (2008: R75 m per annum)

SPECIALIST STUDY RESULTS

Agricultural Impacts

- Duynefontein – no impact on agriculture during construction and operation
- Bantamsklip – negative potential impact of dust (construction). Potential of less than 5% increase in local market due to water limitations that restrict expansion
- Thyspunt – negative potential impact of dust (construction). Potential for positive impact on production by increasing the size of the local market for fresh produce

PROJECT ALTERNATIVES

- **Location of the power station (i.e. site selection)**
- Forms of power generation
- Nuclear plant types
- **Layout of the nuclear plant**
- **Fresh water supply and utilisation of abstracted groundwater**
- Management of brine
- Intake of sea water
- **Outlet of water**
- Management of spoil material
- Access to Thyspunt
- **Waste**
- **The no-development alternative (i.e. 'No-Go')**

SITE SELECTION

- Site selection was based on:
  - Results of independent specialist studies: the significance of potential impacts, with mitigation, at each of the sites
  - An integration workshop, involving all specialists, where ranking of the sites and key decision factors were agreed on
  - Quantified ranking taking into account the key decision factors

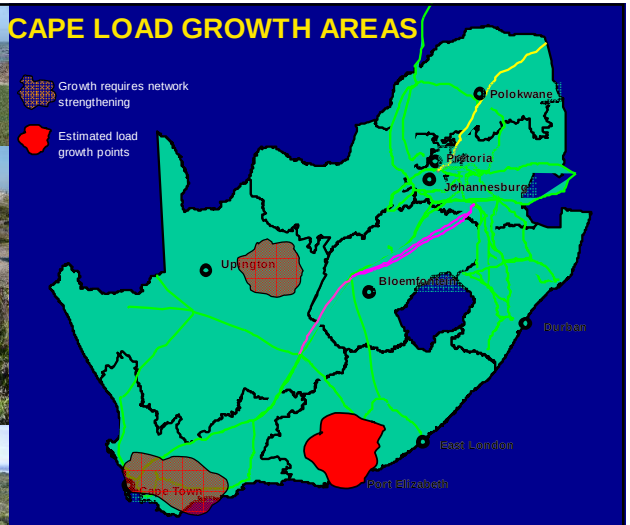
SITE SELECTION

- Impacts of low significance at all alternative sites filtered out e.g. noise, visual impacts, hydrology
- Impacts of medium and high significance that have the same significance at all sites were filtered out e.g. social
- The key factors for decision-making:
  - Integration into the national grid
  - Seismic suitability
  - Impacts on dune geomorphology
  - Impacts on wetlands
  - Impacts on vertebrate fauna
  - Impacts on invertebrate fauna
  - Economic impacts

INTEGRATION INTO THE NATIONAL GRID

- Where do we require power stations for future load growth?
- Electricity needs to be transmitted from the high voltage yard at the power station through a network of transmission and distribution lines to end users
- To improve efficiency, Eskom tries connect new base load generation to the closest load, where possible

CAPE LOAD GROWTH AREAS



SITE SELECTION

A number of factors indicate that Bantamsklip cannot be regarded as a **preferred alternative** for Nuclear-1 when compared with the other two alternative sites:

- Substantially higher construction costs due to its remote location (requirements for upgrading of roads and bridges and lengthy transmission lines)
- Cumulative environmental impacts of the transmission corridors
- Potential impacts on invertebrate fauna

Bantamsklip is regarded as the least preferred site alternative for Nuclear-1

SITE SELECTION: RECOMMENDATIONS

A quantitative assessment of key criteria indicates that Thyspunt is preferred (with a score of 76 as opposed to Duynefontein's score of 57) due to:

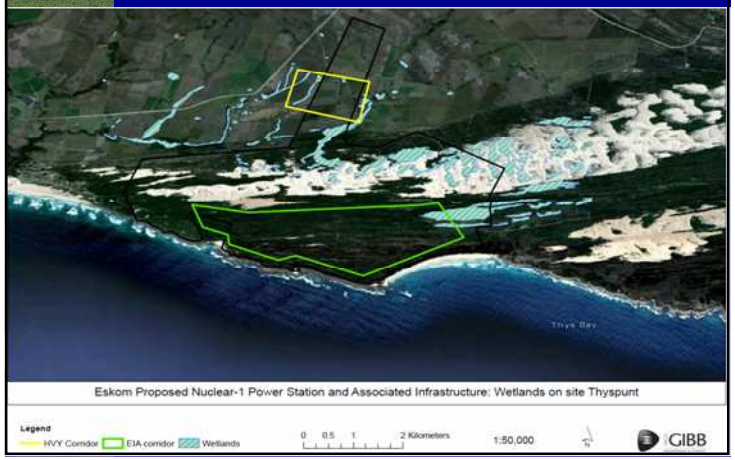
- Lower seismic risk
- Relative ease of integration into the transmission grid
- Site's locality relative to the Port Elizabeth load centre
- Potential benefits of the conserving the majority of the site (2400ha), as well as additional land being managed for conservation purposes
- Conservation benefits would not be realised at Duynefontein

NUCLEAR PLANT LAYOUT

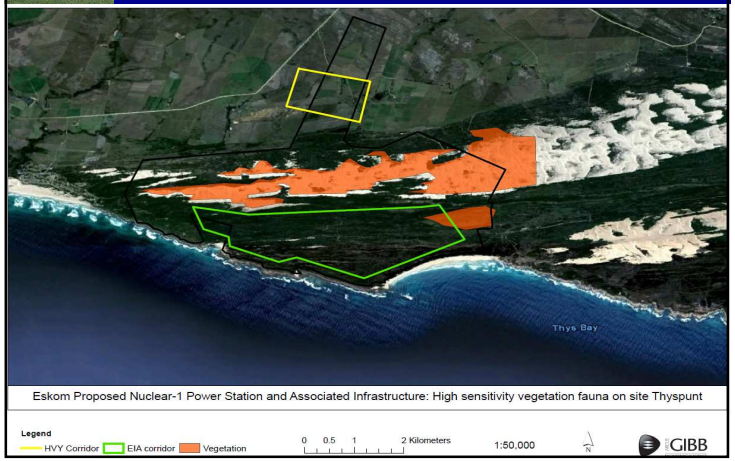
- Sensitivity maps of all specialist studies were integrated and composite maps were produced to indicate areas of high environmental suitability for each alternative site

- Finalisation of the site layout plans will require detailed investigations, in conjunction with relevant qualified and experienced specialists

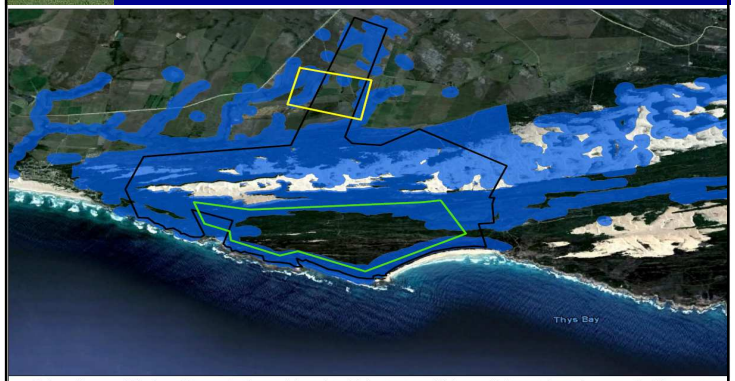
Site Sensitivity: Thyspunt – Wetlands



Site Sensitivity: Thyspunt – Flora



Site Sensitivity: Thyspunt – Vertebrate Fauna



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity vertebrate fauna on site Thyspunt

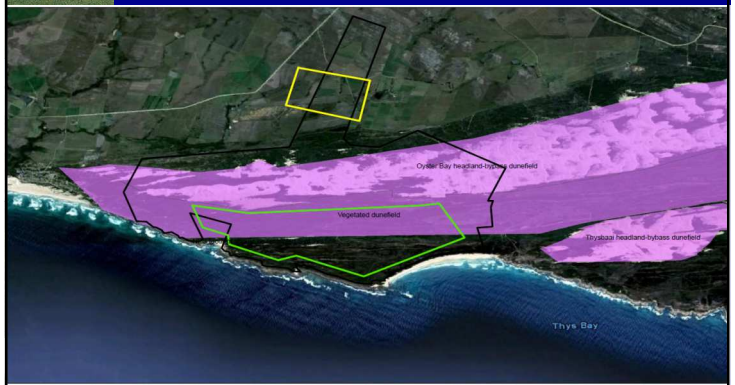
Legend
HVY Corridor
EIA corridor
Vertebrate Fauna
0 0.5 1 2 Kilometers
1:50,000
N
GIBB

Site Sensitivity: Thyspunt – Heritage

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity heritage features on site Thyspunt

Legend
HVY Corridor
EIA corridor
Heritage
0 0.5 1 2 Kilometers
1:50,000
N
GIBB

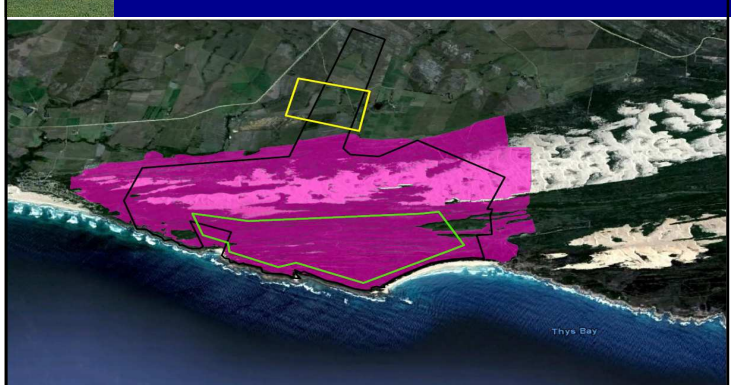
Site Sensitivity: Thyspunt – Dunefields



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity dunefields on site Thyspunt

Legend
HVY Corridor
EIA corridor
Dune Geomorphology
0 0.5 1 2 Kilometers
1:50,000
N
GIBB

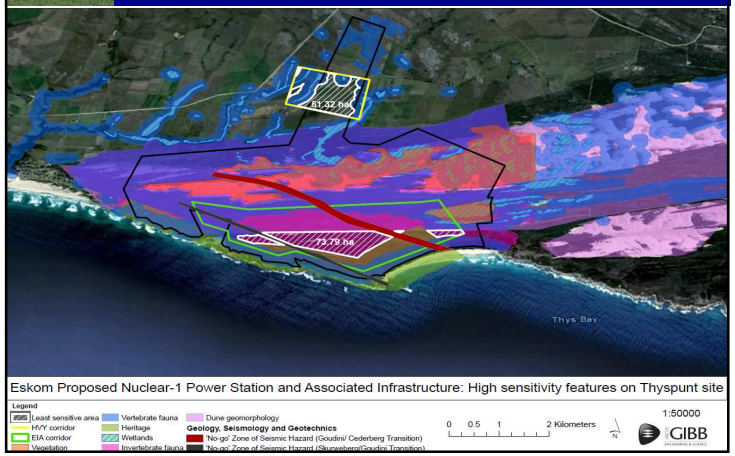
Site Sensitivity: Thyspunt – Invertebrate Fauna



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity invertebrate fauna on site Thyspunt

Legend
HVY Corridor
EIA corridor
Invertebrate Fauna
0 0.5 1 2 Kilometers
1:50,000
N
GIBB

Site Sensitivity: Thyspunt – Combined Sensitivity



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity features on Thyspunt site

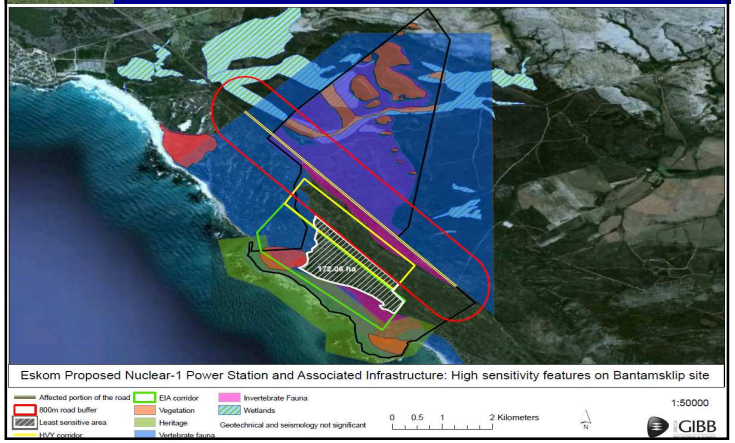
Legend
Least sensitive area
HV/Y corridor
EIA corridor
Vegetation
Vertebrate fauna
Heritage
Wetlands
Invertebrate fauna
Dune geomorphology
Geology, Seismology and Geotechnics
'No-go' Zone of Seismic Hazard (Goudini/ Cederberg Transition)
'No-go' Zone of Seismic Hazard (Skurweberg/Goudini Transition)

0 0.5 1 2 Kilometers

1:50000

GIBB

Site Sensitivity: Bantamsklip – Combined Sensitivity



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity features on Bantamsklip site

Affected portion of the road
800m road buffer
Least sensitive area
HV/Y corridor
EIA corridor
Vegetation
Heritage
Vertebrate fauna
Invertebrate Fauna
Wetlands
Geotechnical and seismology not significant

0 0.5 1 2 Kilometers

1:50000

GIBB

Site Sensitivity: Duynefontein – Combined Sensitivity

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity features on Duynefontein site

Legend
Affected portion of road
800m road buffer
Least sensitive area
EIA corridor
Heritage
Vegetation
Invertebrate fauna
Wetlands (not significant)
Geotechnical and seismology not significant

0 0.5 1 2 Kilometers

1:65000

GIBB

CONSERVATION BENEFITS

- In spite of potentially significant negative impacts, all biophysical specialists in agreement:
  - no fatal flaws at any of the sites;
  - positive impacts for conservation of the area outside the footprint of the power station at Thyspunt and Bantamsklip are significant
- Acquisition of properties for conservation outside the current property for wetland conservation
- To guarantee conservation benefits, property's conservation status must be secured, i.e. must be declared as an official nature reserve

FRESH WATER SUPPLY AND UTILISATION OF ABSTRACTED GROUNDWATER

- At all sites desalination provides a guaranteed source of fresh water supply for the lifespan of the proposed nuclear power station without jeopardising the availability of fresh water to other users
- A desalinisation plant is therefore the preferred alternative for the provision of fresh water at all sites

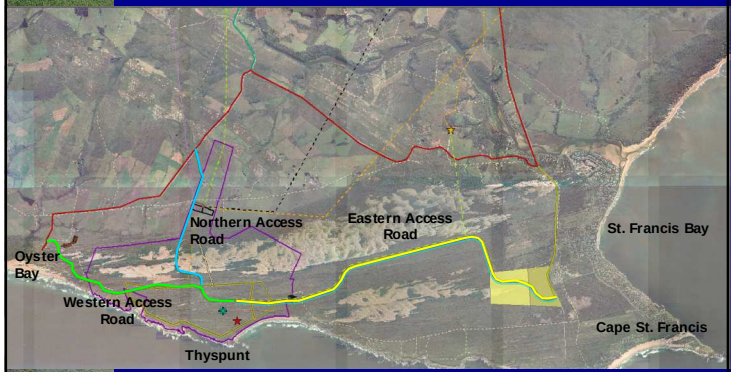
INTAKE AND OUTLET OF WATER

- The installation of intake and outlet tunnels that obtain water from the ocean and feed cooling water into a storage area located adjacent to the cooling water pump houses is the only feasible alternative for all sites
- Outlet structures for cooling water and chemical effluent must be offshore
- All releases need to occur at the distances and depths prescribed by the relevant specialists
- Provided that the specific mitigation measures identified in the marine biology report are adhered to, offshore effluent release above the sea floor is the recommended alternative

MANAGEMENT OF SPOIL MATERIAL

- Fine spoil must be disposed of in the marine environment at all sites
- Spoil material that cannot be pumped to sea, must be disposed of on land and used for activities like levelling of the HV yard and to minimise the footprint on the terrestrial environment
- Visual impact of spoil dumps must be minimised
- Transport of spoil to the panhandle at Thyspunt via conveyor belt is not recommended due to the Oyster Bay mobile dune system

ACCESS ROAD ALTERNATIVES



ACCESS TO THE THYSPUNT SITE

- The Eastern Access Route is required by Eskom for heavy loads and there is no alternative to this route
- The Western Access Route is favoured over the Northern Access Route, with respect to the potential impacts on agriculture, flora, wetlands, dune geomorphology and heritage resources
- The Northern Access Route is favoured only in terms of visual impacts
- Western Access Road is the preferred access road for the Thyspunt site

WASTE TYPES

- Low-level waste: ± 940 drums (50 – 100 kg per drum) per year
- Intermediate level waste: ± 160 x 6.3 ton concrete drums per year
- High level waste: ± 1880 tons of spent fuel over life of power station (60 years)

WASTE DISPOSAL

- Only feasible alternative for the disposal of Low-Level and Intermediate-Level radioactive waste is Vaalputs nuclear waste disposal site in Northern Cape
- This is the only authorised facility for this form of waste in SA. Vaalputs has sufficient capacity for the waste that will be generated by Nuclear-1
- With regards to High-Level Waste, only alternative currently available in SA is long-term storage of the spent fuel in the power station – common practice internationally
- Vaalputs may be considered as a disposal site for High-Level Waste in future

WASTE DISPOSAL

- National Radioactive Waste Management Institute established by the National Radioactive Waste Management Institute Act No. 53 of 2008)
- Act came into effect in Dec 2009
- Subject to NNR regulations
- Institute will transfer responsibility from NECSA

NO-DEVELOPMENT ALTERNATIVE

- Given the urgent power demand in South Africa, the No-Go alternative is not considered to be an alternative, as Eskom's mandate is to provide power for the country
- Eskom would likely apply to develop coal-fired power stations if the current application is declined as coal-fired generation is the only feasible base load alternative
- The life-cycle environmental impacts of coal-fired power generation are greater than nuclear-fuelled power generation

NO-DEVELOPMENT ALTERNATIVE

- If Eskom does not utilise Bantamsklip and Thyspunt for Nuclear-1, there are two options:
  - Keep as a future nuclear site; or
  - Sell to a willing buyer - this may result in an any alternative form of land use - may not involve management of the majority of the properties as a nature reserve

KEY MITIGATION MEASURES

- Independent specialists have proposed mitigation measures to reduce potential negative impacts
- Draft EMP has been compiled as part of draft EIR and if authorised, it will be a legally binding document
- Compliance to EMP must be independently audited throughout construction and operation
- Mitigation measures for botanical impacts, vertebrate and invertebrate fauna, wetlands and heritage resources are particularly important
- Mitigation of heritage impacts will require the work of a site-specific team dedicated to excavations over a period of several years prior to construction

KEY MITIGATION MEASURES

- Qualified and experienced botanical, wetland, vertebrate and invertebrate fauna, dune geomorphology and heritage specialists will need to find acceptable detailed final access route alignments
- Additional groundwater studies are necessary to improve accuracy to of the groundwater model to understand interaction between groundwater and coastal seep wetlands
- Cut-off wall to prevent drawdown of groundwater affecting wetlands during construction
- Acquisition of properties on eastern side of site outside of current Eskom property up to the western boundary of The Links for dedicated wetland conservation

WAY FORWARD

- Comment Period – 6 March to 10 May (66 days)
- Public meetings and key stakeholder workshops will be held around the sites assessed from 23 March to 21 April. Minutes of meetings will be sent to attendees
- Comments received will be addressed in the Issues and Response Report in the Final EIR
- Final EIR will be submitted to the DEA for consideration and decision-making
- Final decision regarding EIA will be communicated to registered I&APs
- Construction of Nuclear-1 is subject to other approvals e.g. the NNR site safety decision and transmission lines EIA authorisations

Slide 69

WAY FORWARD

Written comments can be submitted by:

- Post: Public Participation Office, Nuclear 1 EIA, PO Box 503, Mtunzini, 3867, SA
- Fax: +27 (0) 35 340 2232
- Email: nuclear1@acerafrica.co.za

Slide 70

MEETING CONDUCT

- Please wait for the discussion session to ask questions
- Introduce yourselves prior to asking a question and indicate your specific interest
- You are welcome to ask the question in your mother tongue. Presentations will be in English
- One person at a time
- Work through the facilitator
- Show respect
- Focus on the issue not the person
- Be constructive
- Agree to disagree

Please switch off all cell phones!

Slide 71

THANK YOU

Slide 72

ESKOM HOLDINGS LIMITED

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR A PROPOSED NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE DEA REF. No.:12/12/20/944

EIA Phase Public Meeting:
Review of Draft Environmental Impact Report

March / April 2010

Slide 1

PROPOSED AGENDA

1. Sign attendance register and discussion with team: 17:00 – 17:50
2. Welcome and introductions: 18:00 – 18:10
3. Presentation of EIA and EMP findings: 18:10 – 19:00
4. Discussion: 19h00 – 19:50
5. Way forward and close: 19:50 – 20:00

Slide 2

MEETING CONDUCT

- Please wait for the discussion session to ask questions
- Introduce yourselves prior to asking a question and indicate your specific interest
- You are welcome to ask the question in your mother tongue. Presentations will be in English
- One person at a time
- Work through the facilitator
- Show respect
- Focus on the issue not the person
- Be constructive
- Agree to disagree

Please switch off all cell phones!

Slide 3

MEETING OBJECTIVES

- The focus of the meeting is to provide an opportunity for Interested and Affected Parties (I&APs) to comment on the findings of the EIA and the Draft Environmental Impact Assessment Report (EIR)
- Provide an opportunity for I&APs to seek further clarity on the proposed project, the EIA phase and the Draft EIR
- Provide I&APs with an opportunity for interaction with the EIA team
- Recording of issues - the proceedings will be recorded and used to compile meeting minutes. Comments will be included in the Issues and Response Report (IRR) and changes will be made to the Final EIR, where necessary

Slide 4

KEY ISSUES

- Some people are opposed to and others are in favour of a nuclear power station at Bantamsklip, Thyspunt and Duynefontein
- Concerns about the potential impacts on human health and safety
- Local residents share a deep-felt connection to the area and have a strong “sense of place”
- A power station could potentially be unsightly
- Tourism is linked to conservation and preservation of the coastline

KEY ISSUES

- Marine life could potentially be adversely affected by altered sea temperature and turbulence caused by inflow and output of sea water to the plant
- Concern that commercial and recreational fishing may be negatively impacted
- Light pollution
- Concerns about potential drop in property values
- Concern about cost of constructing a power station
- Some people expressed a lack of trust in the EIA
- Storage of hazardous waste
- Renewable (‘green’) energy (e.g. wind, solar) vs. nuclear

PROJECT MOTIVATION

- Increasing demand for electricity (> 4% growth per annum)
- Projected requirement for more than 40 000 MW of new electricity generating capacity over the next 20 years
- In SA only coal and nuclear power are solutions for base load generation, while gas turbines, hydroelectric power stations and pumped storage schemes are used for peaking and emergency electricity generation

PROPOSED ACTIVITY

- Eskom proposes the construction, operation and decommissioning of a conventional nuclear power station and associated infrastructure either in the Eastern or Western Cape
- A nuclear power station of the Pressurised Water Reactor (PWR) type technology e.g. Koeberg Power Station
- The transmission power lines are subject to separate environmental authorisation processes

TRANSMISSION (TX) LINE EIAs

- Bantamsklip – Scoping phase has been extended to include Multi-stakeholder Workshops and additional public consultation. Revised Draft Scoping Report will be made available for public comment
- Thyspunt – Scoping Report accepted by Authorities and EIA phase has commenced
- Duynefontein – Scoping Report accepted by Authorities and EIA phase has commenced

PROJECT BACKGROUND

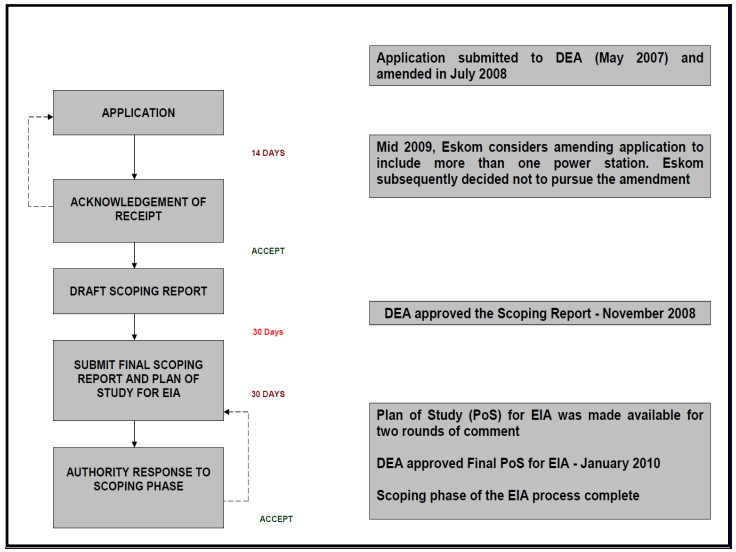
- The power station and directly associated infrastructure will require approximately 31 ha
- The footprint assessed makes provision for the potential future expansion of a power station to 10 000 MW or the maximum carrying capacity
- The proposed nuclear power station will include nuclear reactor, turbine complex, spent fuel, nuclear fuel storage facilities, waste handling facilities, intake and outfall pipelines, desalinisation plant and auxiliary service infrastructure

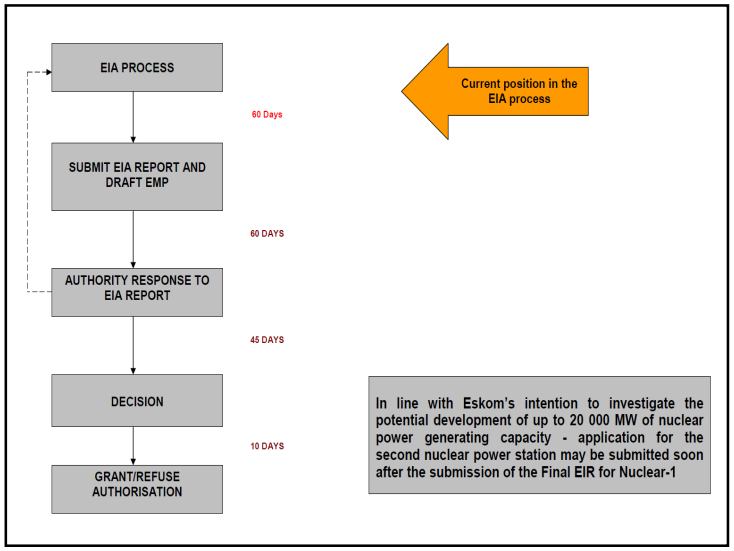
PROJECT BACKGROUND

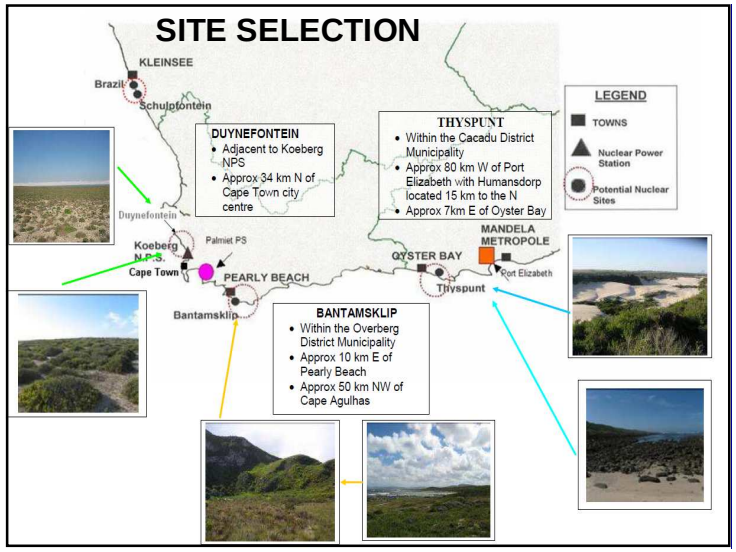
- Should the proposed project be authorised, it is anticipated that construction of the station could commence in 2011 with the first unit being commissioned in 2018 (optimistic)
- Construction period - 7 years
- Labour requirements:
  - Construction – 7 700 persons
  - Operation – 1 400 persons
- Construction and operational access routes to Thyspunt site (22 m wide, tarred)
  - Eastern access route (11km)
  - Western access route (7km)
- Normal (sedans), heavy (buses, trucks) and exceptionally heavy vehicles (42 m x 8.23 m max.)
- Peak construction vehicle trips: 828 morning and 945 evening

ENVELOPE OF CRITERIA

- Detailed description of proposed nuclear plant is not available, as preferred supplier has not been selected
- Approach used has been to specify enveloping environmental and other relevant requirements, to which the power station design and placement on site must comply
- Enveloping criteria represent the most conservative parameters associated with the various plant alternatives within the available PWR technology


APPLICATION
14 DAYS
ACKNOWLEDGEMENT OF RECEIPT
ACCEPT
DRAFT SCOPING REPORT
30 Days
SUBMIT FINAL SCOPING REPORT AND PLAN OF STUDY FOR EIA
30 DAYS
AUTHORITY RESPONSE TO SCOPING PHASE
ACCEPT
Application submitted to DEA (May 2007) and amended in July 2008
Mid 2009, Eskom considers amending application to include more than one power station. Eskom subsequently decided not to pursue the amendment
DEA approved the Scoping Report - November 2008
Plan of Study (PoS) for EIA was made available for two rounds of comment
DEA approved Final PoS for EIA - January 2010
Scoping phase of the EIA process complete


EIA PROCESS
60 Days
SUBMIT EIA REPORT AND DRAFT EMP
60 DAYS
AUTHORITY RESPONSE TO EIA REPORT
45 DAYS
DECISION
10 DAYS
GRANT/REFUSE AUTHORISATION
Current position in the EIA process
In line with Eskom's intention to investigate the potential development of up to 20 000 MW of nuclear power generating capacity - application for the second nuclear power station may be submitted soon after the submission of the Final EIR for Nuclear-1


SITE SELECTION
KLEINSEE
Brazil
Schulpfontein
DUYNEFONTEIN
Adjacent to Koeberg NPS
Approx 34 km N of Cape Town city centre
THYSPUNT
Within the Cacadu District Municipality
Approx 80 km W of Port Elizabeth with Humansdorp located 15 km to the N
Approx 7km E of Oyster Bay
LEGEND
TOWNS
Nuclear Power Station
Potential Nuclear Sites
Duynefontein
Koeberg N.P.S.
Palmiet PS
Cape Town
PEARLY BEACH
Bantamsklip
MANDELA METROPOLE
OYSTER BAY
Port Elizabeth
Thyspunt
BANTAMSKLIP
Within the Overberg District Municipality
Approx 10 km E of Pearly Beach
Approx 50 km NW of Cape Agulhas


LOCALITY
Krom River
Oyster Bay
5.5 km
10 km
St. Francis Bay
Thysbaai
Thyspunt
11.5 km
Cape St. Francis
Indian Ocean
Slide 16

ASSESSMENT OF IMPACTS

- **The potential impacts assessed were based on:**
  - Issues identified by I&APs during the public participation process (PPP)
  - Issues identified by specialists through research
  - Experience of relevant specialists with projects of a similar nature or in a similar environment
  - Consultation with local specialists
  - Environmental resources and conditions identified during site surveys

METHODOLOGY

- Independent specialists assessed potential positive and negative impacts with and without mitigation
- According to the specialists, all potential negative impacts can be mitigated
- There are no fatal flaws at any of the alternative sites

SPECIALIST STUDIES

- **Physical Impacts**
  - Geology and geological risk
  - **Seismological risk**
  - Geo-hydrology
  - Geotechnical characteristics
- **Biophysical Impacts**
  - **Dune geomorphology**
  - **Flora**
  - **Fauna (Invertebrate and Vertebrate)**
  - Hydrology
  - **Freshwater ecosystems**
  - Oceanographic conditions
  - **Marine biology**
  - Air quality
  - Assessment of the1:100 year floodline

SPECIALIST STUDIES

- **Socio-economic Impacts**
  - **Social**
  - **Economic**
  - Noise
  - Visual
  - **Heritage and cultural resources**
  - Waste
  - **Tourism**
  - **Agriculture**
- As per the NNR / DEA co-operative agreement, a number of specialist studies related to human health risk and safety were commissioned and included in this EIR for information (4 studies)

SPECIALIST STUDY RESULTS

- **Seismological Risk**

Seismic studies indicate that the design basis for the respective sites in terms of peak ground acceleration values (PGA) are as follows:

  – Duynefontein – PGA ~0.30 g
  – Bantamsklip - PGA ~0.23 g
  – Thyspunt - PGA ~0.16 g

SPECIALIST STUDY RESULTS

- **Impacts on Dune Geomorphology (study of landforms and sand movement)**
  - Groundwater does not 'daylight' at Duynefontein or Bantamsklip sites: access roads and transmission lines can be built across the mobile dunes
  - The interaction between dune systems and wetlands is complex at Thyspunt, since groundwater 'daylights' in many inter-dune areas:
  - Haul roads and conveyor belts between the nuclear power station in the south and the HV yard in the north, may cause potential negative impacts on dune geomorphology at Thyspunt are more extensive than at the other two sites

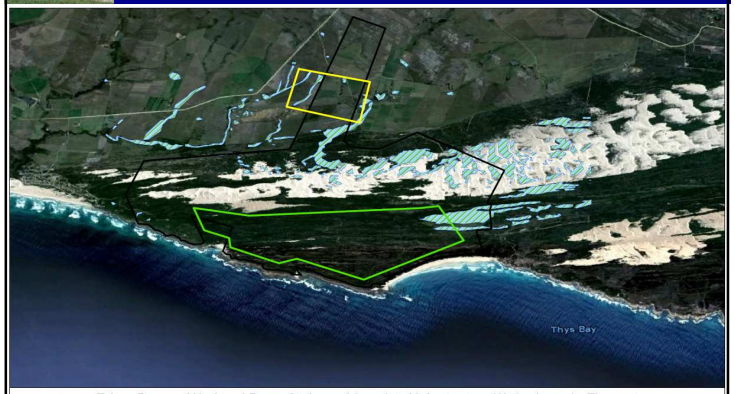
SPECIALIST STUDY RESULTS

- **Impacts on Flora (plants)**
  - Bantamsklip will experience the least potential negative impact on plant communities and species, as the ecosystems on this site are fairly common along this section of coastline, provided that the power station is situated away from the limestone fynbos
  - Thyspunt has by far the greatest diversity of vegetation communities, including extensive and highly sensitive wetlands

SPECIALIST STUDY RESULTS

- **Impacts on Wetlands**
  - The development of a nuclear power station at Duynefontein is unlikely to result in any unmitigable, highly significant negative impacts on wetlands
  - Development of the proposed nuclear power station at Bantamsklip would not be associated with any unmitigable impacts to wetland systems
  - The Thyspunt wetland systems are complex and potential negative impacts could occur without appropriate mitigation

THYSPUNT WETLANDS



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: Wetlands on site Thyspunt

SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Vertebrates (insects)**
  - The amount of land that is not of high faunal sensitivity at **Duynefontein** is more than sufficient for the nuclear power station
  - At **Bantamsklip** the nuclear power station could have significant negative potential impacts, without mitigation, because of the impacts on faunal habitats within the footprint
  - At **Thyspunt** a nuclear power station would have significant potential negative impacts, without mitigation, because of the direct impacts on faunal habitats within the footprint, the development of two major new access roads, and the need for a development corridor across a large mobile dunefield

SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Invertebrates (animals, birds)**
  - The potential impacts of the nuclear power station on the terrestrial invertebrate communities are very similar for all alternative sites, but there are site-specific differences
  - None of the butterflies occurring in the Cape Flats Dune Fynbos area around **Duynefontein** are endangered or endemic
  - Duynefontein of low to very low sensitivity
  - The new species of ant found at Duynefontein is regarded as a generalist and is likely to be found on other areas of the site

SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Invertebrates**
  - Thyspunt has the highest butterfly diversity and conservation value of the alternative sites.
  - From the viewpoint of potential positive impacts of the nuclear power station, Duynefontein already positively benefits under the management of Eskom, which means that it would experience the least improvement in conservation status
  - Bantamsklip and Thyspunt would benefit substantially from formal protection status. The project would have a potential net positive impact on invertebrate communities at Bantamsklip and Thyspunt

SPECIALIST STUDY RESULTS

- **Economic Impacts**
  - The positive macro-economic impacts will be greatest at Bantamsklip and Duynefontein, and less at Thyspunt, as the sites are situated in a province with a larger, more diversified economy. Nuclear-1 would result in less dislocation of economic activities if located at Duynefontein than at either of the other two sites
  - Macroeconomic indicators favour Duynefontein and Bantamsklip
  - The cost-effectiveness analysis indicates that Thyspunt is slightly favoured relative to Duynefontein and more favoured relative to Bantamsklip.
  - The differences between the alternative sites are slight, and all the sites would have positive economic impacts both on the local area and the province in which they are situated
  - The economic impact assessment gives greater weight to the cost-effectiveness analysis, which favours Thyspunt

SPECIALIST STUDY RESULTS

- **Heritage Impacts (archaeological sites and fossils)**
  - All alternative sites contain significant heritage resources
  - Duynefontein is palaeontologically highly sensitive
  - Less Stone Age heritage at Duynefontein than at Bantamsklip or Thyspunt
  - Thyspunt more sensitive than Bantamsklip in terms of its heritage richness – sites mostly along coast at all sites

SPECIALIST STUDY RESULTS

Marine Biology Impacts

- Potential impacts similar at all sites and the impacts can be mitigated if the proposed designs are implemented as planned
- Potentially the most significant impacts are:
  - Disruption of the marine environment through the offshore disposal of sediment
  - Release of warmed cooling water
- Spoil disposal will have a potentially highly significant long-term negative impact on the marine environment within a localised area (3 km^2 initially to 6 km^2 [2 x 3 km] after 5 years) – acceptable impact according to marine specialist

SPECIALIST STUDY RESULTS

Marine Biology Impacts

- Impacts on Chokka fishing industry:
  - Chokka spawn at depths less than 50m
  - Recommended that spoil must be released in depths more than 50m (between 1.4 km and 1.8 km offshore) and medium pumping rate
  - Warm water release recommendations to aid heat dissipation:
    - tunnelled design;
    - multiple release points;
    - high flow rate; and
    - above sea floor.

SPECIALIST STUDY RESULTS

Marine Biology Impacts

- Radionuclides such as Cesium (Cs-137) and Strontium (Sr-90) present in oceans alongside other elements since 1940s
- Background levels of Cesium have been recorded at Koeberg before the nuclear power station was established
- Detected in mussels, sand mussels and fish below levels at which further investigation would be required. Strontium not recorded in marine organisms at Koeberg
- Due to few organisms in which Cesium has been recorded, low concentrations and lack of Strontium, these nuclides have no detectable potential impact on marine organisms

SPECIALIST STUDY RESULTS

Social Impacts

- Potential negative impacts relate to accommodation for temporary workers during construction
- Potential positive impact is the provision of electricity and related benefits to the broader national and regional economies
- Perceived risks associated with nuclear incidents could potentially lead to a change in attitude and behaviour – reliable information is important

SPECIALIST STUDY RESULTS

Tourism Impacts

- Communities at Thyspunt and Bantamsklip have expressed opposition to the proposed power station
- Thyspunt community highlighted the premium nature of the top-end coastal vacation destination
- Bantamsklip community emphasised the new and fragile nature of the developing tourism product and the local dependence thereon
- Some Duynefontein tourism stakeholders have personal objections to another power station, however they recognise the potential for increased business and promote a generally positive outlook for tourism

SPECIALIST STUDY RESULTS

Tourism Impacts

- Assessment takes account decline in nature-based tourism as well as an increase in business-related tourism associated with the proposed nuclear power station
- Duynefontein – limited potential impact during construction; potential 1.4% improvement during operation
- Bantamsklip - potential 5% positive impact during construction; a potential 8.6% improvement during operation
- Thyspunt – potential 7.9% negative impact during construction; potential zero impact during operation

SPECIALIST STUDY RESULTS

Agricultural Impacts

- Agriculture around Thyspunt is based mainly on milk production (2008: R150 m per annum)
- Fynbos farming prevails at the Bantamsklip although there is some dairy as well as grape, beef, sheep and game farming (2008: R29 m per annum)
- Duynefontein is based on mixed farming (2008: R75 m per annum)

SPECIALIST STUDY RESULTS

Agricultural Impacts

- Duynefontein – no impact on agriculture during construction and operation
- Bantamsklip – negative potential impact of dust (construction). Potential of less than 5% increase in local market due to water limitations that restrict expansion
- Thyspunt – negative potential impact of dust (construction). Potential for positive impact on production by increasing the size of the local market for fresh produce

PROJECT ALTERNATIVES

- **Location of the power station (i.e. site selection)**
- Forms of power generation
- Nuclear plant types
- **Layout of the nuclear plant**
- **Fresh water supply and utilisation of abstracted groundwater**
- Management of brine
- Intake of sea water
- **Outlet of water**
- Management of spoil material
- Access to Thyspunt
- **Waste**
- **The no-development alternative (i.e. 'No-Go')**

SITE SELECTION

- Site selection was based on:
  - Results of independent specialist studies: the significance of potential impacts, with mitigation, at each of the sites
  - An integration workshop, involving all specialists, where ranking of the sites and key decision factors were agreed on
  - Quantified ranking taking into account the key decision factors

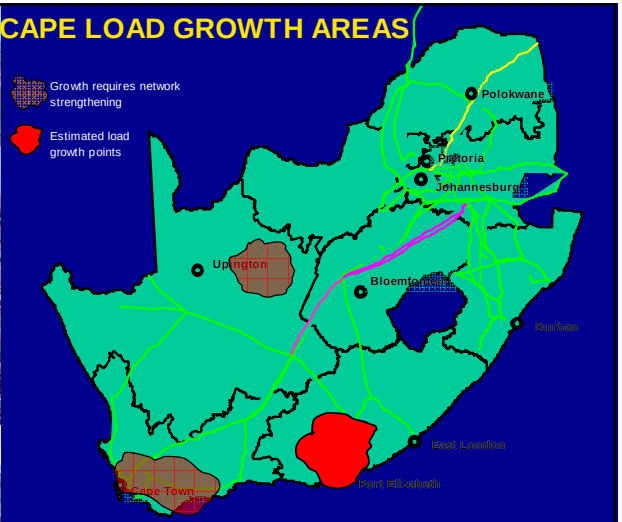
SITE SELECTION

- Impacts of low significance at all alternative sites filtered out e.g. noise, visual impacts, hydrology
- Impacts of medium and high significance that have the same significance at all sites were filtered out e.g. social
- The key factors for decision-making:
  - Integration into the national grid
  - Seismic suitability
  - Impacts on dune geomorphology
  - Impacts on wetlands
  - Impacts on vertebrate fauna
  - Impacts on invertebrate fauna
  - Economic impacts

INTEGRATION INTO THE NATIONAL GRID

- Where do we require power stations for future load growth?
- Electricity needs to be transmitted from the high voltage yard at the power station through a network of transmission and distribution lines to end users
- To improve efficiency, Eskom tries connect new base load generation to the closest load, where possible

CAPE LOAD GROWTH AREAS



SITE SELECTION

A number of factors indicate that Bantamsklip cannot be regarded as a **preferred alternative** for Nuclear-1 when compared to the other two alternative sites:

- Substantially higher construction costs due to its remote location (requirements for upgrading of roads and bridges and lengthy transmission lines)
- Cumulative environmental impacts of the transmission corridors
- Potential impacts on invertebrate fauna

Bantamsklip is regarded as the least preferred site alternative for Nuclear-1

SITE SELECTION: RECOMMENDATIONS

A quantitative assessment of key criteria indicates that Thyspunt is preferred (with a score of 76 as opposed to Duynefontein's score of 57) due to:

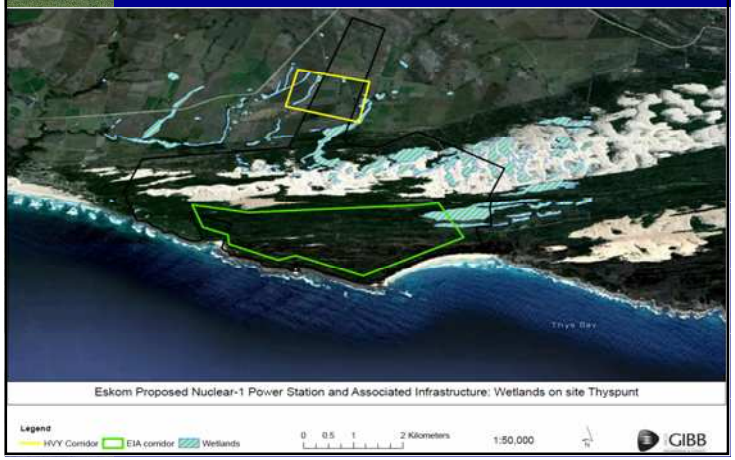
- Lower seismic risk
- Relative ease of integration into the transmission grid
- Site's locality relative to the Port Elizabeth load centre
- Potential benefits of the conserving the majority of the site (2400ha), as well as additional land being managed for conservation purposes
- Conservation benefits would not be realised at Duynefontein

NUCLEAR PLANT LAYOUT

- Sensitivity maps of all specialist studies were integrated and composite maps were produced to indicate areas of high environmental suitability for each alternative site

- Finalisation of the site layout plans will require detailed investigations, in conjunction with relevant qualified and experienced specialists

Site Sensitivity: Thyspunt – Wetlands

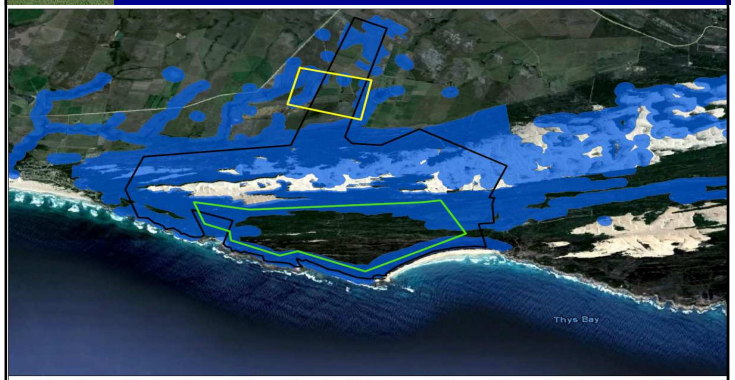


Site Sensitivity: Thyspunt – Flora

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity vegetation fauna on site Thyspunt

Legend
HVY Corridor
EIA corridor
Vegetation
0 0.5 1 2 Kilometers
1:50,000
GIBB

Site Sensitivity: Thyspunt – Vertebrate Fauna



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity vertebrate fauna on site Thyspunt

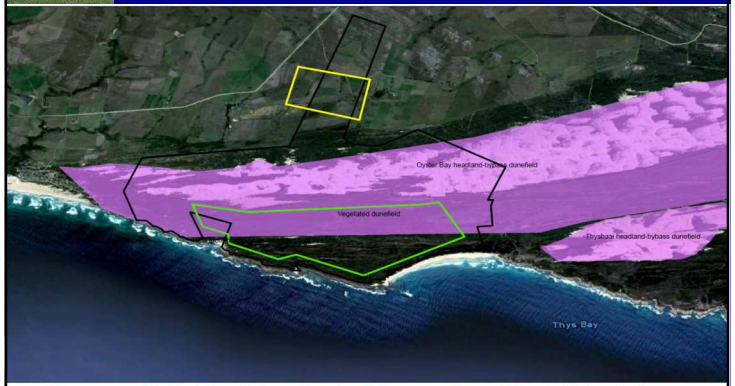
Legend
HVY Corridor
EIA corridor
Vertebrate Fauna
0 0.5 1 2 Kilometers
1:50,000
GIBB

Site Sensitivity: Thyspunt – Heritage

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity heritage features on site Thyspunt

Legend
HVY Corridor
EIA corridor
Heritage
0 0.5 1 2 Kilometers
1:50,000
GIBB

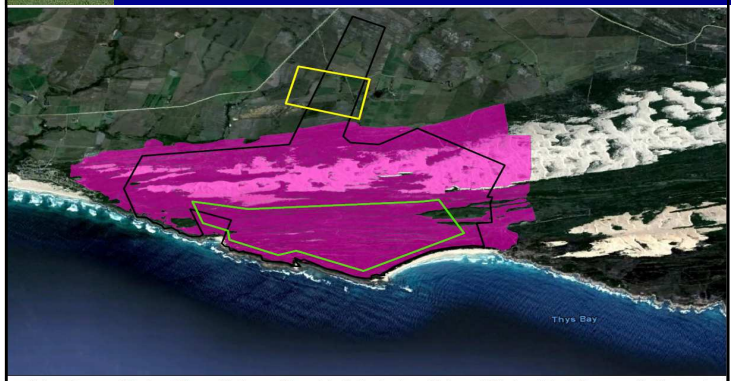
Site Sensitivity: Thyspunt – Dunefields



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity dunefields on site Thyspunt

Legend
HVY Corridor
EIA corridor
Dune Geomorphology
0 0.5 1 2 Kilometers
1:50,000
GIBB

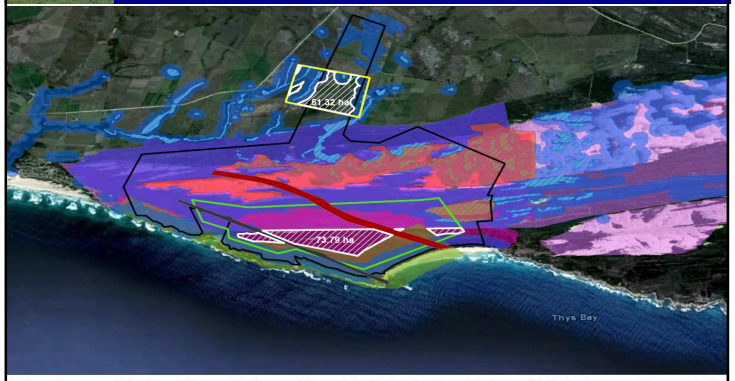
Site Sensitivity: Thyspunt – Invertebrate Fauna



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity invertebrate fauna on site Thyspunt

Legend
HVY Corridor | EIA corridor | Invertebrate Fauna
0 0.5 1 2 Kilometers
1:50,000
GIBB

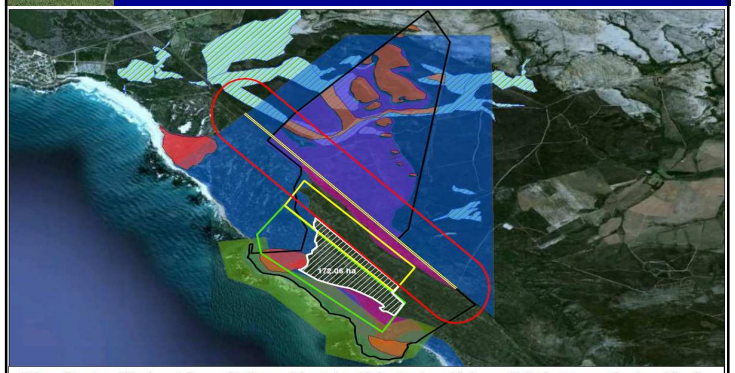
Site Sensitivity: Thyspunt – Combined Sensitivity



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity features on Thyspunt site

Legend
Least sensitive area | Vertebrate fauna | Dune geomorphology
HVY corridor | Heritage | Geology, Seismology and Geotechnics
EIA corridor | Wetlands | 'No-go' Zone of Seismic Hazard (Goudini/ Cederberg Transition)
Vegetation | Invertebrate fauna | 'No-go' Zone of Seismic Hazard (Skurweberg/Goudini Transition)
0 0.5 1 2 Kilometers
1:50000
GIBB

Site Sensitivity: Bantamsklip – Combined Sensitivity



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity features on Bantamsklip site

Affected portion of the road | EIA corridor | Invertebrate Fauna
800m road buffer | Vegetation | Wetlands
Least sensitive area | Heritage | Geotechnical and seismology not significant
HVY corridor | Vertebrate fauna
0 0.5 1 2 Kilometers
1:50000
GIBB

Site Sensitivity: Duynefontein – Combined Sensitivity

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity features on Duynefontein site

Legend
Affected portion of road | EIA corridor | Invertebrate fauna
800m road buffer | Heritage | Wetlands (not significant)
Least sensitive area | Vegetation | Geotechnical and seismology not significant
0 0.5 1 2 Kilometers
1:65000
GIBB

CONSERVATION BENEFITS

- In spite of potentially significant negative impacts, all biophysical specialists in agreement:
  - no fatal flaws at any of the sites;
  - positive impacts for conservation of the area outside the footprint of the power station at Thyspunt and Bantamsklip are significant
- Acquisition of properties for conservation outside the current property for wetland conservation
- To guarantee conservation benefits, property's conservation status must be secured, i.e. must be declared as an official nature reserve

FRESH WATER SUPPLY AND UTILISATION OF ABSTRACTED GROUNDWATER

- At all sites desalination provides a guaranteed source of fresh water supply for the lifespan of the proposed nuclear power station without jeopardising the availability of fresh water to other users
- A desalinisation plant is therefore the preferred alternative for the provision of fresh water at all sites

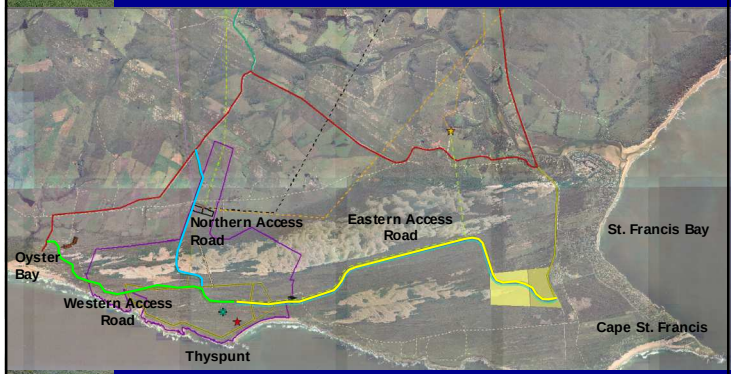
INTAKE AND OUTLET OF WATER

- The installation of intake and outlet tunnels that obtain water from the ocean and feed cooling water into a storage area located adjacent to the cooling water pump houses is the only feasible alternative for all sites
- Outlet structures for cooling water and chemical effluent must be offshore
- All releases need to occur at the distances and depths prescribed by the relevant specialists
- Provided that the specific mitigation measures identified in the marine biology report are adhered to, offshore effluent release above the sea floor is the recommended alternative

MANAGEMENT OF SPOIL MATERIAL

- Fine spoil must be disposed of in the marine environment at all sites
- Spoil material that cannot be pumped to sea, must be disposed of on land and used for activities like levelling of the HV yard and to minimise the footprint on the terrestrial environment
- Visual impact of spoil dumps must be minimised
- Transport of spoil to the panhandle at Thyspunt via conveyor belt is not recommended due to the Oyster Bay mobile dune system

ACCESS ROAD ALTERNATIVES



Slide 61

ACCESS TO THE THYSPUNT SITE

- The Eastern Access Route is required by Eskom for heavy loads and there is no alternative to this route
- The Western Access Route is favoured over the Northern Access Route, with respect to the potential impacts on agriculture, flora, wetlands, dune geomorphology and heritage resources
- The Northern Access Route is favoured only in terms of visual impacts
- Western Access Road is the preferred access road for the Thyspunt site

Slide 62

WASTE TYPES

- Low-level waste: ± 940 drums (50 – 100 kg per drum) per year
- Intermediate level waste: ± 160 x 6.3 ton concrete drums per year
- High level waste: ± 1880 tons of spent fuel over life of power station (60 years)

Slide 63

WASTE DISPOSAL

- Only feasible alternative for the disposal of Low-Level and Intermediate-Level radioactive waste is Vaalputs nuclear waste disposal site in Northern Cape
- This is the only authorised facility for this form of waste in SA. Vaalputs has sufficient capacity for the waste that will be generated by Nuclear-1
- With regards to High-Level Waste, only alternative currently available in SA is long-term storage of the spent fuel in the power station – common practice internationally
- Vaalputs may be considered as a disposal site for High-Level Waste in future

Slide 64

WASTE DISPOSAL

- National Radioactive Waste Management Institute established by the National Radioactive Waste Management Institute Act No. 53 of 2008)
- Act came into effect in Dec 2009
- Subject to NNR regulations
- Institute will transfer responsibility from NECSA

NO-DEVELOPMENT ALTERNATIVE

- Given the urgent power demand in South Africa, the No-Go alternative is not considered to be an alternative, as Eskom's mandate is to provide power for the country
- Eskom would likely apply to develop coal-fired power stations if the current application is declined as coal-fired generation is the only feasible base load alternative
- The life-cycle environmental impacts of coal-fired power generation are greater than nuclear-fuelled power generation

NO-DEVELOPMENT ALTERNATIVE

- If Eskom does not utilise Bantamsklip and Thyspunt for Nuclear-1, there are two options:
  - Keep as a future nuclear site; or
  - Sell to a willing buyer - this may result in an any alternative form of land use - may not involve management of the majority of the properties as a nature reserve

KEY MITIGATION MEASURES

- Independent specialists have proposed mitigation measures to reduce potential negative impacts
- Draft EMP has been compiled as part of draft EIR and if authorised, it will be a legally binding document
- Compliance to EMP must be independently audited throughout construction and operation
- Mitigation measures for botanical impacts, vertebrate and invertebrate fauna, wetlands and heritage resources are particularly important
- Mitigation of heritage impacts will require the work of a site-specific team dedicated to excavations over a period of several years prior to construction

KEY MITIGATION MEASURES

- Qualified and experienced botanical, wetland, vertebrate and invertebrate fauna, dune geomorphology and heritage specialists will need to find acceptable detailed final access route alignments
- Additional groundwater studies are necessary to improve accuracy to of the groundwater model to understand interaction between groundwater and coastal seep wetlands
- Cut-off wall to prevent drawdown of groundwater affecting wetlands during construction
- Acquisition of properties on eastern side of site outside of current Eskom property up to the western boundary of The Links for dedicated wetland conservation

WAY FORWARD

- Comment Period – 6 March to 10 May (66 days)
- Public meetings and key stakeholder workshops will be held around the sites assessed from 23 March to 21 April. Minutes of meetings will be sent to attendees
- Comments received will be addressed in the Issues and Response Report in the Final EIR
- Final EIR will be submitted to the DEA for consideration and decision-making
- Final decision regarding EIA will be communicated to registered I&APs
- Construction of Nuclear-1 is subject to other approvals e.g. the NNR site safety decision and transmission lines EIA authorisations

WAY FORWARD

Written comments can be submitted by:

- Post: Public Participation Office, Nuclear 1 EIA, PO Box 503, Mtunzini, 3867, SA
- Fax: +27 (0) 35 340 2232
- Email: nuclear1@acerafrica.co.za

MEETING CONDUCT

- Please wait for the discussion session to ask questions
- Introduce yourselves prior to asking a question and indicate your specific interest
- You are welcome to ask the question in your mother tongue. Presentations will be in English
- One person at a time
- Work through the facilitator
- Show respect
- Focus on the issue not the person
- Be constructive
- Agree to disagree

Please switch off all cell phones!

THANK YOU

ESKOM HOLDINGS LIMITED

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR A PROPOSED NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE DEA REF. No.:12/12/20/944

EIA Phase Public Meeting:
Review of Draft Environmental Impact Report

March / April 2010

PROPOSED AGENDA

1. Sign attendance register and discussion with team: 17:00 – 17:50
2. Welcome and introductions: 18:00 – 18:10
3. Presentation of EIA and EMP findings: 18:10 – 19:00
4. Discussion: 19:00 – 19:30
5. Presentation by St. Francis Bay Residents' Association and St. Francis Kromme Trust: 19:30 – 20:00
6. Discussion: 20:00 – 20:30
7. Way forward and close: 20:30 – 20:40

MEETING CONDUCT

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- Work through the facilitator
- Show respect
- Focus on the issue not the person
- Be constructive
- Agree to disagree

Please switch off all cell phones!

MEETING OBJECTIVES

- The focus of the meeting is to provide an opportunity for Interested and Affected Parties (I&APs) to comment on the findings of the EIA and the Draft Environmental Impact Assessment Report (EIR)
- Provide an opportunity for I&APs to seek further clarity on the proposed project, the EIA phase and the Draft EIR
- Provide I&APs with an opportunity for interaction with the EIA team
- Recording of issues - the proceedings will be recorded and used to compile meeting minutes. Comments will be included in the Issues and Response Report (IRR) and changes will be made to the Final EIR, where necessary

KEY ISSUES

- Some people are opposed to and others are in favour of a nuclear power station at Bantamsklip, Thyspunt and Duynefontein
- Concerns about the potential impacts on human health and safety
- Local residents share a deep-felt connection to the area and have a strong “sense of place”
- A power station could potentially be unsightly
- Tourism is linked to conservation and preservation of the coastline

KEY ISSUES

- Marine life could potentially be adversely affected by altered sea temperature and turbulence caused by inflow and output of sea water to the plant
- Concern that commercial and recreational fishing may be negatively impacted
- Light pollution
- Concerns about potential drop in property values
- Concern about cost of constructing a power station
- Some people expressed a lack of trust in the EIA
- Storage of hazardous waste
- Renewable (‘green’) energy (e.g. wind, solar) vs. nuclear

PROJECT MOTIVATION

- Increasing demand for electricity (> 4% growth per annum)
- Projected requirement for more than 40 000 MW of new electricity generating capacity over the next 20 years
- In SA only coal and nuclear power are solutions for base load generation, while gas turbines, hydroelectric power stations and pumped storage schemes are used for peaking and emergency electricity generation

PROPOSED ACTIVITY

- Eskom proposes the construction, operation and decommissioning of a conventional nuclear power station and associated infrastructure either in the Eastern or Western Cape
- A nuclear power station of the Pressurised Water Reactor (PWR) type technology e.g. Koeberg Power Station
- The transmission power lines are subject to separate environmental authorisation processes

TRANSMISSION (TX) LINE EIAs

- Bantamsklip – Scoping phase has been extended to include Multi-stakeholder Workshops and additional public consultation. Revised Draft Scoping Report will be made available for public comment
- Thyspunt and Duynefontein – Scoping Report accepted by Authorities and EIA phase has commenced

PROJECT BACKGROUND

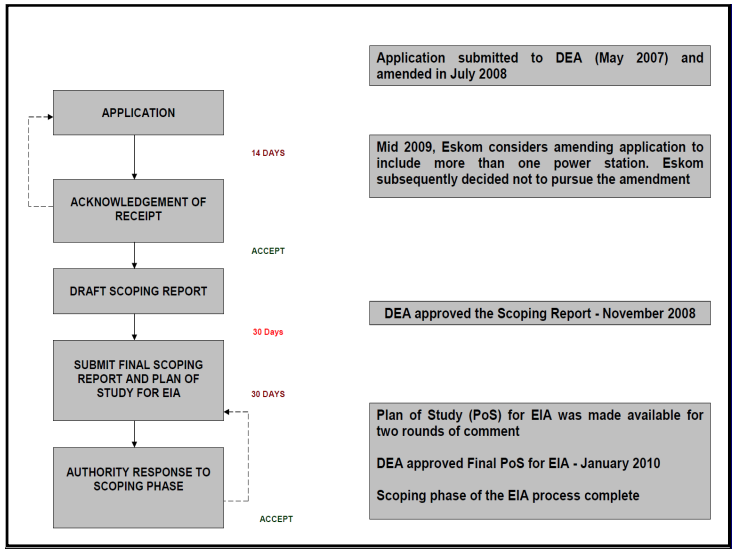
- The power station and directly associated infrastructure will require approximately 31 ha (e.g. Thyspunt: 1.3% of current 2 400 ha Eskom property)
- The footprint assessed makes provision for the potential future expansion of a power station to 10 000 MW or the maximum carrying capacity. Separate EIA required for any further expansion beyond 4 000 MW
- The proposed nuclear power station will include nuclear reactor, turbine complex, spent fuel, nuclear fuel storage facilities, waste handling facilities, intake and outfall pipelines, desalinisation plant and auxiliary service infrastructure (e.g. access roads, OCGT plant, HV yard, visitor centre)

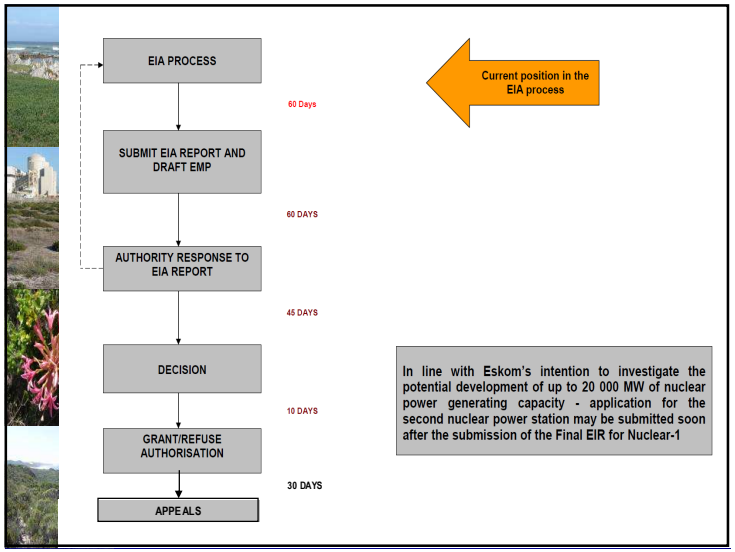
PROJECT BACKGROUND

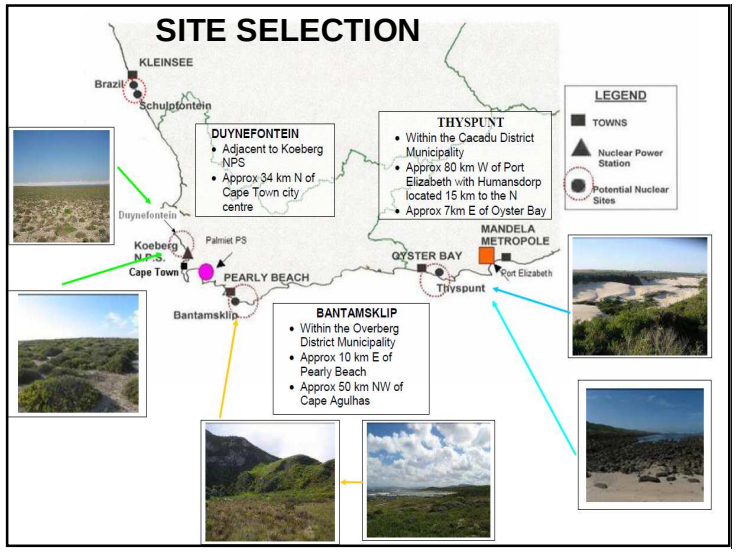
- Should the proposed project be authorised, it is anticipated that construction of the station could commence in 2011 with the first unit being commissioned in 2018 (optimistic)
- Construction period – 7 to 9 years
- Labour requirements:
  - Construction – 7 700 persons
  - Operation – 1 400 persons
- Construction and operational access routes to Thyspunt site (22 m wide, tarred)
  - Eastern access route (11 km)
  - Western access route (7 km)
- Normal (sedans), heavy (buses, trucks) and exceptionally heavy vehicles (42 m x 8.23 m max.)
- Peak construction vehicle trips: 828 morning and 945 evening

ENVELOPE OF CRITERIA

- Detailed description of proposed nuclear plant is not available, as preferred supplier has not been selected
- Approach used has been to specify enveloping environmental and other relevant requirements, to which the power station design and placement on site must comply
- Enveloping criteria represent the most conservative parameters associated with the various plant alternatives within the available Generation III PWR technology


APPLICATION
14 DAYS
ACKNOWLEDGEMENT OF RECEIPT
ACCEPT
DRAFT SCOPING REPORT
30 Days
SUBMIT FINAL SCOPING REPORT AND PLAN OF STUDY FOR EIA
30 DAYS
AUTHORITY RESPONSE TO SCOPING PHASE
ACCEPT
Application submitted to DEA (May 2007) and amended in July 2008
Mid 2009, Eskom considers amending application to include more than one power station. Eskom subsequently decided not to pursue the amendment
DEA approved the Scoping Report - November 2008
Plan of Study (PoS) for EIA was made available for two rounds of comment
DEA approved Final PoS for EIA - January 2010
Scoping phase of the EIA process complete


EIA PROCESS
60 Days
SUBMIT EIA REPORT AND DRAFT EMP
60 DAYS
AUTHORITY RESPONSE TO EIA REPORT
45 DAYS
DECISION
10 DAYS
GRANT/REFUSE AUTHORISATION
30 DAYS
APPEALS
Current position in the EIA process
In line with Eskom's intention to investigate the potential development of up to 20 000 MW of nuclear power generating capacity - application for the second nuclear power station may be submitted soon after the submission of the Final EIR for Nuclear-1


SITE SELECTION
KLEINSEE
Brazil
Schulpfontein
DUYNEFONTEIN
Adjacent to Koeberg NPS
Approx 34 km N of Cape Town city centre
THYSPUNT
Within the Cacadu District Municipality
Approx 80 km W of Port Elizabeth with Humansdorp located 15 km to the N
Approx 7km E of Oyster Bay
LEGEND
TOWNS
Nuclear Power Station
Potential Nuclear Sites
Duynefontein
Koeberg N.P.S.
Palmiet PS
Cape Town
PEARLY BEACH
Bantamsklip
OYSTER BAY
MANDELA METROPOLE
Port Elizabeth
Thyspunt
BANTAMSKLIP
Within the Overberg District Municipality
Approx 10 km E of Pearly Beach
Approx 50 km NW of Cape Agulhas


LOCALITY
R 330
Krom River
Protective Action Zone (800 m radius)
Eskom property
Oyster Bay
5.5 km
10 km
St. Francis Bay
11.5 km
Thyspunt
Cape St. Francis
Indian Ocean
Slide 16

ASSESSMENT OF IMPACTS

- **The potential impacts assessed were based on:**
  - Issues identified by I&APs during the public participation process (PPP)
  - Issues identified by specialists through research
  - Experience of relevant specialists with projects of a similar nature or in a similar environment
  - Consultation with local specialists
  - Environmental resources and conditions identified during site surveys

METHODOLOGY

- Independent specialists assessed potential positive and negative impacts with and without mitigation
- According to the specialists:
  - all potential negative impacts can be mitigated
  - there are no fatal flaws at any of the alternative sites

SPECIALIST STUDIES

- **Physical Impacts**
  - Geology and geological risk
  - **Seismological risk**
  - Geo-hydrology
  - Geotechnical characteristics
- **Biophysical Impacts**
  - **Dune geomorphology**
  - **Flora**
  - **Fauna (Invertebrate and Vertebrate)**
  - Hydrology
  - **Freshwater ecosystems**
  - Oceanographic conditions
  - **Marine biology**
  - Air quality
  - Assessment of the 1:100 year floodline

SPECIALIST STUDIES

- **Socio-economic Impacts**
  - **Social**
  - **Economic**
  - Noise
  - Visual
  - **Heritage and cultural resources**
  - Waste
  - **Tourism**
  - **Agriculture**
  - Transport
- As per the NNR / DEA co-operative agreement, a number of specialist studies related to human health risk and safety were commissioned and included in this EIR for information (4 studies)

SPECIALIST STUDY RESULTS

- **Seismological Risk**

Seismic studies indicate that the design basis for the respective sites in terms of peak ground acceleration values (PGA) are as follows:

- Duynefontein – PGA ~0.30 g
- Bantamsklip - PGA ~0.23 g
- Thyspunt - PGA ~0.16 g

SPECIALIST STUDY RESULTS

- **Impacts on Dune Geomorphology and associated geo-hydrology (landforms, sand and water movement)**
  - Groundwater does not 'daylight' at **Duynefontein** and **Bantamsklip** sites: access roads and transmission lines can be built across the mobile dunes
  - The interaction between dune systems and wetlands is complex at **Thyspunt**, since groundwater 'daylights' in many inter-dune areas
  - Haul roads and conveyor belts through Oyster Bay dunefield at **Thyspunt** between the nuclear power station and the HV yard, may cause more significant dune geomorphology impacts than at the other two sites

Impacts on Dune Geomorphology

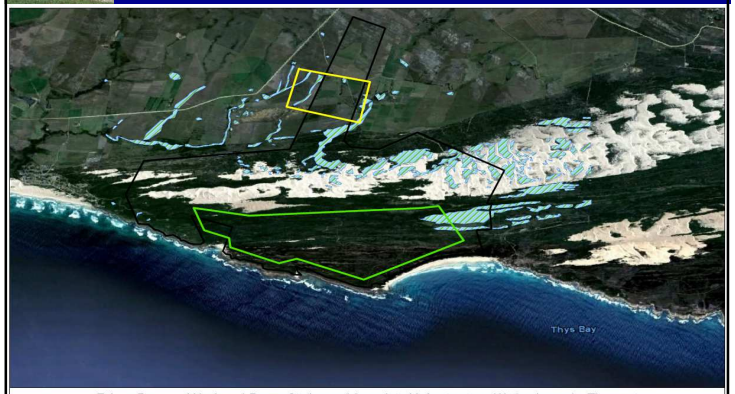
SPECIALIST STUDY RESULTS

- **Impacts on Flora (plants)**
  - **Bantamsklip** will experience the least potential negative impact on plant communities and species - the ecosystems on this site are fairly common along this section of coastline
  - **Thyspunt** has the greatest diversity of vegetation communities (nine), including extensive and highly sensitive wetlands (6 of the 9 communities)
    - 383 plant species and low rare species count
    - Low endemism
    - Habitat resilience low for dunes, limestones and wetlands
    - Important headland bypass dune system

SPECIALIST STUDY RESULTS

- **Impacts on Wetlands**
  - Development of a nuclear power station at **Duynefontein** is unlikely to result in any unmitigable, highly significant negative impacts on wetlands
  - Development of the proposed nuclear power station at **Bantamsklip** would not be associated with any unmitigable impacts to wetland systems
  - **Thyspunt** wetland systems are complex and potential negative impacts could occur without appropriate mitigation

THYSPUNT WETLANDS



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: Wetlands on site Thyspunt

SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Vertebrates (mammals and birds)**
  - Amount of land that is not of high faunal sensitivity at **Duynefontein** is more than sufficient for the nuclear power station
  - At **Bantamsklip** the nuclear power station could have significant negative potential impacts, without mitigation, because of the impacts on faunal habitats within the footprint
  - At **Thyspunt** a nuclear power station would have significant potential negative impacts, without mitigation, because of the potential impacts on faunal habitats within the footprint, the development of two access roads and proposed infrastructure across the dunefield

SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Invertebrates (insects)**
  - Potential impacts on terrestrial invertebrate communities are similar for all alternative sites, with site-specific differences
  - **Duynefontein:**
    - None of the butterflies are endangered or endemic
    - Low to very low overall insect sensitivity
    - New species of ant found is regarded as a generalist (likely to be found on other areas of the site)

SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Invertebrates**
  - **Thyspunt** has the highest butterfly diversity and conservation value of the alternative sites
  - From the viewpoint of potential positive impacts of the nuclear power station, **Duynefontein** already positively benefits under the management of Eskom, which means that it would experience the least improvement in conservation status
  - **Bantamsklip** and **Thyspunt** would benefit substantially from formal protection status, resulting in a net positive impact on insect communities

SPECIALIST STUDY RESULTS

- **Economic Impacts**
  - Positive macro-economic impacts will be greatest at **Bantamsklip** and **Duynefontein** as the sites are situated in a province with a larger, more diversified economy. Nuclear-1 would result in less dislocation of economic activities if located at Duynefontein than at either of the other two sites
  - Macroeconomic indicators favour **Duynefontein** and **Bantamsklip**
  - Cost-effectiveness analysis indicates that **Thyspunt** is slightly favoured relative to **Duynefontein** and more favoured relative to **Bantamsklip**.
  - The differences between the alternative sites are slight, and all the sites would have positive economic impacts both on the local area and the province in which they are situated
  - The economic impact assessment gives greater weight to the cost-effectiveness analysis, which favours **Thyspunt**

SPECIALIST STUDY RESULTS

- **Heritage Impacts (archaeological sites and fossils)**
  - All alternative sites contain significant heritage resources
  - **Duynefontein** is palaeontologically highly sensitive, but has less Stone Age heritage than **Bantamsklip** or **Thyspunt**
  - **Thyspunt** more sensitive than **Bantamsklip** in terms of its heritage richness – sites mostly along coast at all sites. 200 m setback line recommended to protect heritage sites

SPECIALIST STUDY RESULTS

Marine Biology Impacts

- Potential impacts similar at all sites and the impacts can be mitigated if the proposed designs are implemented as planned
- Potentially the most significant impacts are:
  - Disruption of the marine environment through the offshore disposal of sediment
  - Release of warmed cooling water
- Spoil disposal will have a potentially highly significant long-term negative impact on the marine environment within a localised area (3 km^2 initially to 6 km^2 [2 x 3 km] after 5 years) – acceptable impact according to marine specialist

SPECIALIST STUDY RESULTS

Marine Biology Impacts

- Impacts on Chokka fishing industry:
  - Chokka spawn at depths less than 50 m
  - Recommended that spoil must be released in depths more than 50 m (1.4 - 1.8 km offshore) and medium pumping rate
  - Warm water release recommendations to aid heat dissipation:
    - tunnelled design
    - multiple release points
    - high flow rate
    - above sea floor

SPECIALIST STUDY RESULTS

Marine Biology Impacts

- Radionuclides such as Cesium (Cs-137) and Strontium (Sr-90) present in oceans alongside other elements since 1940s
- Background Cesium has been recorded at Koeberg before the power station was established - detected in mussels, sand mussels and fish below levels at which further investigation would be required
- Strontium not recorded in marine organisms at Koeberg
- Due to few organisms in which Cesium has been recorded, low concentrations and lack of Strontium, these nuclides have no detectable potential impact on marine organisms

SPECIALIST STUDY RESULTS

Social Impacts

- Potential negative impacts relate to accommodation for temporary workers during construction
- Potential positive impact is the provision of electricity and related benefits to the broader national and regional economies
- Perceived risks associated with nuclear incidents could potentially lead to a change in attitude and behaviour – reliable information is important

SPECIALIST STUDY RESULTS

Tourism Impacts

- Communities at **Thyspunt** and **Bantamsklip** have expressed opposition to the proposed power station
- **Thyspunt** community highlighted the premium nature of the top-end coastal vacation destination
- **Bantamsklip** community emphasised the new and fragile nature of the developing tourism product and the local dependence thereon
- Some **Duynefontein** tourism stakeholders have personal objections to another power station, however they recognise the potential for increased business and promote a generally positive outlook for tourism

SPECIALIST STUDY RESULTS

Tourism Impacts

- Assessment takes account decline in nature-based tourism as well as an increase in business-related tourism associated with the proposed nuclear power station
- **Duynefontein** – limited potential impact during construction; potential 1.4% improvement during operation
- **Bantamsklip** - potential 5% positive impact during construction; a potential 8.6% improvement during operation
- **Thyspunt** – potential 7.9% negative impact during construction; 0% impact during operation

SPECIALIST STUDY RESULTS

Agricultural Impacts

- Agriculture around **Thyspunt** is based mainly on milk production (2008: R150 m per annum)
- Fynbos farming prevails at the **Bantamsklip** although there is some dairy as well as grape, beef, sheep and game farming (2008: R29 m per annum)
- **Duynefontein** is based on mixed farming (2008: R75 m per annum)

SPECIALIST STUDY RESULTS

Agricultural Impacts

- **Duynefontein** – no impact on agriculture during construction and operation
- **Bantamsklip** – negative potential impact of dust (construction). Potential of less than 5% increase in local market due to water limitations that restrict expansion
- Thyspunt – negative potential impact of dust (construction). Potential for 15% positive impact on production due to increased local market

PROJECT ALTERNATIVES

- **Location of the power station (i.e. site selection)**
- Forms of power generation
- Nuclear plant types
- **Layout of the nuclear plant**
- **Fresh water supply and utilisation of abstracted groundwater**
- Management of brine
- Intake of sea water
- **Outlet of water**
- Management of spoil material
- Access to Thyspunt
- **Waste**
- **No-development (i.e. 'No-Go')**

SITE SELECTION

- Site selection was based on:
  - Results of independent specialist studies: the significance of potential impacts, with mitigation, at each of the alternative sites
  - An integration workshop, involving all specialists, where ranking of the sites and key decision factors were agreed on
  - Quantified ranking taking into account the key decision factors

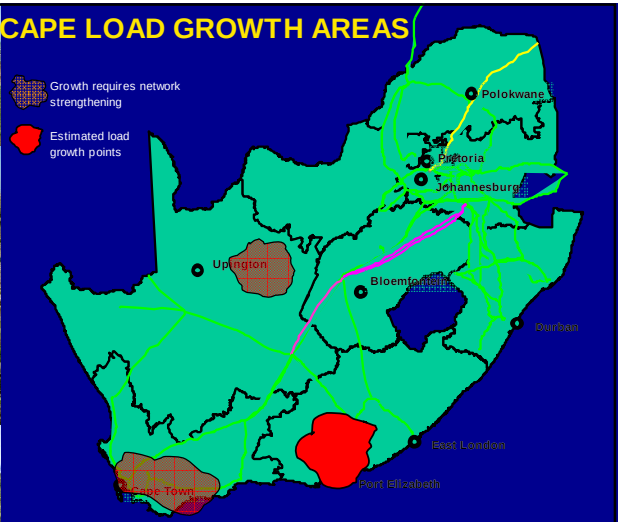
SITE SELECTION

- Impacts of low significance at all alternative sites filtered out e.g. noise, visual impacts, hydrology
- Impacts of medium and high significance that have the same significance at all sites were filtered out e.g. social
- The key factors for decision-making:
  - Integration into the national grid
  - Seismic suitability
  - Impacts on dune geomorphology
  - Impacts on wetlands
  - Impacts on vertebrate fauna
  - Impacts on invertebrate fauna
  - Economic impacts

INTEGRATION INTO THE NATIONAL GRID

- Where do we require power stations for future load growth?
- Electricity needs to be transmitted from the high voltage yard at the power station through a network of transmission and distribution lines to end users
- To improve efficiency, Eskom tries connect new base load generation to the closest load, where possible

CAPE LOAD GROWTH AREAS



SITE SELECTION

A number of factors indicate that **Bantamsklip** cannot be regarded as a **preferred alternative** for Nuclear-1 when compared to the other two alternative sites:

- Substantially higher construction costs due to its remote location (requirements for upgrading of roads and bridges and lengthy transmission lines)
- Cumulative environmental impacts of the transmission corridors
- Potential impacts on invertebrate fauna

Bantamsklip is regarded as the least preferred site alternative for Nuclear-1

SITE SELECTION: RECOMMENDATIONS

A quantitative assessment of key criteria indicates that **Thyspunt** is preferred (with a score of 76 as opposed to **Duynefontein**'s score of 57) due to:

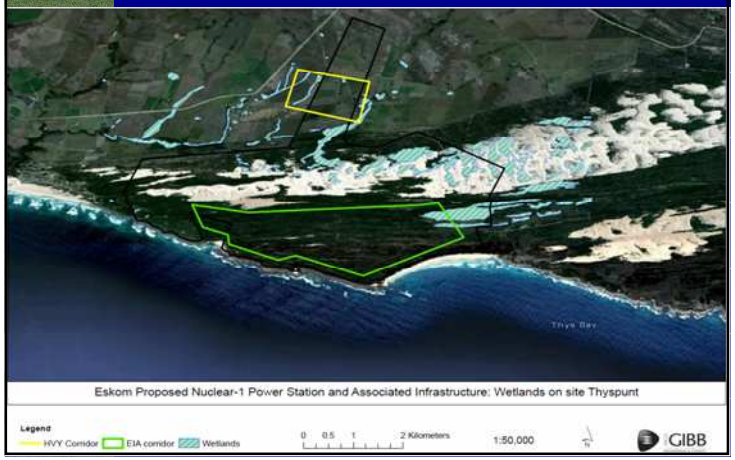
- Lower seismic risk
- Relative ease of integration into the transmission grid
- Site's locality relative to the Port Elizabeth load centre
- Potential benefits of the conserving the majority of the site (2 400ha), as well as additional land being managed for conservation purposes
- Conservation benefits would not be realised at Duynefontein

NUCLEAR PLANT LAYOUT

- Sensitivity maps of all specialist studies were integrated and composite maps were produced to indicate areas of high environmental suitability for each alternative site

- Finalisation of the site layout plans will require detailed investigations, in conjunction with relevant qualified and experienced specialists

Site Sensitivity: Thyspunt – Wetlands

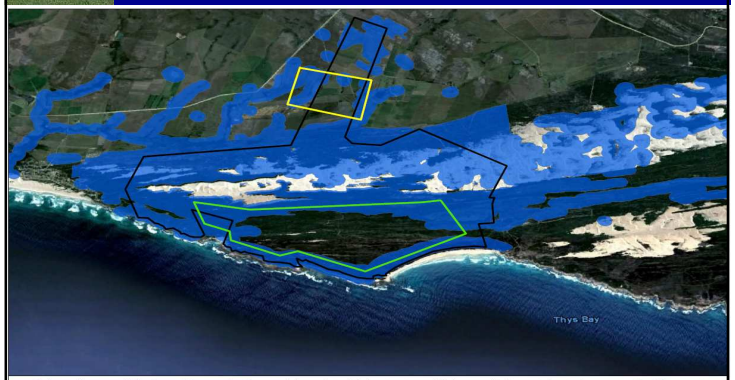


Site Sensitivity: Thyspunt – Flora

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity vegetation fauna on site Thyspunt

Legend
HVY Corridor
EIA corridor
Vegetation
0 0.5 1 2 Kilometers
1:50,000
GIBB

Site Sensitivity: Thyspunt – Vertebrate Fauna



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity vertebrate fauna on site Thyspunt

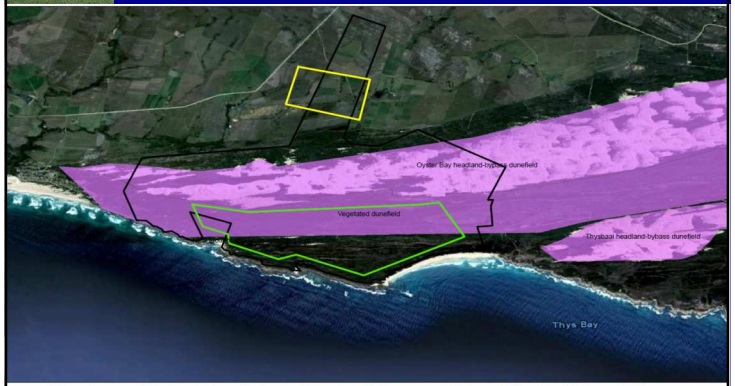
Legend
HVY Corridor
EIA corridor
Vertebrate Fauna
0 0.5 1 2 Kilometers
1:50,000
GIBB

Site Sensitivity: Thyspunt – Heritage

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity heritage features on site Thyspunt

Legend
HVY Corridor
EIA corridor
Heritage
0 0.5 1 2 Kilometers
1:50,000
GIBB

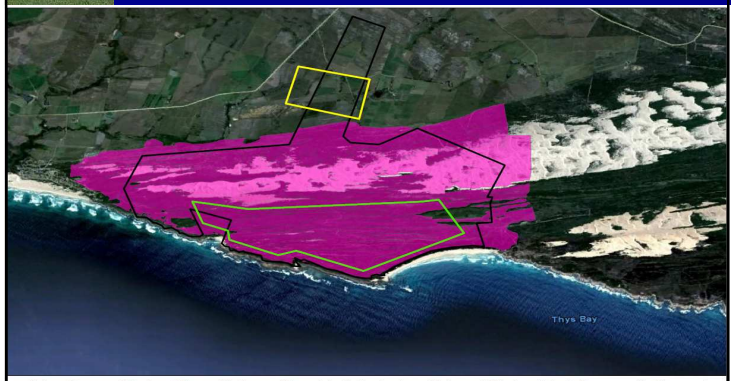
Site Sensitivity: Thyspunt – Dunefields



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity dunefields on site Thyspunt

Legend
HVY Corridor
EIA corridor
Dune Geomorphology
0 0.5 1 2 Kilometers
1:50,000
GIBB

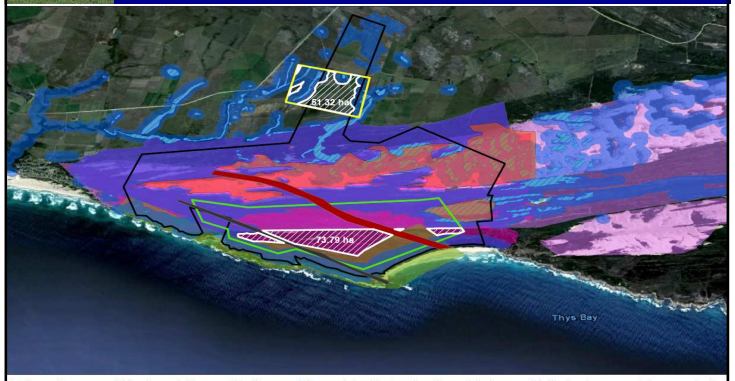
Site Sensitivity: Thyspunt – Invertebrate Fauna



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity invertebrate fauna on site Thyspunt

Legend
HVY Corridor | EIA corridor | Invertebrate Fauna
0 0.5 1 2 Kilometers
1:50,000
GIBB

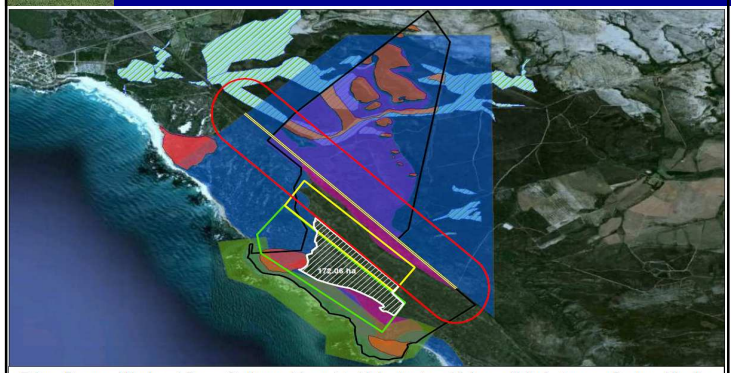
Site Sensitivity: Thyspunt – Combined Sensitivity



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity features on Thyspunt site

Legend
Least sensitive area | Vertebrate fauna | Dune geomorphology
HVY corridor | Heritage | Geology, Seismology and Geotechnics
EIA corridor | Wetlands | 'No-go' Zone of Seismic Hazard (Goudini/ Cederberg Transition)
Vegetation | Invertebrate fauna | 'No-go' Zone of Seismic Hazard (Skurweberg/Goudini Transition)
0 0.5 1 2 Kilometers
1:50000
GIBB

Site Sensitivity: Bantamsklip – Combined Sensitivity



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity features on Bantamsklip site

Affected portion of the road | EIA corridor | Invertebrate Fauna
800m road buffer | Vegetation | Wetlands
Least sensitive area | Heritage | Geotechnical and seismology not significant
HVY corridor | Vertebrate fauna
0 0.5 1 2 Kilometers
1:50000
GIBB

Site Sensitivity: Duynefontein – Combined Sensitivity

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity features on Duynefontein site

Legend
Affected portion of road | EIA corridor | Invertebrate fauna
800m road buffer | Heritage | Wetlands (not significant)
Least sensitive area | Vegetation | Geotechnical and seismology not significant
0 0.5 1 2 Kilometers
1:65000
GIBB

CONSERVATION BENEFITS

- In spite of potentially significant negative impacts, all biophysical specialists in agreement:
  - no fatal flaws at any of the sites
  - positive impacts for conservation of the area outside the footprint of the power station at **Thyspunt** and **Bantamsklip** are significant
- Acquisition of properties for conservation outside the current **Thyspunt** property for wetland conservation
- To guarantee conservation benefits, property's conservation status must be secured, i.e. declared as an official nature reserve

Slide 57

FRESH WATER SUPPLY AND UTILISATION OF ABSTRACTED GROUNDWATER

- At all sites desalination provides a guaranteed source of fresh water supply for the lifespan of the proposed nuclear power station without jeopardising the availability of fresh water to other users
- Desalinisation plant is therefore the preferred alternative for the provision of fresh water at all sites, from the construction phase

Slide 58

INTAKE AND OUTLET OF WATER

- Installation of intake and outlet tunnels that obtain water from the ocean and feed cooling water into a storage area located adjacent to the cooling water pump houses is the only feasible alternative for all sites
- Outlet structures for cooling water and chemical effluent must be offshore
- All releases need to occur at the distances and depths prescribed by the relevant specialists
- Provided that the specific mitigation measures identified in the marine biology report are adhered to, offshore effluent release above the sea floor is the recommended alternative

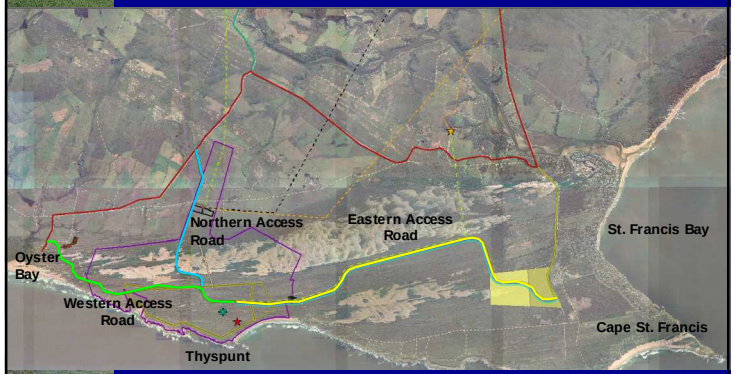
Slide 59

MANAGEMENT OF SPOIL MATERIAL

- Fine spoil must be disposed of in the marine environment at all sites
- Spoil material that cannot be pumped to sea, must be disposed of on land and used for activities like levelling of the HV yard and to minimise the footprint on the terrestrial environment
- Visual impact of spoil dumps must be minimised
- Transport of spoil to the panhandle at Thyspunt via conveyor belt is not recommended due to the Oyster Bay mobile dune system

Slide 60

ACCESS ROAD ALTERNATIVES



ACCESS TO THE THYSPUNT SITE

- Eastern Access Road is required by Eskom for heavy loads and there is no alternative to this route
- Western Access Road is favoured over the Northern Access Road, with respect to the potential impacts on agriculture, flora, wetlands, dune geomorphology and heritage resources
- Northern Access Road is favoured only in terms of visual impacts
- Western Access Road is preferred for **Thyspunt**

WASTE TYPES

- Low-level waste: ± 940 drums (50 – 100 kg per drum) per year
- Intermediate level waste: ± 160 x 6.3 ton concrete drums per year
- High level waste: ± 1 880 tons of spent fuel over life of power station (60 years)

WASTE DISPOSAL

- Only feasible alternative for the disposal of Low-Level and Intermediate-Level radioactive waste is Vaalputs nuclear waste disposal site in Northern Cape
- This is the only authorised facility for this form of waste in SA. Vaalputs has sufficient capacity for the waste that will be generated by Nuclear-1
- With regards to High-Level Waste, only alternative currently available in SA is long-term storage of the spent fuel in the power station – common practice internationally
- Vaalputs may be considered as a disposal site for High-Level Waste in future

WASTE DISPOSAL

- National Radioactive Waste Management Institute established by the National Radioactive Waste Management Institute Act No. 53 of 2008)
- Act came into effect in Dec 2009
- Subject to NNR Regulations
- Institute will transfer responsibility from NECSA

NO-DEVELOPMENT ALTERNATIVE

- Given the urgent power demand in South Africa, the No-Go alternative is not considered to be an alternative, as Eskom's mandate is to provide power for the country
- Eskom would likely apply to develop coal-fired power stations if the current application is declined as coal-fired generation is the only feasible base load alternative
- Life-cycle environmental impacts of coal-fired power generation are greater than nuclear-fuelled power generation

NO-DEVELOPMENT ALTERNATIVE

- If Eskom does not utilise Bantamsklip and Thyspunt for Nuclear-1, there are two options:
  - Keep as a future nuclear site; or
  - Sell to a willing buyer - this may result in an any alternative form of land use - may not involve management of the majority of the properties as a nature reserve

KEY MITIGATION MEASURES

- Independent specialists have proposed mitigation measures to reduce potential negative impacts
- Draft EMP has been compiled as part of draft EIR and if authorised, it will be a legally binding document
- Compliance to EMP must be independently audited throughout construction and operation
- Mitigation measures for botanical impacts, vertebrate and invertebrate fauna, wetlands and heritage resources are particularly important
- Mitigation of heritage impacts will require the work of a site-specific team dedicated to excavations over a period of several years prior to construction

KEY MITIGATION MEASURES

- Qualified and experienced botanical, wetland, vertebrate and invertebrate fauna, dune geomorphology and heritage specialists will need to find acceptable detailed final access route alignments
- Additional groundwater studies are necessary to improve accuracy to of the groundwater model to understand interaction between groundwater and coastal seep wetlands
- Cut-off wall to prevent drawdown of groundwater affecting wetlands during construction
- Acquisition of properties on eastern side of site outside of current Eskom property up to the western boundary of The Links for dedicated wetland conservation

WAY FORWARD

- Comment Period – 6 March to 10 May (66 days)
- Websites: www.gibb.co.za and www.eskom.co.za/eia
- Public meetings and key stakeholder workshops will be held around the sites assessed from 23 March to 21 April. Minutes of meetings will be sent to attendees
- Comments received will be addressed in the Issues and Response Report in the Final EIR

WAY FORWARD

- Comment Period – 6 March to 10 May (66 days)
- Public meetings and key stakeholder workshops will be held around the sites assessed from 23 March to 21 April. Minutes of meetings will be sent to attendees
- Comments received will be addressed in the Issues and Response Report in the Final EIR
- Final EIR will be submitted to the DEA for consideration and decision-making
- Final decision regarding EIA will be communicated to registered I&APs
- Construction of Nuclear-1 is subject to other approvals e.g. the NNR site safety decision and transmission lines EIA authorisations

WAY FORWARD

Written comments can be submitted by:

- Post: Public Participation Office, Nuclear 1 EIA, PO Box 503, Mtunzini, 3867, SA
- Fax: +27 (0) 35 340 2232
- Email: nuclear1@acerafrica.co.za

MEETING CONDUCT

- Please wait for the discussion session to ask questions
- Introduce yourselves prior to asking a question and indicate your specific interest
- You are welcome to ask the question in your mother tongue. Presentations will be in English
- One person at a time
- Work through the facilitator
- Show respect
- Focus on the issue not the person
- Be constructive
- Agree to disagree

Please switch off all cell phones!

THANK YOU

ESKOM HOLDINGS LIMITED

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR A PROPOSED NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE DEA REF. No.:12/12/20/944

EIA Phase Public Meeting:
Review of Draft Environmental Impact Report

March / April 2010




PROPOSED AGENDA

1. Sign attendance register and discussion with team: 17:00 – 17:50
2. Welcome and introductions: 18:00 – 18:10
3. Presentation of EIA and EMP findings: 18:10 – 19:00
4. Discussion: 19:00 – 19:50
5. Way forward and close: 19:50 – 20:00

MEETING CONDUCT

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- Introduce yourselves prior to asking a question and indicate your specific interest
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- One person at a time
- Work through the facilitator
- Show respect
- Focus on the issue not the person
- Be constructive
- Agree to disagree

Please switch off all cell phones!




MEETING OBJECTIVES

- The focus of the meeting is to provide an opportunity for Interested and Affected Parties (I&APs) to comment on the findings of the EIA and the Draft Environmental Impact Assessment Report (EIR)
- Provide an opportunity for I&APs to seek further clarity on the proposed project, the EIA phase and the Draft EIR
- Provide I&APs with an opportunity for interaction with the EIA team
- Recording of issues - the proceedings will be recorded and used to compile meeting minutes. Comments will be included in the Issues and Response Report (IRR) and changes will be made to the Final EIR, where necessary

KEY ISSUES

- Some people are opposed to and others are in favour of a nuclear power station at Bantamsklip, Thyspunt and Duynefontein
- Concerns about the potential impacts on human health and safety
- Local residents share a deep-felt connection to the area and have a strong “sense of place”
- A power station could potentially be unsightly
- Tourism is linked to conservation and preservation of the coastline

KEY ISSUES

- Marine life could potentially be adversely affected by altered sea temperature and turbulence caused by inflow and output of sea water to the plant
- Concern that commercial and recreational fishing may be negatively impacted
- Light pollution
- Concerns about potential drop in property values
- Concern about cost of constructing a power station
- Some people expressed a lack of trust in the EIA
- Storage of hazardous waste
- Renewable (‘green’) energy (e.g. wind, solar) vs. nuclear

PROJECT MOTIVATION

- Increasing demand for electricity (> 4% growth per annum)
- Projected requirement for more than 40 000 MW of new electricity generating capacity over the next 20 years
- In SA only coal and nuclear power are solutions for base load generation, while gas turbines, hydroelectric power stations and pumped storage schemes are used for peaking and emergency electricity generation

PROPOSED ACTIVITY

- Eskom proposes the construction, operation and decommissioning of a conventional nuclear power station and associated infrastructure either in the Eastern or Western Cape

- A nuclear power station of the Pressurised Water Reactor (PWR) type technology e.g. Koeberg Power Station

- The transmission power lines are subject to separate environmental authorisation processes

TRANSMISSION (TX) LINE EIAs

- Bantamsklip – Scoping phase has been extended to include Multi-stakeholder Workshops and additional public consultation. Revised Draft Scoping Report will be made available for public comment

- Thyspunt and Duynefontein – Scoping Report accepted by Authorities and EIA phase has commenced

PROJECT BACKGROUND

- The power station and directly associated infrastructure will require approximately 31 ha (e.g. Thyspunt: 1.3% of current 2 400 ha Eskom property)
- The footprint assessed makes provision for the potential future expansion of a power station to 10 000 MW or the maximum carrying capacity. Separate EIA required for any further expansion beyond 4 000 MW
- The proposed nuclear power station will include nuclear reactor, turbine complex, spent fuel, nuclear fuel storage facilities, waste handling facilities, intake and outfall pipelines, desalinisation plant and auxiliary service infrastructure (e.g. access roads, OCGT plant, HV yard, visitor centre)

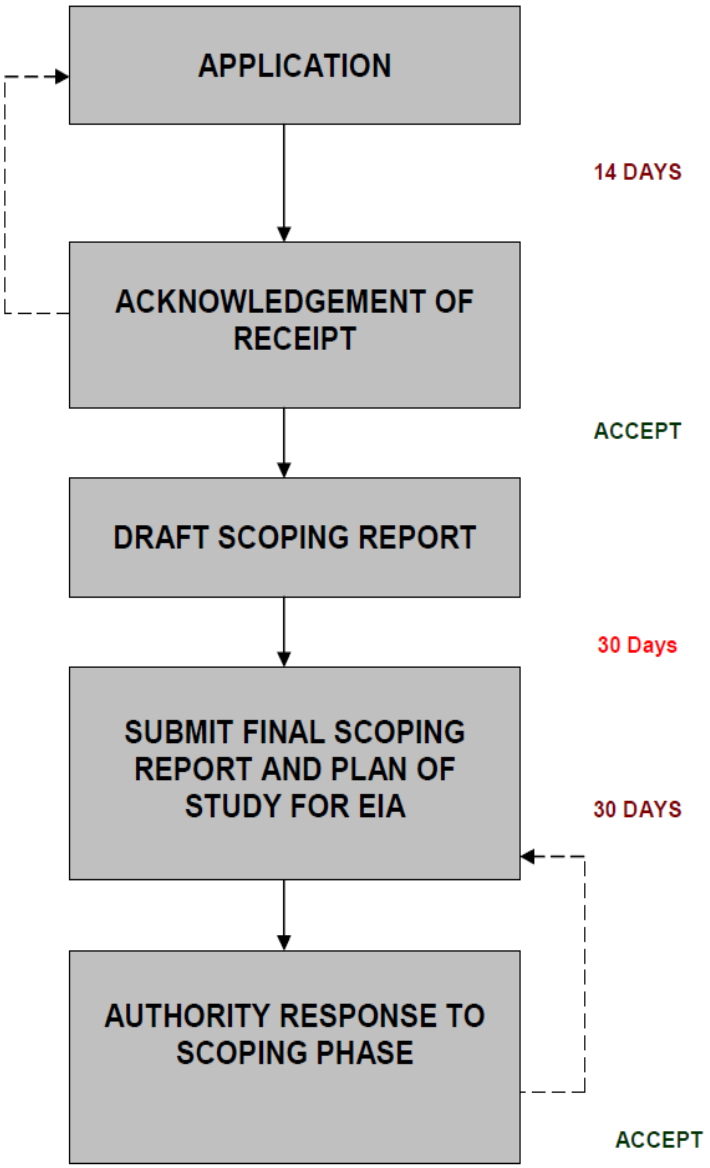



PROJECT BACKGROUND

- Should the proposed project be authorised, it is anticipated that construction of the station could commence in 2011 with the first unit being commissioned in 2018 (optimistic)
- Construction period – 7 to 9 years
- Labour requirements:
  - Construction – 7 700 persons
  - Operation – 1 400 persons
- Construction and operational access routes to Thyspunt site (22 m wide, tarred)
  - Eastern access route (11 km)
  - Western access route (7 km)
- Normal (sedans), heavy (buses, trucks) and exceptionally heavy vehicles (42 m x 8.23 m max.)
- Peak construction vehicle trips: 828 morning and 945 evening

ENVELOPE OF CRITERIA

- Detailed description of proposed nuclear plant is not available, as preferred supplier has not been selected
- Approach used has been to specify enveloping environmental and other relevant requirements, to which the power station design and placement on site must comply
- Enveloping criteria represent the most conservative parameters associated with the various plant alternatives within the available Generation III PWR technology



Application submitted to DEA (May 2007) and amended in July 2008

Mid 2009, Eskom considers amending application to include more than one power station. Eskom subsequently decided not to pursue the amendment

DEA approved the Scoping Report - November 2008

Plan of Study (PoS) for EIA was made available for two rounds of comment

DEA approved Final PoS for EIA - January 2010

Scoping phase of the EIA process complete

EIA PROCESS

60 Days

SUBMIT EIA REPORT AND DRAFT EMP

60 DAYS

AUTHORITY RESPONSE TO EIA REPORT

45 DAYS

DECISION

10 DAYS

GRANT/REFUSE AUTHORISATION

30 DAYS

APPEALS

Current position in the EIA process

In line with Eskom's intention to investigate the potential development of up to 20 000 MW of nuclear power generating capacity - application for the second nuclear power station may be submitted soon after the submission of the Final EIR for Nuclear-1

SITE SELECTION

DUYNEFONTEIN
- Adjacent to Koeberg NPS
- Approx 34 km N of Cape Town city centre

THYSPUNT
- Within the Cacadu District Municipality
- Approx 80 km W of Port Elizabeth with Humansdorp located 15 km to the N
- Approx 7km E of Oyster Bay

BANTAMSKLIP
- Within the Overberg District Municipality
- Approx 10 km E of Pearly Beach
- Approx 50 km NW of Cape Agulhas

LEGEND
- TOWNS
- Nuclear Power Station
- Potential Nuclear Sites

KLEINSEE
Brazil
Schulpfontein
Duynefontein
Koeberg N.P.S.
Palmiet PS
Cape Town
PEARLY BEACH
Bantamsklip
OYSTER BAY
MANDELA METROPOLE
Port Elizabeth
Thyspunt

LOCALITY


"Protective Action Zone" (800 m radius)
Eskom property
5.5 km
10 km
11.5 km
Thyspunt
Oyster Bay
Krom River
R 330
St. Francis Bay
Cape St. Francis
Indian Ocean
Kleinplaas
Woodlands
Rosa
Ripon
Cramond
Linderhof
Boschkloof
Osbosch
Goedgeloof
Morningside
Evergreen
Laurel
Marina Glades
George
Meyers Hope
Perseverance
Sandvlakte
Buffelsbos
Velgelegen
Slangrivier
Oyster Bay
Farm Boundary
Reservoir
Harbour
Avery
Coral
Runway
De Hoek
Cape St.Francis

ASSESSMENT OF IMPACTS

- **The potential impacts assessed were based on:**
  - Issues identified by I&APs during the public participation process (PPP)
  - Issues identified by specialists through research
  - Experience of relevant specialists with projects of a similar nature or in a similar environment
  - Consultation with local specialists
  - Environmental resources and conditions identified during site surveys




METHODOLOGY

- Independent specialists assessed potential positive and negative impacts with and without mitigation

- According to the specialists:
  - all potential negative impacts can be mitigated
  - there are no fatal flaws at any of the alternative sites

SPECIALIST STUDIES

- **Physical Impacts**
  - Geology and geological risk
  - **Seismological risk**
  - Geo-hydrology
  - Geotechnical characteristics

- **Biophysical Impacts**
  - **Dune geomorphology**
  - **Flora**
  - **Fauna (Invertebrate and Vertebrate)**
  - Hydrology
  - **Freshwater ecosystems**
  - Oceanographic conditions
  - **Marine biology**
  - Air quality
  - Assessment of the 1:100 year floodline

SPECIALIST STUDIES

- **Socio-economic Impacts**

  Social

  Economic

  Noise

  Visual

  Heritage and cultural resources

  Waste

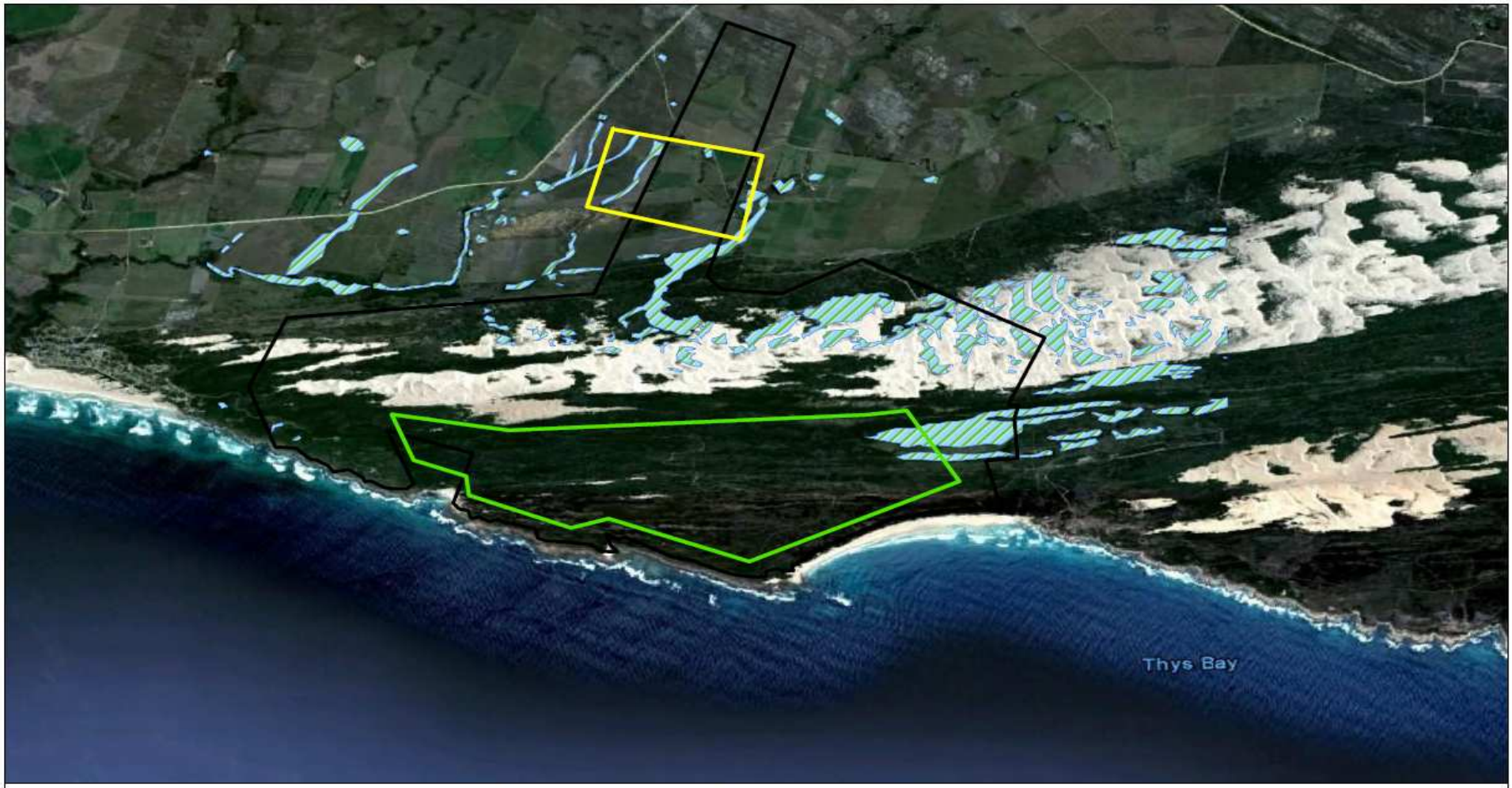
  Tourism

  Agriculture

  Transport

- As per the NNR / DEA co-operative agreement, a number of specialist studies related to human health risk and safety were commissioned and included in this EIR for information (4 studies)

Site Sensitivity: Thyspunt – Wetlands



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: Wetlands on site Thyspunt

Legend

HVY Corridor | EIA corridor | Wetlands

0 0.5 1 2 Kilometers

1:50,000

N

GIBB ENGINEERING & SCIENCE

Site Sensitivity: Thyspunt – Flora

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity vegetation fauna on site Thyspunt

Legend

HVY Corridor | EIA corridor | Vegetation

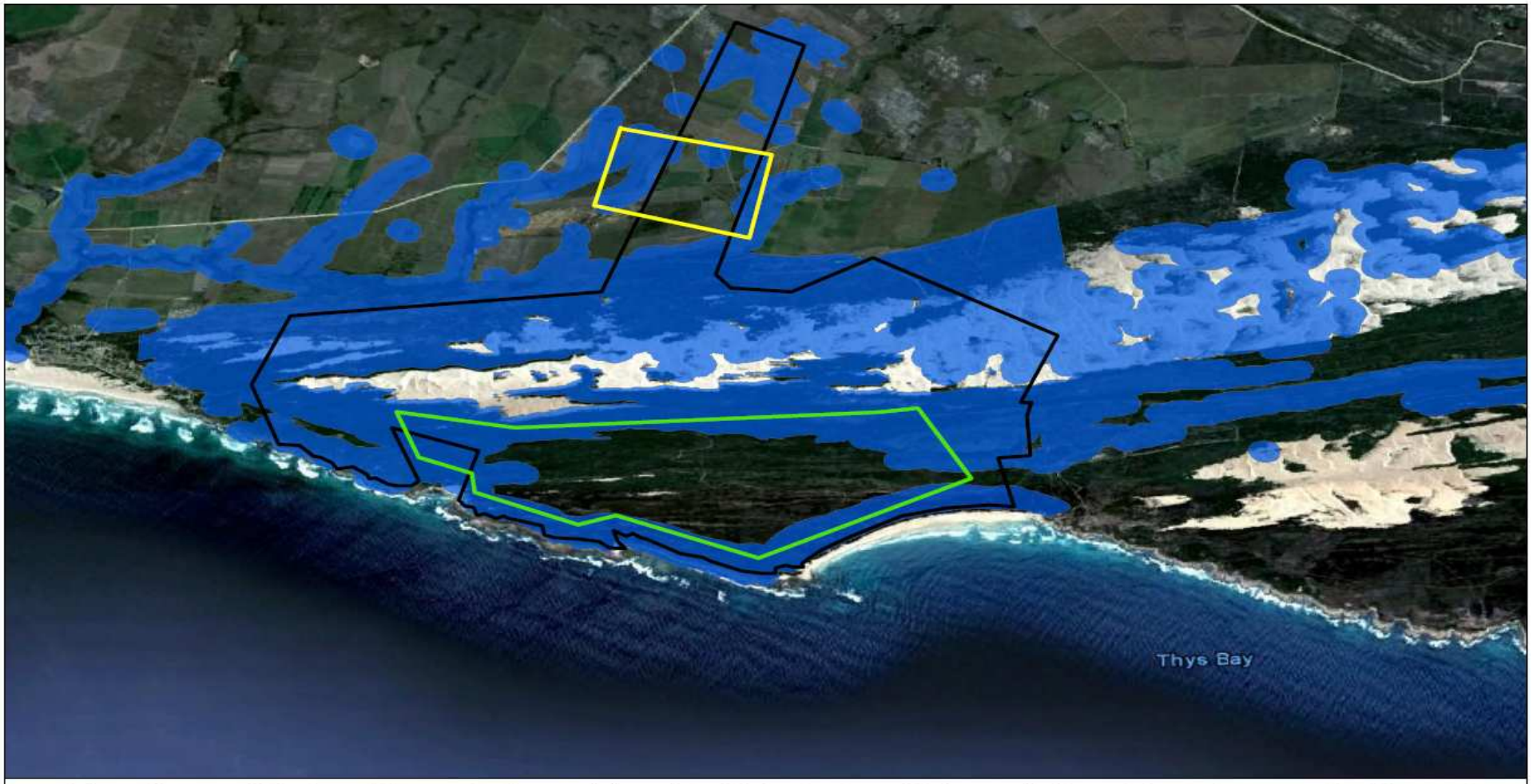
0 0.5 1 2 Kilometers

1:50,000

N

GIBB

Site Sensitivity: Thyspunt – Vertebrate Fauna



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity vertebrate fauna on site Thyspunt

Legend

HVY Corridor | EIA corridor | Vertebrate Fauna

0 0.5 1 2 Kilometers

1:50,000

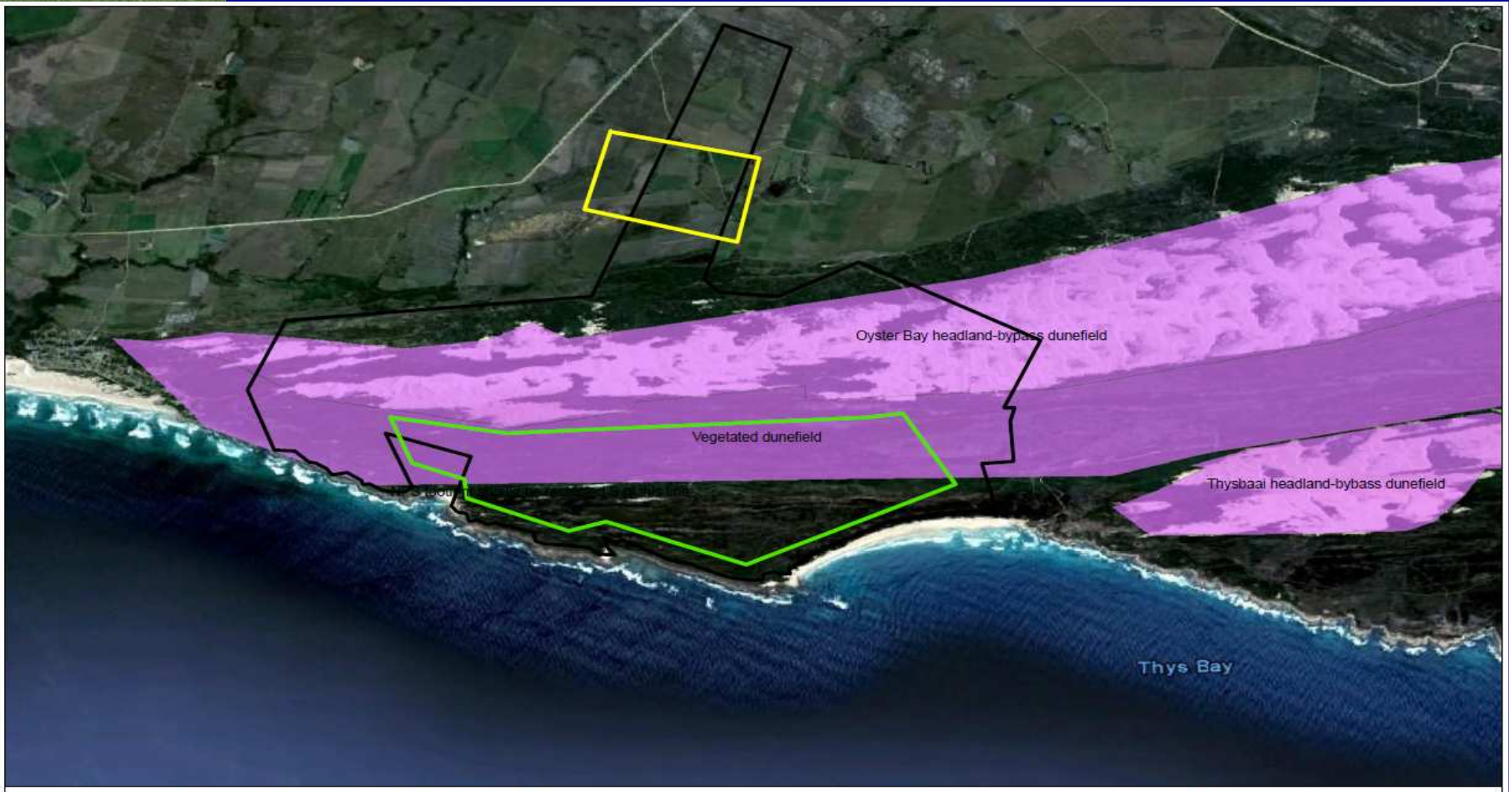
N

GIBB

Site Sensitivity: Thyspunt – Heritage

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity heritage features on site Thyspunt

Site Sensitivity: Thyspunt – Dunefields



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity dunefields on site Thyspunt

Legend

HVY Corridor | EIA corridor | Dune Geomorphology

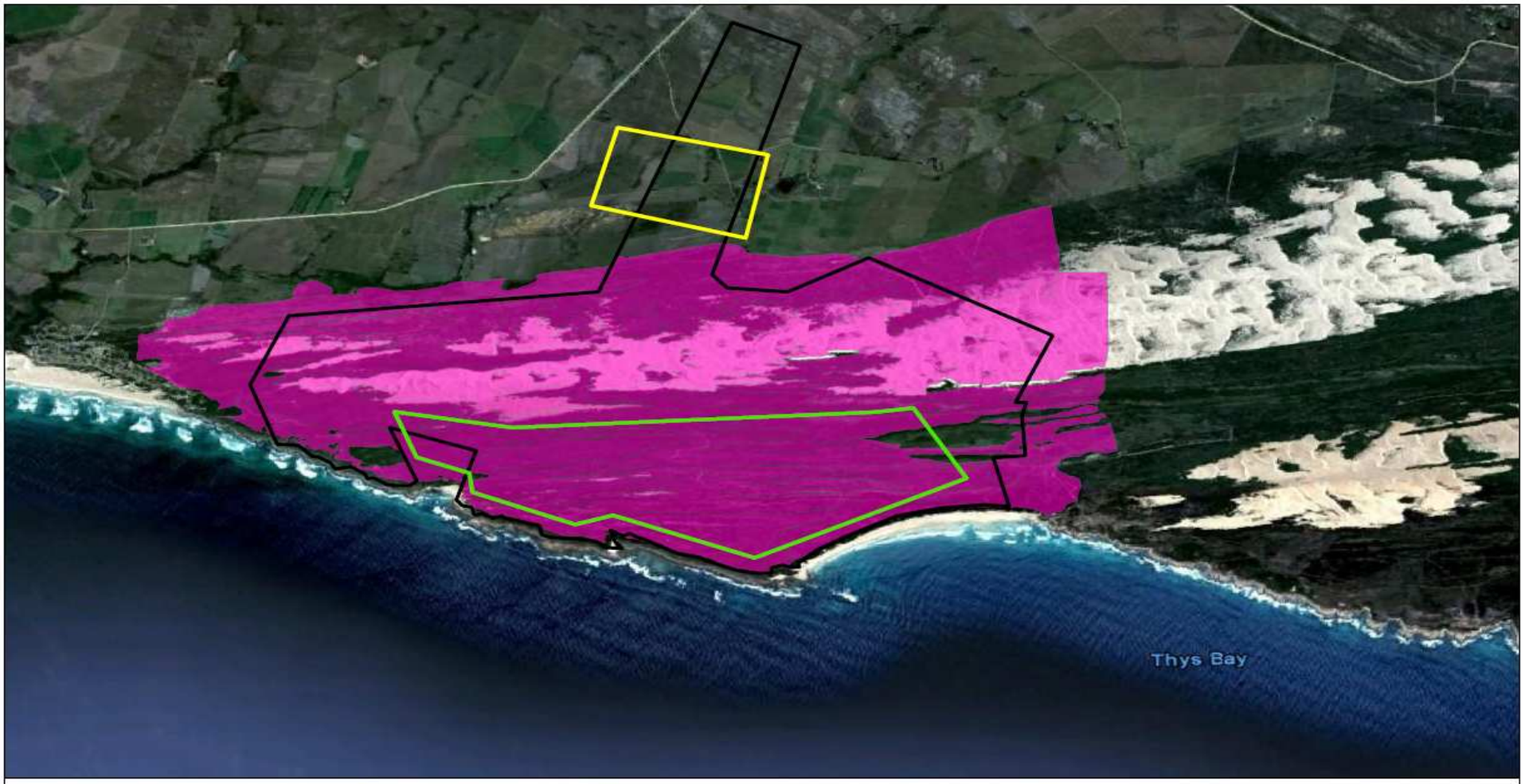
0 0.5 1 2 Kilometers

1:50,000

N

GIBB ENGINEERING & SCIENCE

Site Sensitivity: Thyspunt – Invertebrate Fauna



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity invertebrate fauna on site Thyspunt

Legend

HVY Corridor | EIA corridor | Invertebrate Fauna

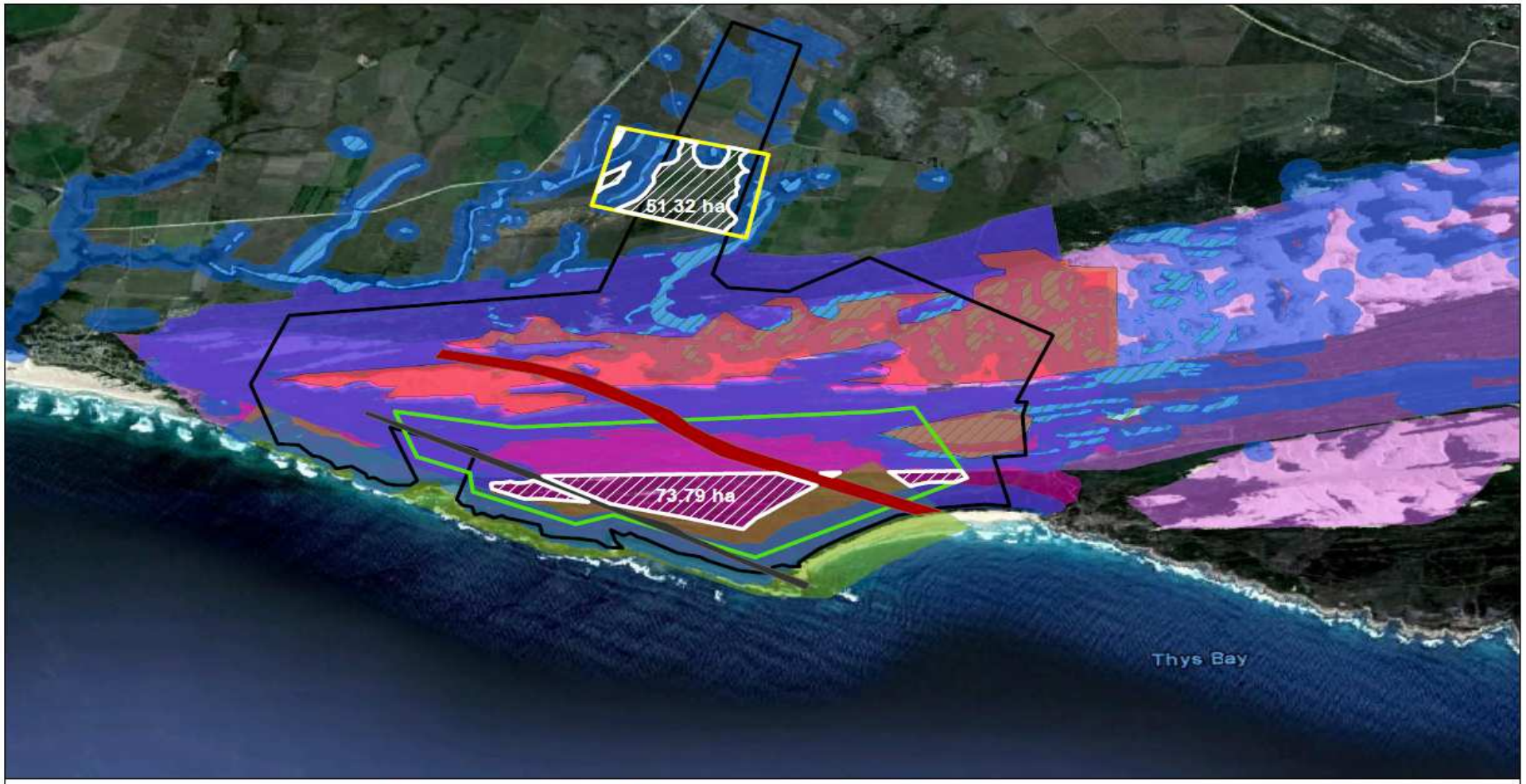
0 0.5 1 2 Kilometers

1:50,000

N

GIBB

Site Sensitivity: Thyspunt – Combined Sensitivity



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity features on Thyspunt site

Legend

- Least sensitive area
- HVY corridor
- EIA corridor
- Vegetation
- Vertebrate fauna
- Heritage
- Wetlands
- Invertebrate fauna
- Dune geomorphology

Geology, Seismology and Geotechnics

- 'No-go' Zone of Seismic Hazard (Goudini/ Cederberg Transition)
- 'No-go' Zone of Seismic Hazard (Skurweberg/Goudini Transition)

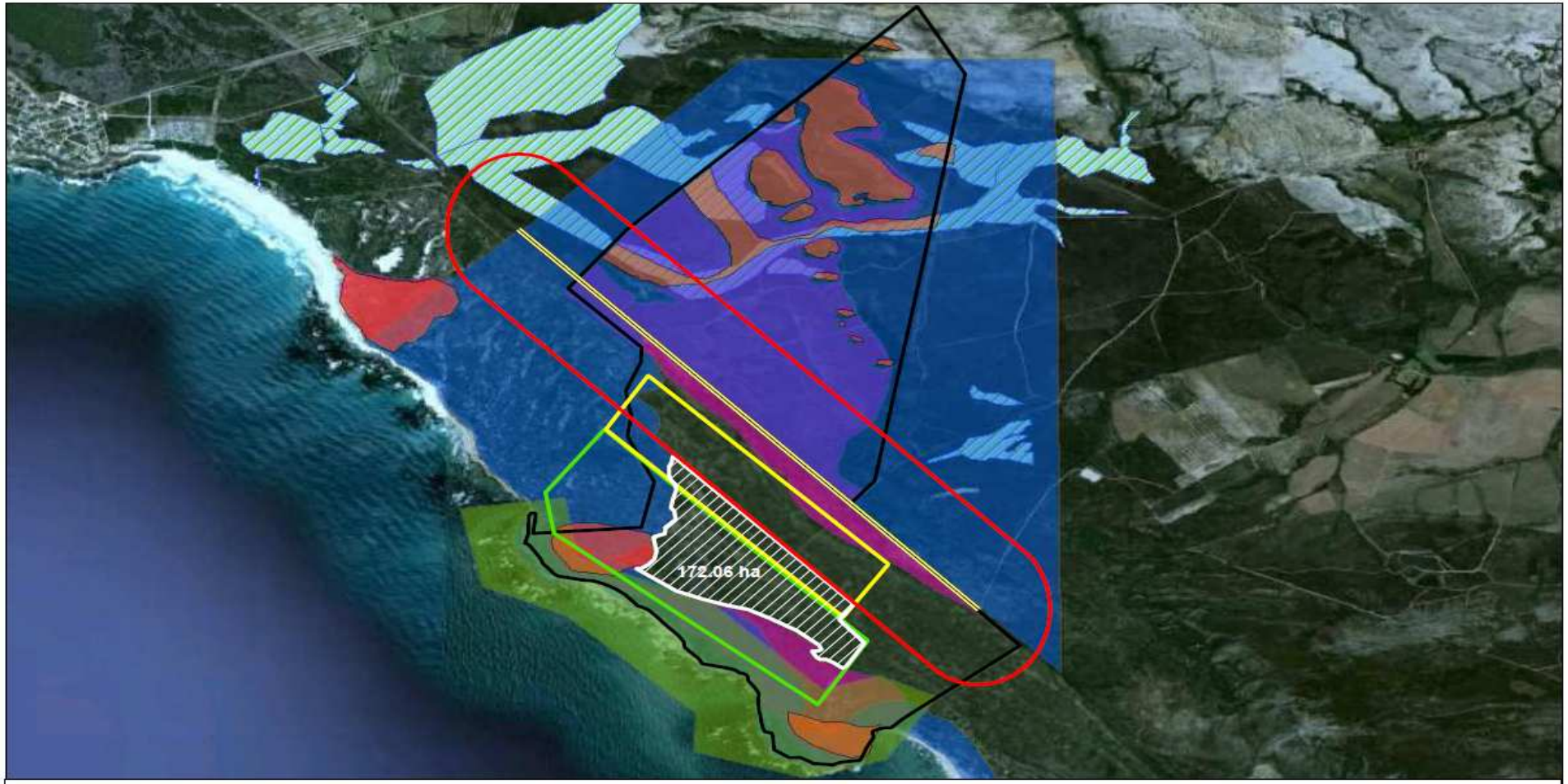
0 0.5 1 2 Kilometers

N

1:50000

GIBB ENGINEERING & SCIENCE

Site Sensitivity: Bantamsklip – Combined Sensitivity



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity features on Bantamsklip site

Affected portion of the road
800m road buffer
Least sensitive area
HVY corridor
EIA corridor
Vegetation
Heritage
Vertebrate fauna
Invertebrate Fauna
Wetlands
Geotechnical and seismology not significant

0 0.5 1 2 Kilometers

N

1:50000

GIBB

Site Sensitivity: Duynefontein – Combined Sensitivity

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity features on Duynefontein site

Legend

- Affected portion of road
- 800m road buffer
- Least sensitive area
- HVY corridor
- EIA corridor
- Heritage
- Vegetation
- Vertebrate fauna
- Invertebrate fauna
- Wetlands (not significant)
- Geotechnical and seismology not significant

0 0.5 1 2 Kilometers

N

1:65000

GIBB ENGINEERING & SCIENCE

KEY MITIGATION MEASURES

- Independent specialists have proposed mitigation measures to reduce potential negative impacts
- Draft EMP has been compiled as part of draft EIR and if authorised, it will be a legally binding document
- Compliance to EMP must be independently audited throughout construction and operation
- Mitigation measures for botanical impacts, vertebrate and invertebrate fauna, wetlands and heritage resources are particularly important
- Mitigation of heritage impacts will require the work of a site-specific team dedicated to excavations over a period of several years prior to construction




KEY MITIGATION MEASURES

- Qualified and experienced botanical, wetland, vertebrate and invertebrate fauna, dune geomorphology and heritage specialists will need to find acceptable detailed final access route alignments
- Additional groundwater studies are necessary to improve accuracy to of the groundwater model to understand interaction between groundwater and coastal seep wetlands
- Cut-off wall to prevent drawdown of groundwater affecting wetlands during construction
- Acquisition of properties on eastern side of site outside of current Eskom property up to the western boundary of The Links for dedicated wetland conservation




WAY FORWARD

- Comment Period – 6 March to 10 May (66 days)
- Websites: www.gibb.co.za and www.eskom.co.za/eia
- Public meetings and key stakeholder workshops will be held around the sites assessed from 23 March to 21 April. Minutes of meetings will be sent to attendees
- Comments received will be addressed in the Issues and Response Report in the Final EIR




WAY FORWARD

- Comment Period – 6 March to 10 May (66 days)
- Public meetings and key stakeholder workshops will be held around the sites assessed from 23 March to 21 April. Minutes of meetings will be sent to attendees
- Comments received will be addressed in the Issues and Response Report in the Final EIR
- Final EIR will be submitted to the DEA for consideration and decision-making
- Final decision regarding EIA will be communicated to registered I&APs
- Construction of Nuclear-1 is subject to other approvals e.g. the NNR site safety decision and transmission lines EIA authorisations

WAY FORWARD

Written comments can be submitted by:

- Post: Public Participation Office, Nuclear 1 EIA, PO Box 503, Mtunzini, 3867, SA
- Fax: +27 (0) 35 340 2232
- Email: nuclear1@acerafrica.co.za

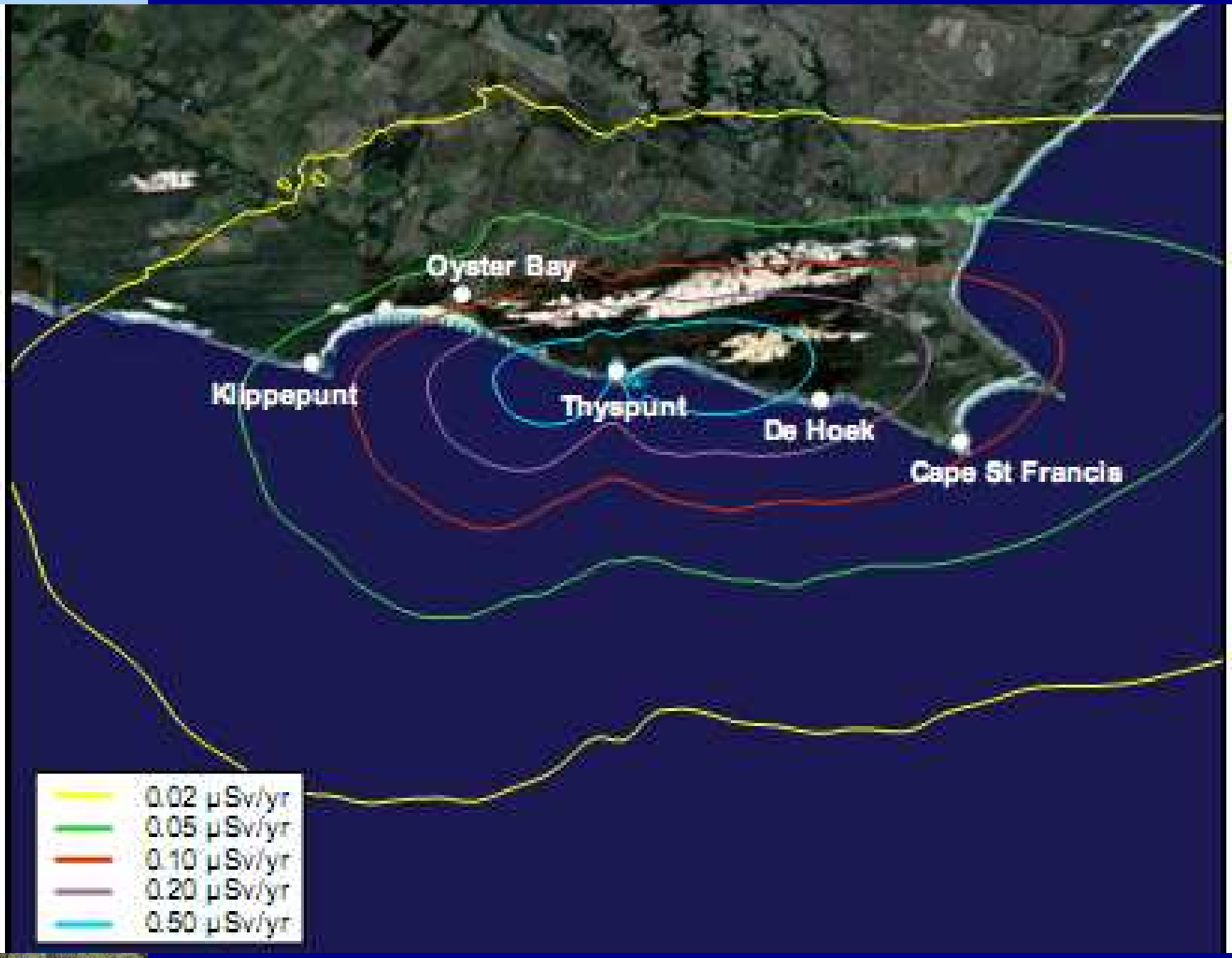



MEETING CONDUCT

- Please wait for the discussion session to ask questions
- Introduce yourselves prior to asking a question and indicate your specific interest
- You are welcome to ask the question in your mother tongue. Presentations will be in English
- One person at a time
- Work through the facilitator
- Show respect
- Focus on the issue not the person
- Be constructive
- Agree to disagree

Please switch off all cell phones!

THANK YOU


Oyster Bay
Klippepunt
Thyspunt
De Hoek
Cape St Francis
0.02 µSv/yr
0.05 µSv/yr
0.10 µSv/yr
0.20 µSv/yr
0.50 µSv/yr

SPECIALIST STUDY RESULTS

Radioactive emissions

"Govt. Notice No. R 388 of 2009 specifies that the annual effective does limit for members of the public … is 1 000 µSV, with an additional provision for an annual does constraint of 250 µSV. The highest predicted inhalation and external effective does of 11.3 µSV is therefore about 4.5% of the dose constraint and about 1% of the annual effective dose limit."

ESKOM HOLDINGS LIMITED

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR A PROPOSED NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE DEA REF. No.:12/12/20/944

EIA Phase Public Meeting:
Review of Draft Environmental Impact Report

March / April 2010

Slide 1

PROPOSED AGENDA

1. Sign attendance register and discussion with team: 17:00 – 17:50
2. Welcome and introductions: 18:00 – 18:10
3. Presentation of EIA and EMP findings: 18:10 – 19:00
4. Discussion: 19:00 – 19:50
5. Way forward and close: 19:50 – 20:00

Slide 2

MEETING CONDUCT

- Please wait for the discussion session to ask questions
- Introduce yourselves prior to asking a question and indicate your specific interest
- You are welcome to ask the question in your mother tongue. Presentations will be in English
- One person at a time
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- Agree to disagree

Please switch off all cell phones!

Slide 3

MEETING OBJECTIVES

- The focus of the meeting is to provide an opportunity for Interested and Affected Parties (I&APs) to comment on the findings of the EIA and the Draft Environmental Impact Assessment Report (EIR)
- Provide an opportunity for I&APs to seek further clarity on the proposed project, the EIA phase and the Draft EIR
- Provide I&APs with an opportunity for interaction with the EIA team
- Recording of issues - the proceedings will be recorded and used to compile meeting minutes. Comments will be included in the Issues and Response Report (IRR) and changes will be made to the Final EIR, where necessary

Slide 4

KEY ISSUES

- Some people are opposed to and others are in favour of a nuclear power station at Bantamsklip, Thyspunt and Duynefontein
- Concerns about the potential impacts on human health and safety
- Local residents share a deep-felt connection to the area and have a strong “sense of place”
- A power station could potentially be unsightly
- Tourism is linked to conservation and preservation of the coastline

KEY ISSUES

- Marine life could potentially be adversely affected by altered sea temperature and turbulence caused by inflow and output of sea water to the plant
- Concern that commercial and recreational fishing may be negatively impacted
- Light pollution
- Concerns about potential drop in property values
- Concern about cost of constructing a power station
- Some people expressed a lack of trust in the EIA
- Storage of hazardous waste
- Renewable (‘green’) energy (e.g. wind, solar) vs. nuclear

PROJECT MOTIVATION

- Increasing demand for electricity (> 4% growth per annum)
- Projected requirement for more than 40 000 MW of new electricity generating capacity over the next 20 years
- In SA only coal and nuclear power are solutions for base load generation, while gas turbines, hydroelectric power stations and pumped storage schemes are used for peaking and emergency electricity generation

PROPOSED ACTIVITY

- Eskom proposes the construction, operation and decommissioning of a conventional nuclear power station and associated infrastructure either in the Eastern or Western Cape
- A nuclear power station of the Pressurised Water Reactor (PWR) type technology e.g. Koeberg Power Station
- The transmission power lines are subject to separate environmental authorisation processes

TRANSMISSION (TX) LINE EIAs

- Bantamsklip – Scoping phase has been extended to include Multi-stakeholder Workshops and additional public consultation. Revised Draft Scoping Report will be made available for public comment
- Thyspunt and Duynefontein – Scoping Report accepted by Authorities and EIA phase has commenced

PROJECT BACKGROUND

- The power station and directly associated infrastructure will require approximately 31 ha
- The footprint assessed makes provision for the potential future expansion of a power station to 10 000 MW or the maximum carrying capacity. Separate EIA required for any further expansion beyond 4 000 MW
- The proposed nuclear power station will include nuclear reactor, turbine complex, spent fuel, nuclear fuel storage facilities, waste handling facilities, intake and outfall pipelines, desalinisation plant and auxiliary service infrastructure (e.g. access roads, OCGT plant, HV yard, visitor centre)

PROJECT BACKGROUND

- Should the proposed project be authorised, it is anticipated that construction of the station could commence in 2011 with the first unit being commissioned in 2018 (optimistic)
- Construction period – 7 to 9 years
- Labour requirements:
  - Construction – 7 700 persons
  - Operation – 1 400 persons
- Construction and operational access routes to site - 22 m wide, tarred
- Normal (sedans), heavy (buses, trucks) and exceptionally heavy vehicles (42 m x 8.23 m max.)
- Peak construction vehicle trips: 828 morning and 945 evening

ENVELOPE OF CRITERIA

- Detailed description of proposed nuclear plant is not available, as preferred supplier has not been selected
- Approach used has been to specify enveloping environmental and other relevant requirements, to which the power station design and placement on site must comply
- Enveloping criteria represent the most conservative parameters associated with the various plant alternatives within the available Generation III PWR technology

APPLICATION

14 DAYS

ACKNOWLEDGEMENT OF RECEIPT

ACCEPT

DRAFT SCOPING REPORT

30 Days

SUBMIT FINAL SCOPING REPORT AND PLAN OF STUDY FOR EIA

30 DAYS

AUTHORITY RESPONSE TO SCOPING PHASE

ACCEPT

Application submitted to DEA (May 2007) and amended in July 2008

Mid 2009, Eskom considers amending application to include more than one power station. Eskom subsequently decided not to pursue the amendment

DEA approved the Scoping Report - November 2008

Plan of Study (PoS) for EIA was made available for two rounds of comment

DEA approved Final PoS for EIA - January 2010

Scoping phase of the EIA process complete

EIA PROCESS

60 Days

SUBMIT EIA REPORT AND DRAFT EMP

60 DAYS

AUTHORITY RESPONSE TO EIA REPORT

45 DAYS

DECISION

10 DAYS

GRANT/REFUSE AUTHORISATION

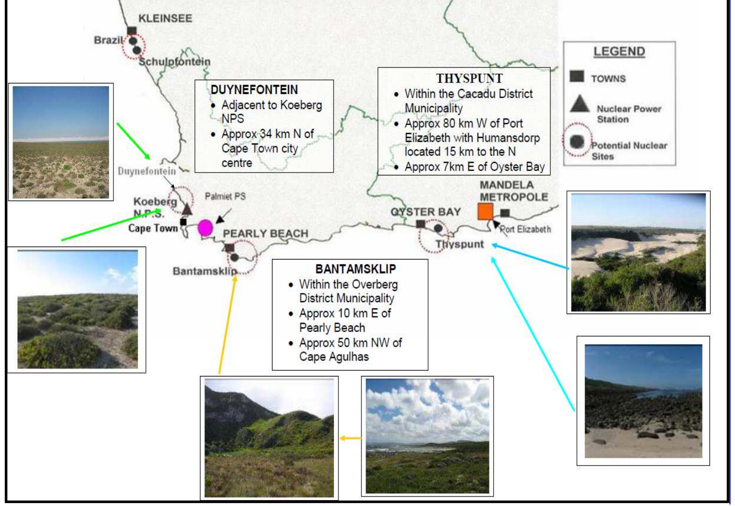
30 DAYS

APPEALS

Current position in the EIA process

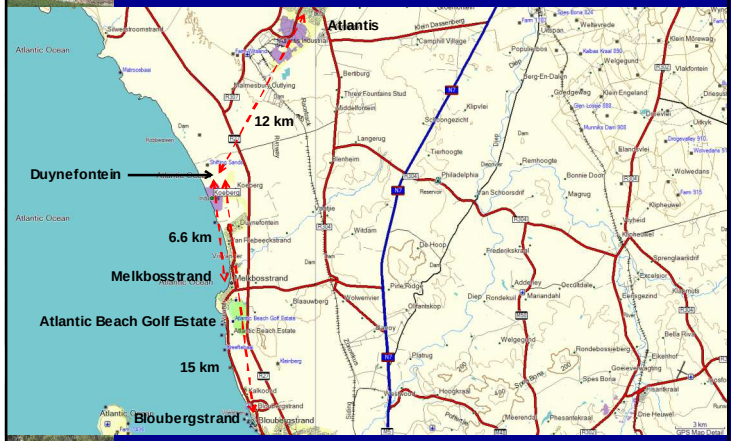
In line with Eskom's intention to investigate the potential development of up to 20 000 MW of nuclear power generating capacity - application for the second nuclear power station may be submitted soon after the submission of the Final EIR for Nuclear-1

SITE SELECTION



LOCALITY

LOCALITY



Slide 17

ASSESSMENT OF IMPACTS

- **The potential impacts assessed were based on:**
  - Issues identified by I&APs during the public participation process (PPP)
  - Issues identified by specialists through research
  - Experience of relevant specialists with projects of a similar nature or in a similar environment
  - Consultation with local specialists
  - Environmental resources and conditions identified during site surveys

Slide 18

METHODOLOGY

- Independent specialists assessed potential positive and negative impacts with and without mitigation
- According to the specialists:
  - all potential negative impacts can be mitigated
  - there are no fatal flaws at any of the alternative sites

Slide 19

SPECIALIST STUDIES

- **Physical Impacts**
  - Geology and geological risk
  - **Seismological risk**
  - Geo-hydrology
  - Geotechnical characteristics
- **Biophysical Impacts**
  - **Dune geomorphology**
  - **Flora**
  - **Fauna (Invertebrate and Vertebrate)**
  - Hydrology
  - **Freshwater ecosystems (wetlands)**
  - Oceanographic conditions
  - **Marine biology**
  - Air quality
  - Assessment of the 1:100 year floodline

Slide 20

SPECIALIST STUDIES

- **Socio-economic Impacts**
  - **Social impacts**
  - **Economic impacts**
  - Noise
  - Visual
  - **Heritage and cultural resources**
  - Waste
  - **Tourism impacts**
  - **Agriculture**
  - Transport
- As per the NNR / DEA co-operative agreement, a number of specialist studies related to human health risk and safety were commissioned and included in this EIR for information (4 studies)

SPECIALIST STUDY RESULTS

- **Seismological Risk**

Seismic studies indicate that the design basis for the respective sites in terms of peak ground acceleration values (PGA) are as follows:

- Duynefontein – PGA ~0.30 g
- Bantamsklip - PGA ~0.23 g
- Thyspunt - PGA ~0.16 g

SPECIALIST STUDY RESULTS

- **Impacts on Dune Geomorphology and associated geo-hydrology (landforms, sand and water movement)**
  - Groundwater does not 'daylight' at **Duynefontein** and **Bantamsklip** sites: access roads and transmission lines can be built across the mobile dunes
  - The interaction between dune systems and wetlands is complex at **Thyspunt**, since groundwater 'daylights' in many inter-dune areas
  - Haul roads and conveyor belts through Oyster Bay dunefield at **Thyspunt** between the nuclear power station and the HV yard, may cause more significant dune geomorphology impacts than at the other two sites

SPECIALIST STUDY RESULTS

- **Impacts on Flora (plants)**
  - **Bantamsklip** will experience the least potential negative impact on plant communities and species - the ecosystems on this site are fairly common along this section of coastline
  - **Thyspunt** has the greatest diversity of vegetation communities, including extensive and highly sensitive wetlands

SPECIALIST STUDY RESULTS

- **Impacts on Wetlands**
  - Development of a nuclear power station at **Duynefontein** is unlikely to result in any unmitigable, highly significant negative impacts on wetlands
  - Development of the proposed nuclear power station at **Bantamsklip** would not be associated with any unmitigable impacts to wetland systems
  - **Thyspunt** wetland systems are complex and potential negative impacts could occur without appropriate mitigation

SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Vertebrates (mammals and birds)**
  - Amount of land that is not of high faunal sensitivity at **Duynefontein** is more than sufficient for the nuclear power station
  - At **Bantamsklip** the nuclear power station could have significant negative potential impacts, without mitigation, because of the impacts on faunal habitats within the footprint
  - At **Thyspunt** a nuclear power station would have significant potential negative impacts, without mitigation, because of the potential impacts on faunal habitats within the footprint, the development of two access roads and proposed infrastructure across the dunefield

SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Invertebrates (insects)**
  - Potential impacts on terrestrial invertebrate communities are similar for all alternative sites, with site-specific differences
  - **Duynefontein:**
    - None of the butterflies are endangered or endemic
    - Low to very low overall insect sensitivity
    - New species of ant found is regarded as a generalist (likely to be found on other areas of the site)

SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Invertebrates**
  - **Thyspunt** has the highest butterfly diversity and conservation value of the alternative sites
  - From the viewpoint of potential positive impacts of the nuclear power station, **Duynefontein** already positively benefits under the management of Eskom, which means that it would experience the least improvement in conservation status
  - **Bantamsklip** and **Thyspunt** would benefit substantially from formal protection status, resulting in a net positive impact on insect communities

SPECIALIST STUDY RESULTS

- **Economic Impacts**
  - Positive macro-economic impacts will be greatest at **Bantamsklip** and **Duynefontein** as the sites are situated in a province with a larger, more diversified economy. Nuclear-1 would result in less dislocation of economic activities if located at Duynefontein than at either of the other two sites
  - Macroeconomic indicators favour **Duynefontein** and **Bantamsklip**
  - Cost-effectiveness analysis indicates that **Thyspunt** is slightly favoured relative to **Duynefontein** and more favoured relative to **Bantamsklip**.
  - The differences between the alternative sites are slight, and all the sites would have positive economic impacts both on the local area and the province in which they are situated
  - The economic impact assessment gives greater weight to the cost-effectiveness analysis, which favours **Thyspunt**

SPECIALIST STUDY RESULTS

- **Heritage Impacts (archaeological sites, fossils and built environment)**
  - All alternative sites contain significant heritage resources
  - **Duynefontein** is palaeontologically highly sensitive, but has less Stone Age heritage than **Bantamsklip** or **Thyspunt**
  - **Thyspunt** more sensitive than **Bantamsklip** in terms of its heritage richness – sites mostly along coast at all sites. 200 m setback line recommended to protect heritage sites

SPECIALIST STUDY RESULTS

Marine Biology Impacts

- Potential impacts similar at all sites and the impacts can be mitigated if the proposed designs are implemented as planned
- Potentially the most significant impacts are:
  - Disruption of the marine environment through the offshore disposal of sediment
  - Release of warmed cooling water
- Spoil disposal will have a potentially highly significant long-term negative impact on the marine environment within a localised area (4.5km^2 at Duynefontein) – acceptable impact according to marine specialist

SPECIALIST STUDY RESULTS

Marine Biology Impacts

- Impacts on Chokka fishing industry at Thyspunt
- Impact on Abalone at Bantamsklip
  - With respect to release of:
    - Spoil
    - Warm water

SPECIALIST STUDY RESULTS

Marine Biology Impacts

- Radionuclides such as Cesium (Cs-137) and Strontium (Sr-90) present in oceans alongside other elements since 1940s
- Background Cesium has been recorded at Koeberg before the power station was established - detected in mussels, sand mussels and fish below levels at which further investigation would be required
- Strontium not recorded in marine organisms at Koeberg
- Due to few organisms in which Cesium has been recorded, low concentrations and lack of Strontium, these nuclides have no detectable potential impact on marine organisms

SPECIALIST STUDY RESULTS

Social Impacts

- Potential negative impacts relate to accommodation for temporary workers during construction
- Potential positive impact is the provision of electricity and related benefits to the broader national and regional economies
- Perceived risks associated with nuclear incidents could potentially lead to a change in attitude and behaviour – reliable information is important

SPECIALIST STUDY RESULTS

Tourism Impacts

- Communities at **Thyspunt** and **Bantamsklip** have expressed opposition to the proposed power station
- **Thyspunt** community highlighted the premium nature of the top-end coastal vacation destination
- **Bantamsklip** community emphasised the new and fragile nature of the developing tourism product and the local dependence thereon
- Some **Duynefontein** tourism stakeholders have personal objections to another power station, however they recognise the potential for increased business and promote a generally positive outlook for tourism

SPECIALIST STUDY RESULTS

Tourism Impacts

- Assessment takes account decline in nature-based tourism as well as an increase in business-related tourism associated with the proposed nuclear power station
- **Duynefontein** – limited potential impact during construction; potential 1.4% improvement during operation
- **Bantamsklip** - potential 5% positive impact during construction; a potential 8.6% improvement during operation
- **Thyspunt** – potential 7.9% negative impact during construction; 0% impact during operation

SPECIALIST STUDY RESULTS

Agricultural Impacts

- Agriculture around **Thyspunt** is based mainly on milk production (2008: R150 m per annum)
- Fynbos farming prevails at the **Bantamsklip** although there is some dairy as well as grape, beef, sheep and game farming (2008: R29 m per annum)
- **Duynefontein** is based on mixed farming (2008: R75 m per annum)

SPECIALIST STUDY RESULTS

Agricultural Impacts

- **Duynefontein** – no impact on agriculture during construction and operation
- **Bantamsklip** – negative potential impact of dust (construction). Potential of less than 5% increase in local market due to water limitations that restrict expansion
- **Thyspunt** – negative potential impact of dust (construction). Potential for 15% positive impact on production due to increased local market

PROJECT ALTERNATIVES

- **Location of the power station (i.e. site selection)**
- Forms of power generation
- Nuclear plant types
- **Layout of the nuclear plant**
- **Fresh water supply and utilisation of abstracted groundwater**
- Management of brine
- Intake of sea water
- **Outlet of water**
- Management of spoil material
- Access to Thyspunt
- **Waste**
- **No-development (i.e. 'No-Go')**

SITE SELECTION

- Site selection was based on:
  - Results of independent specialist studies: the significance of potential impacts, with mitigation, at each of the alternative sites
  - An integration workshop, involving all specialists, where ranking of the sites and key decision factors were agreed on
  - Quantified ranking taking into account the key decision factors

SITE SELECTION

- Impacts of low significance at all alternative sites filtered out e.g. noise, visual impacts, hydrology
- Impacts of medium and high significance that have the same significance at all sites were filtered out e.g. social
- The key factors for decision-making:
  - Integration into the national grid
  - Seismic suitability
  - Impacts on dune geomorphology
  - Impacts on wetlands
  - Impacts on vertebrate fauna
  - Impacts on invertebrate fauna
  - Economic impacts

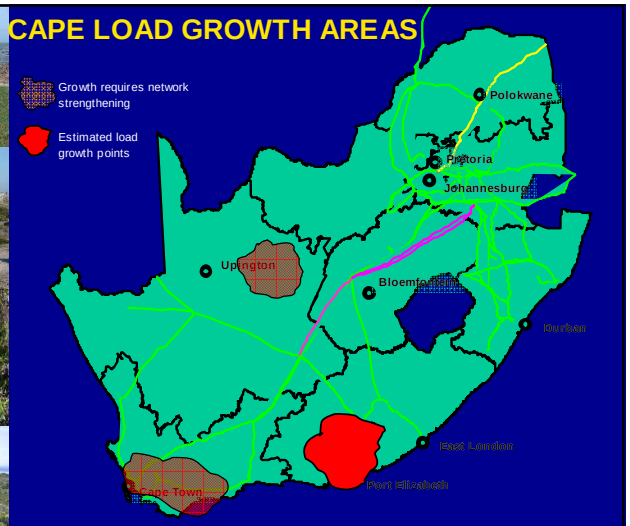
Slide 41

INTEGRATION INTO THE NATIONAL GRID

- Where do we require power stations for future load growth?
- Electricity needs to be transmitted from the high voltage yard at the power station through a network of transmission and distribution lines to end users
- To improve efficiency, Eskom tries connect new base load generation to the closest load, where possible

Slide 42

CAPE LOAD GROWTH AREAS



Slide 43

SITE SELECTION

A number of factors indicate that **Bantamsklip** cannot be regarded as a **preferred alternative** for Nuclear-1 when compared to the other two alternative sites:

- Substantially higher construction costs due to its remote location (requirements for upgrading of roads and bridges and lengthy transmission lines)
- Cumulative environmental impacts of the transmission corridors
- Potential impacts on invertebrate fauna

Bantamsklip is regarded as the least preferred site alternative for Nuclear-1

Slide 44

SITE SELECTION: RECOMMENDATIONS

A quantitative assessment of key criteria indicates that **Thyspunt** is preferred (with a score of 76 as opposed to **Duynefontein**'s score of 57) due to:

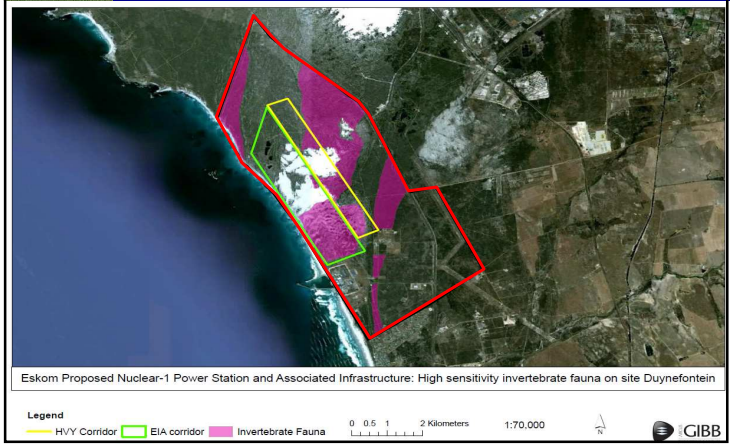
- Lower seismic risk
- Relative ease of integration into the transmission grid
- Site's locality relative to the Port Elizabeth load centre
- Potential benefits of the conserving the majority of the site (2 400ha), as well as additional land being managed for conservation purposes
- Conservation benefits would not be realised at Duynefontein

NUCLEAR PLANT LAYOUT

- Sensitivity maps of all specialist studies were integrated and composite maps were produced to indicate areas of high environmental suitability for each alternative site

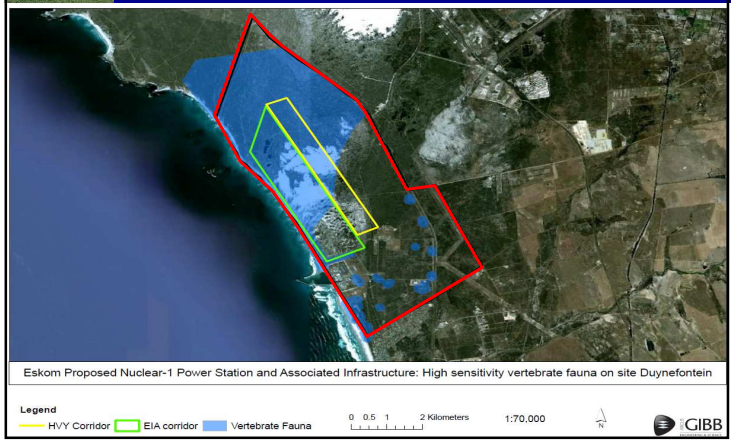
- Finalisation of the site layout plans will require detailed investigations, in conjunction with relevant qualified and experienced specialists

Site Sensitivity: Duynefontein – Invertebrate Fauna



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity invertebrate fauna on site Duynefontein

Site Sensitivity: Duynefontein – Vertebrate Fauna



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity vertebrate fauna on site Duynefontein

Site Sensitivity: Duynefontein – Flora

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity vegetation on site Duynefontein

Legend
HVY Corridor | EIA corridor | Vegetation

0 0.5 1 2 Kilometers

1:70,000

GIBB

Site Sensitivity: Duynefontein – Wetlands

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: Wetlands on site Duynefontein

Legend
HVY Corridor | EIA corridor | Wetlands (not significant)

0 0.5 1 2 Kilometers

1:70,000

GIBB

Site Sensitivity: Duynefontein – Heritage

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity heritage features on site Duynefontein

Legend
HVY Corridor | EIA corridor | Heritage

0 0.5 1 2 Kilometers

1:70,000

GIBB

Site Sensitivity: Duynefontein – Combined Sensitivity

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity features on Duynefontein site

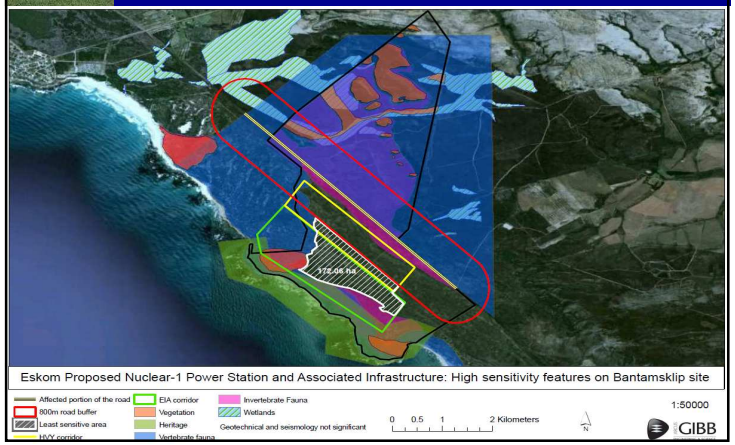
Legend
Affected portion of road | 800m road buffer | Least sensitive area
EIA corridor | Heritage | Vegetation
Invertebrate fauna | Wetlands (not significant)
Geotechnical and seismology not significant

0 0.5 1 2 Kilometers

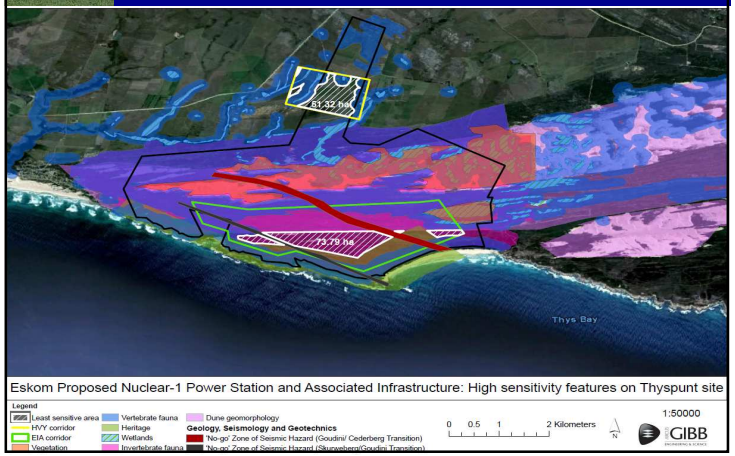
1:65000

GIBB

Site Sensitivity: Bantamsklip – Combined Sensitivity



Site Sensitivity: Thyspunt – Combined Sensitivity



CONSERVATION BENEFITS

- In spite of potentially significant negative impacts, all biophysical specialists in agreement:
  - no fatal flaws at any of the sites
  - positive impacts for conservation of the area outside the footprint of the power station at **Thyspunt** and **Bantamsklip** are significant
- Acquisition of properties for conservation outside the current **Thyspunt** property for wetland conservation
- To guarantee conservation benefits, Thyspunt and Bantamsklip's conservation status must be secured, i.e. declared as official nature reserves

FRESH WATER SUPPLY AND UTILISATION OF ABSTRACTED GROUNDWATER

- At all sites desalination provides a guaranteed source of fresh water supply for the lifespan of the proposed nuclear power station without jeopardising the availability of fresh water to other users
- Desalinisation plant is therefore the preferred alternative for the provision of fresh water at all sites, from the construction phase

INTAKE AND OUTLET OF WATER

- Installation of intake and outlet tunnels that obtain water from the ocean and feed cooling water into a storage area located adjacent to the cooling water pump houses is the only feasible alternative for all sites
- Outlet structures for cooling water and chemical effluent must be offshore
- All releases need to occur at the distances and depths prescribed by the relevant specialists
- Provided that the specific mitigation measures identified in the marine biology report are adhered to, offshore effluent release above the sea floor is the recommended alternative

MANAGEMENT OF SPOIL MATERIAL

- Fine spoil must be disposed of in the marine environment at all sites
- Spoil material that cannot be pumped to sea, must be disposed of on land and used for activities like levelling of the HV yard and to minimise the footprint on the terrestrial environment
- Visual impact of spoil dumps must be minimised
- Transport of spoil to the panhandle at Thyspunt via conveyor belt is not recommended due to the Oyster Bay mobile dune system

WASTE TYPES

- Low-level waste: ± 940 drums (50 – 100 kg per drum) per year
- Intermediate level waste: ± 160 x 6.3 ton concrete drums per year
- High level waste: ± 1 880 tons of spent fuel over life of power station (60 years)

WASTE DISPOSAL

- Only feasible alternative for the disposal of Low-Level and Intermediate-Level radioactive waste is Vaalputs nuclear waste disposal site in Northern Cape
- This is the only authorised facility for this form of waste in SA. Vaalputs has sufficient capacity for the waste that will be generated by Nuclear-1
- With regards to High-Level Waste, only alternative currently available in SA is long-term storage of the spent fuel in the power station – common practice internationally
- Vaalputs may be considered as a disposal site for High-Level Waste in future

WASTE DISPOSAL

- National Radioactive Waste Management Institute established by the National Radioactive Waste Management Institute Act No. 53 of 2008)
- Act came into effect in Dec 2009
- Subject to NNR Regulations
- Institute will transfer responsibility from NECSA

NO-DEVELOPMENT ALTERNATIVE

- Given the urgent power demand in South Africa, the No-Go alternative is not considered to be an alternative, as Eskom's mandate is to provide power for the country
- Eskom would likely apply to develop coal-fired power stations if the current application is declined as coal-fired generation is the only feasible base load alternative
- Life-cycle environmental impacts of coal-fired power generation are greater than nuclear-fuelled power generation

NO-DEVELOPMENT ALTERNATIVE

- If Eskom does not utilise Bantamsklip and Thyspunt for Nuclear-1, there are two options:
  - Keep as a future nuclear site; or
  - Sell to a willing buyer - this may result in an any alternative form of land use - may not involve management of the majority of the properties as a nature reserve

KEY MITIGATION MEASURES

- Independent specialists have proposed mitigation measures to reduce potential negative impacts
- Draft EMP has been compiled as part of draft EIR and if authorised, it will be a legally binding document
- Compliance to EMP must be independently audited throughout construction and operation
- Mitigation measures for botanical impacts, vertebrate and invertebrate fauna, wetlands and heritage resources are particularly important
- Mitigation of heritage impacts will require the work of a site-specific team dedicated to excavations over a period of several years prior to construction

KEY MITIGATION MEASURES

- Qualified and experienced botanical, wetland, vertebrate and invertebrate fauna, dune geomorphology and heritage specialists will need to find acceptable detailed final access route alignments
- Additional groundwater studies are necessary to improve accuracy to of the groundwater model to understand interaction between groundwater and coastal seep wetlands
- Cut-off wall to prevent drawdown of groundwater affecting wetlands during construction
- Acquisition of properties on eastern side of site outside of current Eskom property up to the western boundary of The Links for dedicated wetland conservation

WAY FORWARD

- Comment Period – 6 March to 10 May (66 days) – extension to 31 May (87 days)
- Websites: www.gibb.co.za and www.eskom.co.za/eia
- Public meetings and key stakeholder workshops will be held around the sites assessed from 23 March to 21 April. Minutes of meetings will be sent to attendees
- Comments received will be addressed in the Issues and Response Report in the Final EIR

WAY FORWARD

- Final EIR will be submitted to the DEA for consideration and decision-making
- Final decision regarding EIA will be communicated to registered I&APs
- Construction of Nuclear-1 is subject to other approvals e.g. the NNR site safety decision and transmission lines EIA authorisations

WAY FORWARD

Written comments can be submitted by:

- Post: Public Participation Office, Nuclear 1 EIA, PO Box 503, Mtunzini, 3867, SA
- Fax: +27 (0) 35 340 2232
- Email: nuclear1@acerafrica.co.za

MEETING CONDUCT

- Please wait for the discussion session to ask questions
- Introduce yourselves prior to asking a question and indicate your specific interest
- You are welcome to ask the question in your mother tongue. Presentations will be in English
- One person at a time
- Work through the facilitator
- Show respect
- Focus on the issue not the person
- Be constructive
- Agree to disagree

Please switch off all cell phones!

THANK YOU

ESKOM HOLDINGS LIMITED

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR A PROPOSED NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE DEA REF. No.:12/12/20/944

EIA Phase Public Meeting:
Review of Draft Environmental Impact Report

March / April 2010

Slide 1

PROPOSED AGENDA

1. Sign attendance register and discussion with team: 17:00 – 17:50
2. Welcome and introductions: 18:00 – 18:10
3. Presentation of EIA and EMP findings: 18:10 – 19:00
4. Discussion: 19:00 – 19:50
5. Way forward and close: 19:50 – 20:00

Slide 2

MEETING CONDUCT

- Please wait for the discussion session to ask questions
- Introduce yourselves prior to asking a question and indicate your specific interest
- You are welcome to ask the question in your mother tongue. Presentations will be in English
- One person at a time
- Work through the facilitator
- Show respect
- Focus on the issue not the person
- Be constructive
- Agree to disagree

Please switch off all cell phones!

Slide 3

MEETING OBJECTIVES

- The focus of the meeting is to provide an opportunity for Interested and Affected Parties (I&APs) to comment on the findings of the EIA and the Draft Environmental Impact Assessment Report (EIR)
- Provide an opportunity for I&APs to seek further clarity on the proposed project, the EIA phase and the Draft EIR
- Provide I&APs with an opportunity for interaction with the EIA team
- Recording of issues - the proceedings will be recorded and used to compile meeting minutes. Comments will be included in the Issues and Response Report (IRR) and changes will be made to the Final EIR, where necessary

Slide 4

KEY ISSUES

- Some people are opposed to and others are in favour of a nuclear power station at Bantamsklip, Thyspunt and Duynefontein
- Concerns about the potential impacts on human health and safety
- Local residents share a deep-felt connection to the area and have a strong “sense of place”
- A power station could potentially be unsightly
- Tourism is linked to conservation and preservation of the coastline

KEY ISSUES

- Marine life could potentially be adversely affected by altered sea temperature and turbulence caused by inflow and output of sea water to the plant
- Concern that commercial and recreational fishing may be negatively impacted
- Light pollution
- Concerns about potential drop in property values
- Concern about cost of constructing a power station
- Some people expressed a lack of trust in the EIA
- Storage of hazardous waste
- Renewable (‘green’) energy (e.g. wind, solar) vs. nuclear

PROJECT MOTIVATION

- Increasing demand for electricity (> 4% growth per annum)
- Projected requirement for more than 40 000 MW of new electricity generating capacity over the next 20 years
- In SA only coal and nuclear power are solutions for base load generation, while gas turbines, hydroelectric power stations and pumped storage schemes are used for peaking and emergency electricity generation

PROPOSED ACTIVITY

- Eskom proposes the construction, operation and decommissioning of a conventional nuclear power station and associated infrastructure either in the Eastern or Western Cape
- A nuclear power station of the Pressurised Water Reactor (PWR) type technology e.g. Koeberg Power Station
- The transmission power lines are subject to separate environmental authorisation processes

TRANSMISSION (TX) LINE EIAs

- Bantamsklip – Scoping phase has been extended to include Multi-stakeholder Workshops and additional public consultation. Revised Draft Scoping Report will be made available for public comment
- Thyspunt and Duynefontein – Scoping Report accepted by Authorities and EIA phase has commenced

PROJECT BACKGROUND

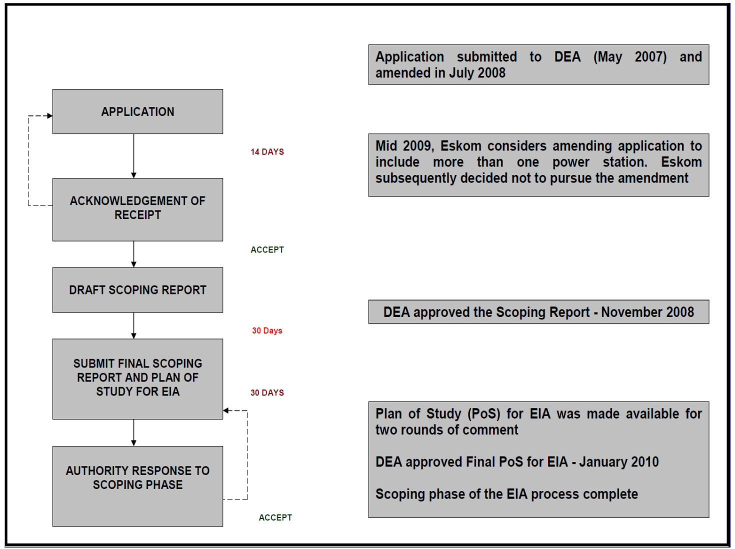
- The power station and directly associated infrastructure will require approximately 31 ha
- The footprint assessed makes provision for the potential future expansion of a power station to 10 000 MW or the maximum carrying capacity. Separate EIA required for any further expansion beyond 4 000 MW
- The proposed nuclear power station will include nuclear reactor, turbine complex, spent fuel, nuclear fuel storage facilities, waste handling facilities, intake and outfall pipelines, desalinisation plant and auxiliary service infrastructure (e.g. access roads, OCGT plant, HV yard, visitor centre)

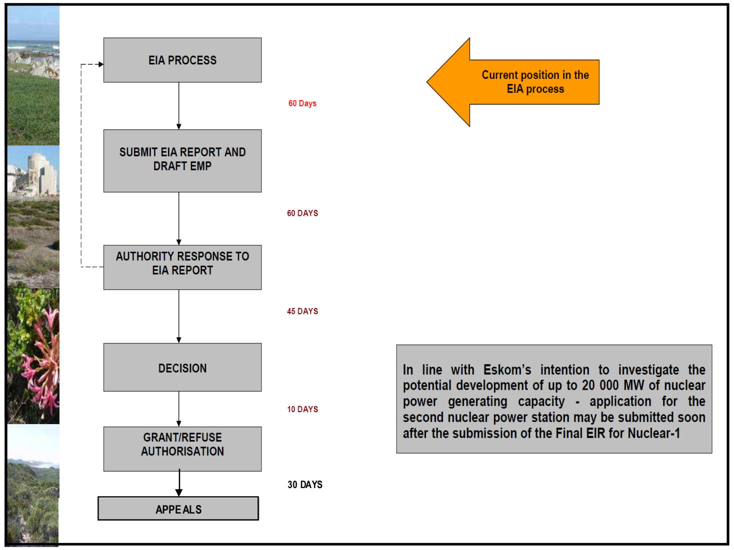
PROJECT BACKGROUND

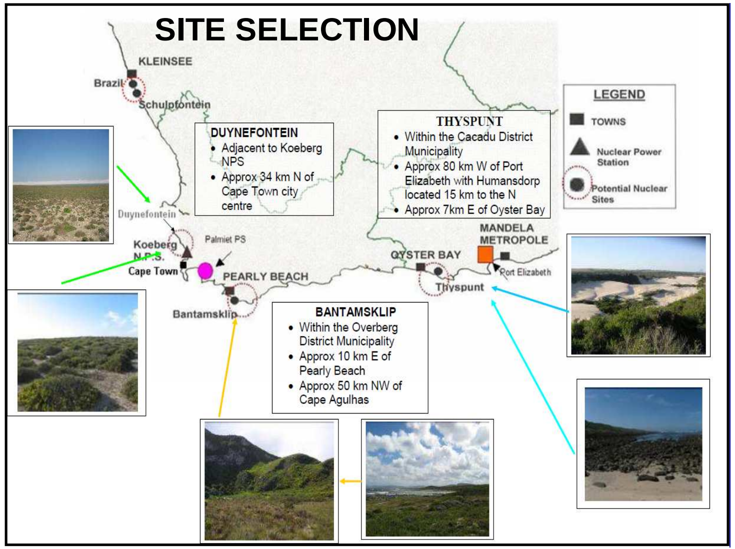
- Should the proposed project be authorised, it is anticipated that construction of the station could commence in 2011 with the first unit being commissioned in 2018 (optimistic)
- Construction period – 7 to 9 years
- Labour requirements:
  - Construction – 7 700 persons
  - Operation – 1 400 persons
- Construction and operational access routes to site - 22 m wide, tarred
- Normal (sedans), heavy (buses, trucks) and exceptionally heavy vehicles (42 m x 8.23 m max.)
- Peak construction vehicle trips: 828 morning and 945 evening

ENVELOPE OF CRITERIA

- Detailed description of proposed nuclear plant is not available, as preferred supplier has not been selected
- Approach used has been to specify enveloping environmental and other relevant requirements, to which the power station design and placement on site must comply
- Enveloping criteria represent the most conservative parameters associated with the various plant alternatives within the available Generation III PWR technology

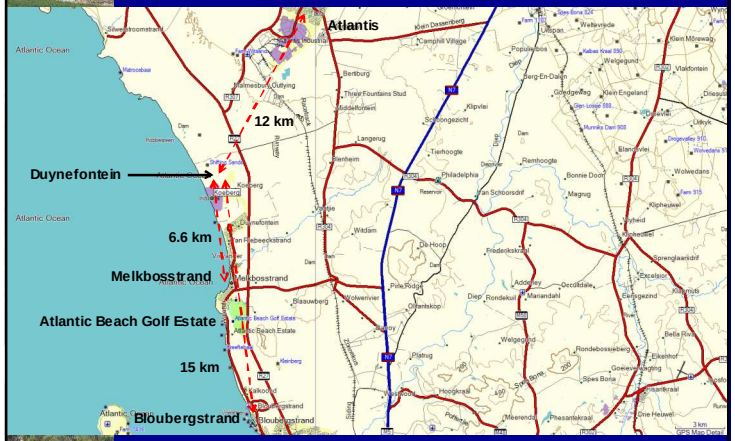

APPLICATION
14 DAYS
ACKNOWLEDGEMENT OF RECEIPT
ACCEPT
DRAFT SCOPING REPORT
30 Days
SUBMIT FINAL SCOPING REPORT AND PLAN OF STUDY FOR EIA
30 DAYS
AUTHORITY RESPONSE TO SCOPING PHASE
ACCEPT
Application submitted to DEA (May 2007) and amended in July 2008
Mid 2009, Eskom considers amending application to include more than one power station. Eskom subsequently decided not to pursue the amendment
DEA approved the Scoping Report - November 2008
Plan of Study (PoS) for EIA was made available for two rounds of comment
DEA approved Final PoS for EIA - January 2010
Scoping phase of the EIA process complete


EIA PROCESS
60 Days
SUBMIT EIA REPORT AND DRAFT EMP
60 DAYS
AUTHORITY RESPONSE TO EIA REPORT
45 DAYS
DECISION
10 DAYS
GRANT/REFUSE AUTHORISATION
30 DAYS
APPEALS
Current position in the EIA process
In line with Eskom's intention to investigate the potential development of up to 20 000 MW of nuclear power generating capacity - application for the second nuclear power station may be submitted soon after the submission of the Final EIR for Nuclear-1


SITE SELECTION
KLEINSEE
Brazil
Schulpfontein
DUYNEFONTEIN
Adjacent to Koeberg NPS
Approx 34 km N of Cape Town city centre
THYSPUNT
Within the Cacadu District Municipality
Approx 80 km W of Port Elizabeth with Humansdorp located 15 km to the N
Approx 7km E of Oyster Bay
LEGEND
TOWNS
Nuclear Power Station
Potential Nuclear Sites
Duynefontein
Koeberg N.P.S.
Cape Town
Palmiet PS
PEARLY BEACH
Bantamsklip
OYSTER BAY
MANDELA METROPOLE
Port Elizabeth
Thyspunt
BANTAMSKLIP
Within the Overberg District Municipality
Approx 10 km E of Pearly Beach
Approx 50 km NW of Cape Agulhas


LOCALITY
R 307
Duynefontein
Koeberg
Atlantic Ocean
Melkbosstrand
27km
Table Bay
Table View
Durbanville
Kraaifontein
Brackenfell
Montague Gardens
Milnerton
Goodwood
Bellville
Bellville South
Cape Town
Maitland
Pinelands
Camps Bay
Bishop Lavis
Blue Downs

LOCALITY



Slide 17

ASSESSMENT OF IMPACTS

- **The potential impacts assessed were based on:**
  - Issues identified by I&APs during the public participation process (PPP)
  - Issues identified by specialists through research
  - Experience of relevant specialists with projects of a similar nature or in a similar environment
  - Consultation with local specialists
  - Environmental resources and conditions identified during site surveys

Slide 18

METHODOLOGY

- Independent specialists assessed potential positive and negative impacts with and without mitigation
- According to the specialists:
  - all potential negative impacts can be mitigated
  - there are no fatal flaws at any of the alternative sites

Slide 19

SPECIALIST STUDIES

- **Physical Impacts**
  - Geology and geological risk
  - **Seismological risk**
  - Geo-hydrology
  - Geotechnical characteristics
- **Biophysical Impacts**
  - **Dune geomorphology**
  - **Flora**
  - **Fauna (Invertebrate and Vertebrate)**
  - Hydrology
  - **Freshwater ecosystems (wetlands)**
  - Oceanographic conditions
  - **Marine biology**
  - Air quality
  - Assessment of the 1:100 year floodline

Slide 20

SPECIALIST STUDIES

- **Socio-economic Impacts**
  - **Social impacts**
  - **Economic impacts**
  - Noise
  - Visual
  - **Heritage and cultural resources**
  - Waste
  - **Tourism impacts**
  - **Agriculture**
  - Transport
- As per the NNR / DEA co-operative agreement, a number of specialist studies related to human health risk and safety were commissioned and included in this EIR for information (4 studies)

SPECIALIST STUDY RESULTS

- **Seismological Risk**

Seismic studies indicate that the design basis for the respective sites in terms of peak ground acceleration values (PGA) are as follows:

- Duynefontein – PGA ~0.30 g
- Bantamsklip - PGA ~0.23 g
- Thyspunt - PGA ~0.16 g

SPECIALIST STUDY RESULTS

- **Impacts on Dune Geomorphology and associated geo-hydrology (landforms, sand and water movement)**
  - Groundwater does not 'daylight' at **Duynefontein** and **Bantamsklip** sites: access roads and transmission lines can be built across the mobile dunes
  - The interaction between dune systems and wetlands is complex at **Thyspunt**, since groundwater 'daylights' in many inter-dune areas
  - Haul roads and conveyor belts through Oyster Bay dunefield at **Thyspunt** between the nuclear power station and the HV yard, may cause more significant dune geomorphology impacts than at the other two sites

SPECIALIST STUDY RESULTS

- **Impacts on Flora (plants)**
  - **Bantamsklip** will experience the least potential negative impact on plant communities and species - the ecosystems on this site are fairly common along this section of coastline
  - **Thyspunt** has the greatest diversity of vegetation communities, including extensive and highly sensitive wetlands

SPECIALIST STUDY RESULTS

- **Impacts on Wetlands**
  - Development of a nuclear power station at **Duynefontein** is unlikely to result in any unmitigable, highly significant negative impacts on wetlands
  - Development of the proposed nuclear power station at **Bantamsklip** would not be associated with any unmitigable impacts to wetland systems
  - **Thyspunt** wetland systems are complex and potential negative impacts could occur without appropriate mitigation

SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Vertebrates (mammals and birds)**
  - Amount of land that is not of high faunal sensitivity at **Duynefontein** is more than sufficient for the nuclear power station
  - At **Bantamsklip** the nuclear power station could have significant negative potential impacts, without mitigation, because of the impacts on faunal habitats within the footprint
  - At **Thyspunt** a nuclear power station would have significant potential negative impacts, without mitigation, because of the potential impacts on faunal habitats within the footprint, the development of two access roads and proposed infrastructure across the dunefield

SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Invertebrates (insects)**
  - Potential impacts on terrestrial invertebrate communities are similar for all alternative sites, with site-specific differences
  - **Duynefontein:**
    - None of the butterflies are endangered or endemic
    - Low to very low overall insect sensitivity
    - New species of ant found is regarded as a generalist (likely to be found on other areas of the site)

SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Invertebrates**
  - **Thyspunt** has the highest butterfly diversity and conservation value of the alternative sites
  - From the viewpoint of potential positive impacts of the nuclear power station, **Duynefontein** already positively benefits under the management of Eskom, which means that it would experience the least improvement in conservation status
  - **Bantamsklip** and **Thyspunt** would benefit substantially from formal protection status, resulting in a net positive impact on insect communities

SPECIALIST STUDY RESULTS

- **Economic Impacts**
  - Positive macro-economic impacts will be greatest at **Bantamsklip** and **Duynefontein** as the sites are situated in a province with a larger, more diversified economy. Nuclear-1 would result in less dislocation of economic activities if located at Duynefontein than at either of the other two sites
  - Macroeconomic indicators favour **Duynefontein** and **Bantamsklip**
  - Cost-effectiveness analysis indicates that **Thyspunt** is slightly favoured relative to **Duynefontein** and more favoured relative to **Bantamsklip**.
  - The differences between the alternative sites are slight, and all the sites would have positive economic impacts both on the local area and the province in which they are situated
  - The economic impact assessment gives greater weight to the cost-effectiveness analysis, which favours **Thyspunt**

SPECIALIST STUDY RESULTS

- **Heritage Impacts (archaeological sites, fossils and built environment)**
  - All alternative sites contain significant heritage resources
  - **Duynefontein** is palaeontologically highly sensitive, but has less Stone Age heritage than **Bantamsklip** or **Thyspunt**
  - **Thyspunt** more sensitive than **Bantamsklip** in terms of its heritage richness – sites mostly along coast at all sites. 200 m setback line recommended to protect heritage sites

SPECIALIST STUDY RESULTS

Marine Biology Impacts

- Potential impacts similar at all sites and the impacts can be mitigated if the proposed designs are implemented as planned
- Potentially the most significant impacts are:
  - Disruption of the marine environment through the offshore disposal of sediment
  - Release of warmed cooling water
- Spoil disposal will have a potentially highly significant long-term negative impact on the marine environment within a localised area (4.5km^2 at Duynefontein) – acceptable impact according to marine specialist

SPECIALIST STUDY RESULTS

Marine Biology Impacts

- Impacts on Chokka fishing industry at Thyspunt
- Impact on Abalone at Bantamsklip
  - With respect to release of:
    - Spoil
    - Warm water

SPECIALIST STUDY RESULTS

Marine Biology Impacts

- Radionuclides such as Cesium (Cs-137) and Strontium (Sr-90) present in oceans alongside other elements since 1940s
- Background Cesium has been recorded at Koeberg before the power station was established - detected in mussels, sand mussels and fish below levels at which further investigation would be required
- Strontium not recorded in marine organisms at Koeberg
- Due to few organisms in which Cesium has been recorded, low concentrations and lack of Strontium, these nuclides have no detectable potential impact on marine organisms

SPECIALIST STUDY RESULTS

Social Impacts

- Potential negative impacts relate to accommodation for temporary workers during construction
- Potential positive impact is the provision of electricity and related benefits to the broader national and regional economies
- Perceived risks associated with nuclear incidents could potentially lead to a change in attitude and behaviour – reliable information is important

SPECIALIST STUDY RESULTS

Tourism Impacts

- Communities at **Thyspunt** and **Bantamsklip** have expressed opposition to the proposed power station
- **Thyspunt** community highlighted the premium nature of the top-end coastal vacation destination
- **Bantamsklip** community emphasised the new and fragile nature of the developing tourism product and the local dependence thereon
- Some **Duynefontein** tourism stakeholders have personal objections to another power station, however they recognise the potential for increased business and promote a generally positive outlook for tourism

SPECIALIST STUDY RESULTS

Tourism Impacts

- Assessment takes account decline in nature-based tourism as well as an increase in business-related tourism associated with the proposed nuclear power station
- **Duynefontein** – limited potential impact during construction; potential 1.4% improvement during operation
- **Bantamsklip** - potential 5% positive impact during construction; a potential 8.6% improvement during operation
- **Thyspunt** – potential 7.9% negative impact during construction; 0% impact during operation

SPECIALIST STUDY RESULTS

Agricultural Impacts

- Agriculture around **Thyspunt** is based mainly on milk production (2008: R150 m per annum)
- Fynbos farming prevails at the **Bantamsklip** although there is some dairy as well as grape, beef, sheep and game farming (2008: R29 m per annum)
- **Duynefontein** is based on mixed farming (2008: R75 m per annum)

SPECIALIST STUDY RESULTS

Agricultural Impacts

- **Duynefontein** – no impact on agriculture during construction and operation
- **Bantamsklip** – negative potential impact of dust (construction). Potential of less than 5% increase in local market due to water limitations that restrict expansion
- **Thyspunt** – negative potential impact of dust (construction). Potential for 15% positive impact on production due to increased local market

PROJECT ALTERNATIVES

- **Location of the power station (i.e. site selection)**
- Forms of power generation
- Nuclear plant types
- **Layout of the nuclear plant**
- **Fresh water supply and utilisation of abstracted groundwater**
- Management of brine
- Intake of sea water
- **Outlet of water**
- Management of spoil material
- Access to Thyspunt
- **Waste**
- **No-development (i.e. 'No-Go')**

SITE SELECTION

- Site selection was based on:
  - Results of independent specialist studies: the significance of potential impacts, with mitigation, at each of the alternative sites
  - An integration workshop, involving all specialists, where ranking of the sites and key decision factors were agreed on
  - Quantified ranking taking into account the key decision factors

SITE SELECTION

- Impacts of low significance at all alternative sites filtered out e.g. noise, visual impacts, hydrology
- Impacts of medium and high significance that have the same significance at all sites were filtered out e.g. social
- The key factors for decision-making:
  - Integration into the national grid
  - Seismic suitability
  - Impacts on dune geomorphology
  - Impacts on wetlands
  - Impacts on vertebrate fauna
  - Impacts on invertebrate fauna
  - Economic impacts

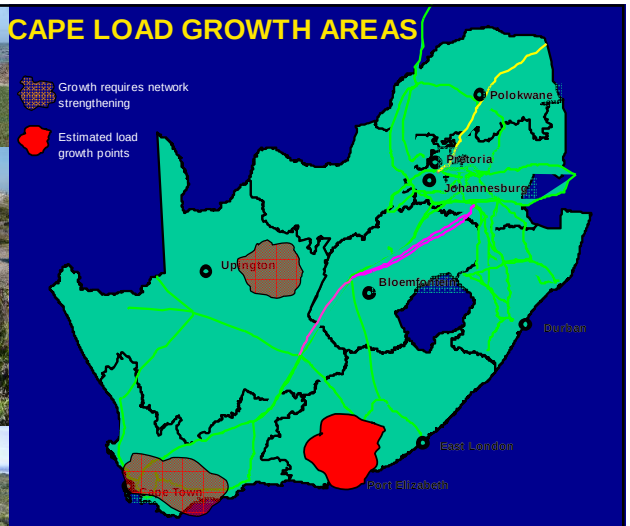
Slide 41

INTEGRATION INTO THE NATIONAL GRID

- Where do we require power stations for future load growth?
- Electricity needs to be transmitted from the high voltage yard at the power station through a network of transmission and distribution lines to end users
- To improve efficiency, Eskom tries connect new base load generation to the closest load, where possible

Slide 42

CAPE LOAD GROWTH AREAS



Slide 43

SITE SELECTION

A number of factors indicate that **Bantamsklip** cannot be regarded as a **preferred alternative** for Nuclear-1 when compared to the other two alternative sites:

- Substantially higher construction costs due to its remote location (requirements for upgrading of roads and bridges and lengthy transmission lines)
- Cumulative environmental impacts of the transmission corridors
- Potential impacts on invertebrate fauna

Bantamsklip is regarded as the least preferred site alternative for Nuclear-1

Slide 44

SITE SELECTION: RECOMMENDATIONS

A quantitative assessment of key criteria indicates that **Thyspunt** is preferred (with a score of 76 as opposed to **Duynefontein**'s score of 57) due to:

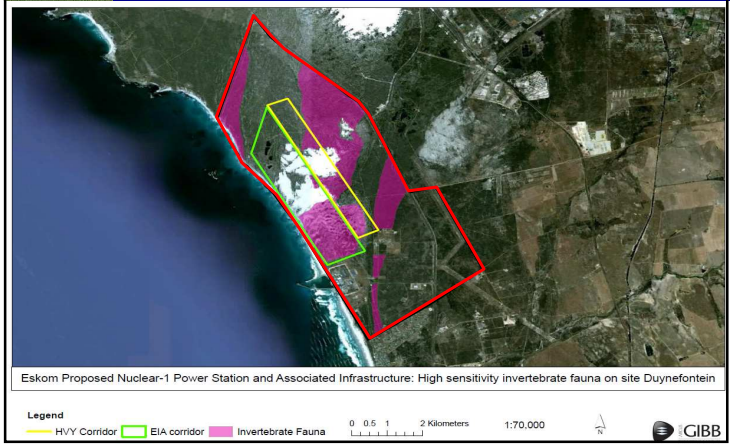
- Lower seismic risk
- Relative ease of integration into the transmission grid
- Site's locality relative to the Port Elizabeth load centre
- Potential benefits of the conserving the majority of the site (2 400ha), as well as additional land being managed for conservation purposes
- Conservation benefits would not be realised at Duynefontein

NUCLEAR PLANT LAYOUT

- Sensitivity maps of all specialist studies were integrated and composite maps were produced to indicate areas of high environmental suitability for each alternative site

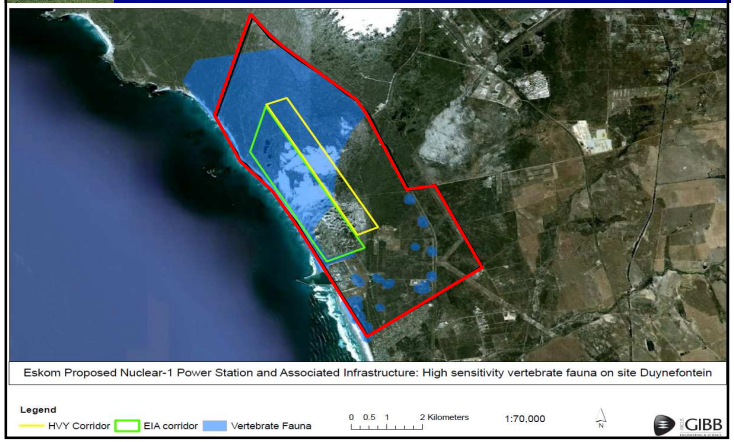
- Finalisation of the site layout plans will require detailed investigations, in conjunction with relevant qualified and experienced specialists

Site Sensitivity: Duynefontein – Invertebrate Fauna



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity invertebrate fauna on site Duynefontein

Site Sensitivity: Duynefontein – Vertebrate Fauna



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity vertebrate fauna on site Duynefontein

Site Sensitivity: Duynefontein – Flora

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity vegetation on site Duynefontein

Legend
HVY Corridor | EIA corridor | Vegetation

0 0.5 1 2 Kilometers

1:70,000

GIBB

Site Sensitivity: Duynefontein – Wetlands

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: Wetlands on site Duynefontein

Legend
HVY Corridor | EIA corridor | Wetlands (not significant)

0 0.5 1 2 Kilometers

1:70,000

GIBB

Site Sensitivity: Duynefontein – Heritage

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity heritage features on site Duynefontein

Legend
HVY Corridor | EIA corridor | Heritage

0 0.5 1 2 Kilometers

1:70,000

GIBB

Site Sensitivity: Duynefontein – Combined Sensitivity

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity features on Duynefontein site

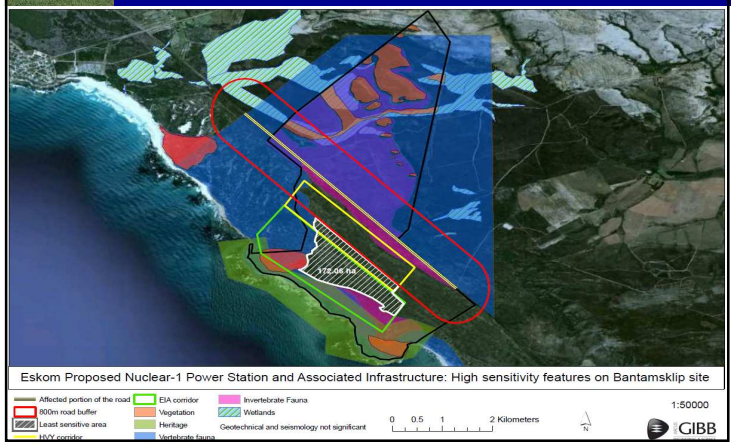
Legend
Affected portion of road | 800m road buffer | Least sensitive area
EIA corridor | Heritage | Vegetation
Invertebrate fauna | Wetlands (not significant)
Geotechnical and seismology not significant

0 0.5 1 2 Kilometers

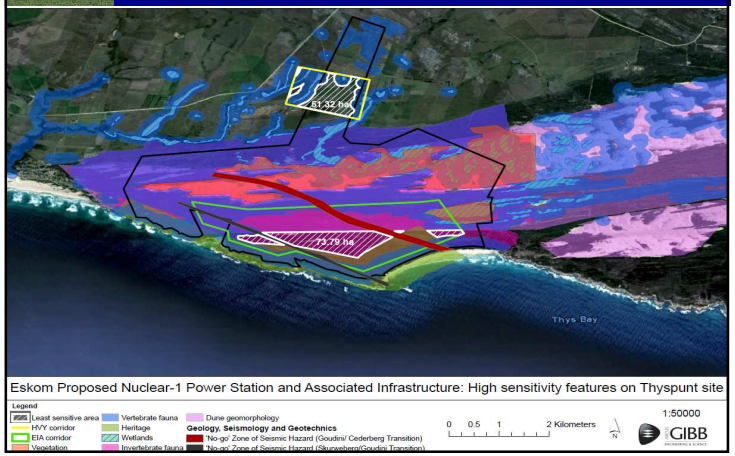
1:65000

GIBB

Site Sensitivity: Bantamsklip – Combined Sensitivity



Site Sensitivity: Thyspunt – Combined Sensitivity



CONSERVATION BENEFITS

- In spite of potentially significant negative impacts, all biophysical specialists in agreement:
  - no fatal flaws at any of the sites
  - positive impacts for conservation of the area outside the footprint of the power station at **Thyspunt** and **Bantamsklip** are significant
- Acquisition of properties for conservation outside the current **Thyspunt** property for wetland conservation
- To guarantee conservation benefits, Thyspunt and Bantamsklip's conservation status must be secured, i.e. declared as official nature reserves

FRESH WATER SUPPLY AND UTILISATION OF ABSTRACTED GROUNDWATER

- At all sites desalination provides a guaranteed source of fresh water supply for the lifespan of the proposed nuclear power station without jeopardising the availability of fresh water to other users
- Desalinisation plant is therefore the preferred alternative for the provision of fresh water at all sites, from the construction phase

INTAKE AND OUTLET OF WATER

- Installation of intake and outlet tunnels that obtain water from the ocean and feed cooling water into a storage area located adjacent to the cooling water pump houses is the only feasible alternative for all sites
- Outlet structures for cooling water and chemical effluent must be offshore
- All releases need to occur at the distances and depths prescribed by the relevant specialists
- Provided that the specific mitigation measures identified in the marine biology report are adhered to, offshore effluent release above the sea floor is the recommended alternative

MANAGEMENT OF SPOIL MATERIAL

- Fine spoil must be disposed of in the marine environment at all sites
- Spoil material that cannot be pumped to sea, must be disposed of on land and used for activities like levelling of the HV yard and to minimise the footprint on the terrestrial environment
- Visual impact of spoil dumps must be minimised
- Transport of spoil to the panhandle at Thyspunt via conveyor belt is not recommended due to the Oyster Bay mobile dune system

WASTE TYPES

- Low-level waste: ± 940 drums (50 – 100 kg per drum) per year
- Intermediate level waste: ± 160 x 6.3 ton concrete drums per year
- High level waste: ± 1 880 tons of spent fuel over life of power station (60 years)

WASTE DISPOSAL

- Only feasible alternative for the disposal of Low-Level and Intermediate-Level radioactive waste is Vaalputs nuclear waste disposal site in Northern Cape
- This is the only authorised facility for this form of waste in SA. Vaalputs has sufficient capacity for the waste that will be generated by Nuclear-1
- With regards to High-Level Waste, only alternative currently available in SA is long-term storage of the spent fuel in the power station – common practice internationally
- Vaalputs may be considered as a disposal site for High-Level Waste in future

WASTE DISPOSAL

- National Radioactive Waste Management Institute established by the National Radioactive Waste Management Institute Act No. 53 of 2008)
- Act came into effect in Dec 2009
- Subject to NNR Regulations
- Institute will transfer responsibility from NECSA

NO-DEVELOPMENT ALTERNATIVE

- Given the urgent power demand in South Africa, the No-Go alternative is not considered to be an alternative, as Eskom's mandate is to provide power for the country
- Eskom would likely apply to develop coal-fired power stations if the current application is declined as coal-fired generation is the only feasible base load alternative
- Life-cycle environmental impacts of coal-fired power generation are greater than nuclear-fuelled power generation

NO-DEVELOPMENT ALTERNATIVE

- If Eskom does not utilise Bantamsklip and Thyspunt for Nuclear-1, there are two options:
  - Keep as a future nuclear site; or
  - Sell to a willing buyer - this may result in an any alternative form of land use - may not involve management of the majority of the properties as a nature reserve

KEY MITIGATION MEASURES

- Independent specialists have proposed mitigation measures to reduce potential negative impacts
- Draft EMP has been compiled as part of draft EIR and if authorised, it will be a legally binding document
- Compliance to EMP must be independently audited throughout construction and operation
- Mitigation measures for botanical impacts, vertebrate and invertebrate fauna, wetlands and heritage resources are particularly important
- Mitigation of heritage impacts will require the work of a site-specific team dedicated to excavations over a period of several years prior to construction

KEY MITIGATION MEASURES

- Qualified and experienced botanical, wetland, vertebrate and invertebrate fauna, dune geomorphology and heritage specialists will need to find acceptable detailed final access route alignments
- Additional groundwater studies are necessary to improve accuracy to of the groundwater model to understand interaction between groundwater and coastal seep wetlands
- Cut-off wall to prevent drawdown of groundwater affecting wetlands during construction
- Acquisition of properties on eastern side of site outside of current Eskom property up to the western boundary of The Links for dedicated wetland conservation

WAY FORWARD

- Comment Period – 6 March to 10 May (66 days) – extension to 31 May (87 days)
- Websites: www.gibb.co.za and www.eskom.co.za/eia
- Public meetings and key stakeholder workshops will be held around the sites assessed from 23 March to 21 April. Minutes of meetings will be sent to attendees
- Comments received will be addressed in the Issues and Response Report in the Final EIR

WAY FORWARD

- Final EIR will be submitted to the DEA for consideration and decision-making
- Final decision regarding EIA will be communicated to registered I&APs
- Construction of Nuclear-1 is subject to other approvals e.g. the NNR site safety decision and transmission lines EIA authorisations

WAY FORWARD

Written comments can be submitted by:

- Post: Public Participation Office, Nuclear 1 EIA, PO Box 503, Mtunzini, 3867, SA
- Fax: +27 (0) 35 340 2232
- Email: nuclear1@acerafrica.co.za

MEETING CONDUCT

- Please wait for the discussion session to ask questions
- Introduce yourselves prior to asking a question and indicate your specific interest
- You are welcome to ask the question in your mother tongue. Presentations will be in English
- One person at a time
- Work through the facilitator
- Show respect
- Focus on the issue not the person
- Be constructive
- Agree to disagree

Please switch off all cell phones!

THANK YOU

ENVIRONMENTAL IMPACT ASSESSMENT (EIA)
EIA: 12/12/20/944

FOR THE PROPOSED ESKOM NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE

DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

PUBLIC MEETINGS, WEEK 1 – SOUTHERN CAPE

23 – 25 MARCH 2010

PROVINCE	AREA	DAY AND DATE	VENUE	TIME
Western Cape	Hermanus	23 March 2010	Overstrand Municipal Auditorium	18H00 – 20H00
Western Cape	Pearly Beach	24 March 2010	Pearly Beach Club	18H00 – 20H00
Western Cape	Bredasdorp	25 March 2010	Overberg Agri Hall	18H00 – 20H00

TABLE OF CONTENTS

PREFACE

The presentations at the Public Meetings were uniform in nature and, therefore, one set of proceedings has been prepared. Slides of the presentation are provided in Appendix 2. Interested and Affected Parties (I&APs) raised a variety of issues at the three public meetings and for ease of reference, these have been captured in Appendix 1, providing I&APs from the three public meetings an opportunity to cross reference issues raised at the individual meetings.

Should participants who attended the meetings require any changes to these proceedings, please notify the Public Participation Office in writing within 14 days of receipt.

“Unidentified I&APs” refer largely to persons who attended meetings and verbally raised issues without providing their names. This in no way diminishes the value of the issue raised. Should you recognise your issue and would like to have your name recorded next to it, please advise the Public Participation Office.

In order to provide a structure and to enable the reader to follow the proceedings with ease, Sections 1 to 6 have not been captured verbatim. In Appendix 1 “Record of all Issues Raised and Discussed” the key comments and questions have been captured more or less verbatim with minor grammatical editing (where relevant).

1. ATTENDANCE

1.1. Attendance – Interested and Affected Parties

- As per attendance register.

1.2 Attendance – Eskom Holdings Limited

Name	Position/Role
Mr Tony Stott	Senior Manager: Stakeholder Management Generation Business
Ms Deidre Herbst	Senior Manager – Environment Generation Division
Mr Gert Greeff	Manager: Nuclear Sites
Ms Carin de Villiers	Stakeholder Management & Communication Manager (Nuclear Division)
Mr Mervin Theron	Manager – Regulatory Affairs
Mr Mandla Mbusi	Senior Advisor Stakeholder Management

1.3 Attendance – Environmental Consulting Team (EIA Team)

Name	Organisation	Role in the project
Ms Jaana-Maria Ball	Arcus GIBB (Pty) Ltd	Nuclear-1 EIA: Project Manager
Mr Reuben Heydenrych	Arcus GIBB (Pty) Ltd	Senior Environmental Scientist
Ms Bongi Shinga	ACER (Africa)	Public Participation Consultant
Mrs Antoinette Pieterson	Ferret Mining and Environmental Services	Independent Facilitator

2. WELCOME AND INTRODUCTIONS

The Facilitator, Mrs Antoinette Pieterson, welcomed everyone to the meeting.

The Facilitator explained that the meeting was being recorded. She advised the participants that the record is being taken to ensure an accurate reflection of the proceedings. She informed all participants that it is imperative that when they stand up and pose a question or make a comment, to please state their name so that the minute-taker can preface the question or comment that is made in the minutes and attribute it to the correct person.

At all public meetings, the Facilitator confirmed with participants that they were in agreement with the use of the audio recording device, which was used to record the proceedings, thereby ensuring the accuracy of the record of meetings.

At the Hermanus Public Meeting, Mr Mike Kantey checked with the EIA Team that I&APs can verify the accuracy of the transcription record. **Response:** EIA Team confirmed that the transcription record could be made available on request.

3. FACILITATOR'S INTRODUCTORY REMARKS

3.1 Meeting Timeframes

The Facilitator explained that the meeting was scheduled to end at 20h00. Depending on the response of the participants the meeting could extend beyond the scheduled time, to a time, which would be suitable to all participants.

Please note the following:

- **Hermanus Public Meeting** – the timeframes that were allocated as per the Public Meeting Agenda were not adhered to (due to meeting participants arriving late necessitating a late start to the meeting, the length of the presentations and the need to answer questions raised by the public during the presentations) and the public expressed concerns around time management. The EIA Team extended their apologies regarding this issue and thanked participants for their tolerance to the end of the meeting.
- **Pearly Beach Public Meeting** – revised timeframes were adhered to. Although the discussions continued beyond the original allocated time, the extension was agreed between the participants and the EIA team.
- **Bredasdorp Public Meeting** – revised timeframes were adhered to. The participants indicated that they would like discussions to continue until they were all satisfied with the responses or had the opportunity to engage with the EIA Team.

3.2 Conduct at Meeting

The Facilitator explained that participants are welcome to use the language of their choice - the EIA Team could communicate in English, Afrikaans and Xhosa.

The Facilitator read through the points presented on the slide, which provided guidelines with respect to the conduct of all participants and for achieving a constructive debate and discussion. These points are contained in the main presentation, which is provided in Appendix 2.

She requested all participants to assist the team by having a constructive debate at the meetings.

3.3 Objectives of the Public Meetings

The twenty four (24) independent specialist investigations, which have been undertaken as part of the EIA, for the proposed Nuclear Power Station and Associated Infrastructure, have been completed. The outcomes of the specialist investigations and recommendations have been assembled and integrated into the Draft Environmental Impact Report (EIR).

The purpose of the Public Meetings is three-fold, *viz*.:

- To present and discuss findings of the various specialist studies undertaken during the Environmental Impact Assessment (EIA) Phase.
- To present the conclusions and recommendations of the Draft Environmental Impact Report (EIR).
- Provide an opportunity to Interested and Affected Parties (I&APs) to pose questions and comment on the specialist study findings and the outcomes of the EIA.

4. PRESENTATION: FINDINGS ON THE DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

The Facilitator presented a summary list of issues, which were raised by I&APs during the Scoping Phase. The summary list, which was not intended to be all inclusive and comprehensive, is contained in the presentation provided as Appendix 2.

The Facilitator emphasised that it is important for I&APs to verify that their issues, which were raised during Scoping Phase, have been taken into consideration during the EIA Phase.

Ms Jaana-Maria Ball and Mr Reuben Heydenrych represented the Independent Environmental Assessment Practitioners (EAP), Arcus GIBB.

By way of introduction, Ms Ball, EIA Project Manager, thanked all present for their time and indicated that Arcus GIBB is pleased to be at the Draft Environmental Impact Report (EIR) stage of the EIA.

Ms Ball and Mr Heydenrych then presented the findings of the specialist investigations and the outcomes of the Environmental Impact Assessment (EIA) Phase (refer to presentation slides provided in Appendix 2).

The issues raised and discussed following Arcus GIBB's presentation are captured in the table presented in Appendix 1.

5. ISSUES AND COMMENTS RAISED AND DISCUSSED

5.1 Issues and Comments raised

The table contained in Appendix 1: "Record of Issues Raised and Discussed" details the issues, comments and concerns, which were raised and discussed at the meeting.

Please note:

- Should you wish to make any corrections, please advise ACER within two weeks of receiving these minutes.

6. WAY FORWARD AND CLOSING REMARKS

6.1 Minutes of Meetings

Ms Ball indicated that GIBB would endeavour to distribute draft minutes of the meetings within 21 days from the dates of the respective meetings.

I&APs will have 14 days after distribution to verify provide their comments on the draft minutes to ACER.

Post-meeting notes are provided in bold in these minutes.

6.2 Timeframes

In terms of the timeframes, I&APs were reminded that the public review period of the Draft EIA Report ends on 10 May 2010. Arcus GIBB has allocated a 66 day comment period, recognising that there are long weekends, school holidays and the Easter Weekend within the period 06 March – 10 May 2010. (**Post-meeting note**: Following a request at subsequent public meetings, the end date for the public review period was extended to 31 May 2010, thus providing an 87 day comment period).

Ms Ball encouraged all present to submit their comments to ACER (Africa) using one of the following methods:

- By mail: Public Participation Office, Nuclear-1 EIA, PO Box 503, Mtunzini, 3867
- By fax: 035 340 2232
- By email: nuclear1@acerafrica.co.za

Comments received on the Draft EIR are recorded and addressed on a weekly basis in the form of an Issues and Response Report (IRR). Comments received will be used to produce the Final EIR, which will then be submitted to the Department of Environmental Affairs (DEA) (the decision-making authority for the EIA) for their consideration.

The timeframe for submission of the Final EIR will depend on how long it takes to finalise the report as well as on the type of comments that are received from I&APs during the review period.

A letter will be sent to all registered I&APs informing them of the Authorities' decision.

6.3 Facilitators Concluding Remarks

The Facilitator thanked all present for their input and participation in the process and closed the various meetings.

Interactions between I&APs and the Project Team continued after the various meetings. The discussions that took place after the formal public meetings were not recorded.

APPENDIX 1: RECORD OF ISSUES RAISED AND DISCUSSED

HERMANUS PUBLIC MEETING (23 MARCH 2010)			
No	**Name**	**Comment**	**Response**
1	Mr Mike Kantey CANE	Point of order: In the introduction by the Facilitator, on issues raised by the general public, e.g. human health, waste management, trustworthiness of the process, etc, these are not included in the key factors for decision-making. The agenda that is presented to us is skewed. This is a process point because the list of issues presented does not include what the public has raised during Scoping as reflected by the Facilitator. The only concern that has been included in Arcus GIBB's slide is the conservation issue Mr Kantey wished to know how the other concerns were going to be addressed in this meeting.	Ms Ball: Chapter 9 of the Draft Environmental Impact Report (EIR) deals with the assessment of issues/ potential impacts that came from all specialist studies. It was noted that feedback on all specialist studies could be given, i.e. not limited to what is presented in slide 22. It was agreed that Mr Heydenrych, Arcus GIBB will continue with the presentation and then Mr Kantey's concerns be raised after the presentation.
2	Mr John Williams Save Bantamsklip Association	Mr Williams asked if socio-economic issues are considered as a conservation issue? He also wanted to know if the conservation issues are indeed addressed as per the slide 22.	The Facilitator suggested that feedback be given on all specialist studies.
3	I&AP	Bantamsklip site was conserved before Eskom bought the property.	Mr Gert Greeff indicated that the statement is incorrect.
4	Mr John Williams Save Bantamsklip Association	Mr Williams was of the opinion that when you talk about economic impacts *vs* economic benefit – there seems to be a bit of ambiguity. He asked what is being referred to?	It is referring to positive economic impact.

HERMANUS PUBLIC MEETING (23 MARCH 2010)			
No	**Name**	**Comment**	**Response**
5	Mr John Williams Save Bantamsklip Association	Mr Williams suggested that the Heritage Impact should read as negative Heritage Impact.	Mr Heydenrych confirmed that it is potential negative heritage impact.
6	Mr Mike Kantey CANE	Point of clarity: the meeting has been told that Arcus GIBB has ruled out the discussion of transmission lines at the meeting. He was confused by the fact that this discussion has been taken out of the debate of tonight's meeting but then it is back again in the presentation?	It is included to provide information as to which sites will be preferred based on the transmission line integration. This is an integration issue, i.e. how easy it is to integrate this site with the rest of the grid in the system. The proposed transmission lines, their routes and the potential impacts of the individual transmission lines are undertaken as a separate EIA process.
7	Mr John Williams Save Bantamsklip Association	Mr Williams noted that in terms of project alternatives – that marine issue was not included in the previous slides on impacts. The Marine issues are now included under alternatives. Terrestrial aspects are included but not marine issues, which would seem to indicate that the site was not necessarily by the sea.	Mr Heydenrych in his introduction had indicated that he would focus on key decision factors. There was a Marine Specialist study, indeed there were 24 different specialist studies, and each of those specialist studies assessed different alternatives. What is not reflected in this presentation is all the specialist studies in the Draft EIR itself.
8	Mr Mike Kantey CANE	Mr Kantey raised concern that Mr Heydenrych was adding additional information in his words that were not included on the slides. He contested the point of transmission lines going up and down the country-side, and in which direction the electricity is going. Mr Kantey indicated that he is flagging this point with particular reference to the intensive energy end user groups in the northern part of the country, such as Bayside Aluminium, which is a long way away from the coastline route.	Yes, everything is being recorded. The slides formed the basis of the presentation and have been posted to the EIA websites (www.eskom.co.za and www.gibb.co.za) and everything that is said verbally in the meeting was recorded and reflected in the minutes. Load growth is projected for the Eastern and Western Cape regions requiring additional generation capacity along the coast in this part of South Africa to supply the demand and to stabilise the national transmission network. The initial excess electricity that would be generated would be transferred by the transmission lines to other parts of the country.

HERMANUS PUBLIC MEETING (23 MARCH 2010)			
No	**Name**	**Comment**	**Response**
9	Mr John Williams Save Bantamsklip Association	Mr Williams asked for a description of brine and explanation of where it comes from?	Mr Heydenrych responded that fresh water would be produced through a desalination plant from seawater. The salt or the very high saline solution that is left over is called brine.
10	Mr Mike Kantey CANE	Mr Kantey requested clarity about the wording on the slide that indicated that Vaalputs is a high level Nuclear Waste deposit facility. He asked if this was policy?	Mr Heydenrych explained that Vaalputs is being considered, it is not current practice. **The slide was subsequently revised to increase its clarity. What was meant by the presenter was that when the National Radioactive Waste Disposal Institute investigates potential site for a final repository for high-level radioactive waste Vaalputs is likely to be one of the sites considered in the investigation. Vaalputs is currently only used for the disposal of low and intermediate level radioactive waste.**
11	Mrs Linda McNeal Concerned citizen	Mrs McNeal asked for an explanation as to why solar, wind, renewables, etc, do not have a base load generation capacity?	To be explained during the discussion time.
12	Mr John Williams Save Bantamsklip Association	Mr Williams asked for clarification about decision-making. He enquired if the weights reflected on the slide were negative or positive? He asked if it is an impact issue or simply a focus of importance of issue. He then enquired if the category has to be considered of high importance in order to receive more attention? He also asked what does higher impact mean? Does it mean higher negative impact? Does it mean it is more important for decision-making?	Mr Heydenrych: The ranking has been done with the 24 independent specialists. A process was followed to determine which of those aspects or specialist disciplines are most important in terms of making decisions on which site is selected. The importance of each of these impact categories influence decision-making. We are not looking at whether it is an impact of low significance or high significance. Ms Ball: Reading 1st paragraph “The potential impact of high and medium significance after mitigation. These impacts should have the greatest influence on decision making”.

HERMANUS PUBLIC MEETING (23 MARCH 2010)			
No	**Name**	**Comment**	**Response**
		Is it the highest impact (negative impact) that receives more attention?	2nd point: Where the impacts have the same significance on all sites, they have been filtered out as they do not provide a basis for choice for the preferred site. Ms Ball went on to remind Mr Kantey of the statement mentioned earlier that all of the specialists said, with mitigation (which is very important) the potential impacts within their discipline will be brought down to a low-significance level. So there are no fatal flaws in terms of any of the specialist studies and this applies to all the sites.
13	Mr John Williams Save Bantamsklip Association	Mr Williams added congratulations on the statement arriving at this point "Bantamsklip regarded as least preferred site for Nuclear-1" and hence we will continue listening and participating.	Noted.
14	Mr Mike Kantey CANE	Point of order: Mr Kantey asked that a record be made regarding the stopping of this presentation at 20h05 as, in fact, a breach of public confidence. The Agenda records that the meeting will end at 20H00. It is an intolerable form of public participation and that the whole time has been filled by the proponent's information and nothing from the public. The Agenda states that from 19h00 to 19h50 there will be a discussion of issues. At this point in time which is 20h00, the meeting will take us to 21h00. Noting the time at which the meeting started, some people may have had their supper. He would like to submit that this in fact fringes on the capacity and the ability of people to focus for such a long period of time, to be able to engage substantively on the issue. Having prepared for this meeting from the 6th of March 2010. To come with significant information that needs to be shared, and as a matter of public record and having	The Facilitator apologised on behalf of the EIA Team and confirmed that the EIA Team will stick to the Agenda for all future meetings.

HERMANUS PUBLIC MEETING (23 MARCH 2010)			
No	**Name**	**Comment**	**Response**
		actually waited for 2 hours to get to this point. The quality of public participation, again for the record, cannot be guaranteed in this instance. And therefore this EIA is not following due process. It is a fact that the Pebble Bed process has been thrown out because of not following due process. He said that the judges were not sympathetic with the PBMR EIA process. They were forced to re-do the EIA. He asked that the same mistake not be made again at Pearly Beach, at Bredasdorp, and at Thyspunt, etc. He suggested that the EIA team sticks to the agenda.	**For the record: The Cape High Court judgement relating to the Record of Decision for the PBMR EIA in 2002 was due to the Department of Environmental Affairs and Tourism not agreeing to meet with Earthlife Africa subsequent to the submission of the final EIR. The Court found that the EIA process had been comprehensively undertaken. The Court required the Director-General of the then Department of Environmental Affairs and Tourism to accept submissions from the public and then to re-apply his mind regarding the Record of Decision. Eskom was not forced to do the EIA again. The EIA was initiated again due to design changes and not due to a decision by the Court.**
15	Mr Rob Fryer Overstrand Conservation Foundation	Mr Fryer asked for information about the way that the EIA's are currently being combined, because according to his understanding there were separate EIA's for the 3 sites that are under consideration. Mr Fryer added that there is an intention under the new regulations to combine all these EIAs to be one EIA. However, this has not been done because the EIA regulations have not allowed it – he enquired if this was correct? There are separate applications being made for each of the sites, and yet there is one EIA Report being produced, which now compares the EIA of the 3 EIA sites. He asked how we arrived at	Ms Ball: There are a number of alternatives, as indicated on the slide, which were assessed in this process. Originally, Eskom had an application for one nuclear power station, up to 4 000 megawatts (MW), this included a number of alternative sites. **Eskom did consider a combined application which could have resulted in an authorisation for more than one site however a decision was taken to remain with the original application.**

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		this point when we were expecting to have an EIA Report for all 3 proposals. Each of these proposals should have been submitted separately to the Department of Environmental Affairs (DEA), and were going to be assessed independently by the DEA as independent proposals because they are independent? He further enquired how we are suddenly faced with a combined conclusion when there should be 3 separate conclusions (each one submitted independently for DEA's consideration and decision)?	The application is for one Nuclear Power Station for 4 000 MW. If Eskom wants to build a second nuclear power station, they will have to start a whole new EIA process.
		Mr Fryer was expecting three separate reports and wanted to know where the Draft EIA Report for Bantamsklip was. When is a decision going to be made on the EIA for Bantamsklip?	Ms Ball: Bantamsklip is one of the alternative sites assessed in this EIA. Each specialist study assessed the potential impacts at Bantamsklip The Bantamsklip site is not the preferred site for Nuclear-1. The EIA Report recommends Thyspunt as the preferred site. The DEA can either agree or not agree with a recommendation.
16	Mr John Williams Save Bantamsklip Association	Mr Williams followed on from what Mr Fryer has said. The process itself has not been concluded correctly. Based on the decision, made as a recommendation, the opportunity is lost to record the questions which we have pertaining to Bantamsklip because it has been excluded. This puts everyone in a very difficult position, because do we simply walk out now and trust that you will see through the process as you have recommended?	Ms Ball: You are quite correct; the DEA may say we do not agree with the consultant's recommendation. So, my advice to you all as community members, through all the 3 sites, is to please keep on recording your issues. Please scrutinise those specialist reports, please give us your comments. If you agree or disagree with the specialist report. All comments are recorded in the final report and you have it on record and in the minutes.

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			Ms Herbst: It is important to note that in all the EIAs that we have carried out, the DEA has never gone against the recommendations of the EIA consultant in terms of the recommended site.
17	Mr John Williams Save Bantamsklip Association	Mr Williams noted that in the context of submissions that have been made regarding the specialist studies, he would like to record that Bantamsklip is a protected area and will remain a protected area, and we believe that Bantamsklip is a potential UNESCO World Heritage Site. We believe that Bantamsklip should, in fact, be sold by Eskom to someone like the SANParks. There are a number of sub-issues in relation to this: ❑ Marine consideration seems to have been left out of the issues in terms of the weighting of impacts in your report. The people wish to record that they take exception to this. ❑ The marine component of Bantamsklip is possibly more important than the terrestrial component of the area. ❑ Stakeholders wish to emphasise their reasoning for this protected status.	Points noted.
18	Mrs Linda McNeal Concerned Citizen	Mrs McNeal questioned why wind, solar, etc, cannot be as effective as coal and nuclear?	Mr Stott: The base load refers to the capacity to generate electricity continuously 24 hours a day. At the moment in South Africa, we estimate this winter, the peak demand to be about 39 500 MW, and that compared to the 43 000 MW per day, which is generated. So there is not much reserve margin.

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			However, at any other time of the day, the minimum amount of electricity needed is about 25 000 MW. Power stations have to continuously and collectively generate this amount of electricity, during every second of the day. Wind energy can generate electricity when the wind is blowing and in South Africa, wind efficiency is estimated at about 20% of the time. Solar only generates electricity when the sun is shining. Base load requires that you generate continuously day and night. A base load station needs to produce electricity for at least 70% of the time Eskom is however working at the storage capacity for solar energy that can make it into a pseudo base load - which is not commercially viable at the moment, anywhere in the world. But we hope that in the solar-thermal plant, which is proposed to be built near Upington that we will be able to include storage facilities in the form of molten salt. At the moment, it is only coal-fired power stations and nuclear that can provide the base load.
19	Mr Mike Kantey CANE	Mr Kantey said it is important to understand and unpack some of the fallacies of the base load assumption. Base load is an artificial construct refers. It takes something as simple as Koeberg, which has been off for the past two to three weeks, here and there, and has been off sometimes unexpectedly such as when the bolt was found, etc. to show clearly that it is say that a nuclear power station has to generate power every minute of the day:	Mr Stott replied that part of what Mr Kantey is saying is correct and part is incorrect. Certainly, if say a 1 000 MW of base load is replaced with wind, you would probably have to have 3 000 MW of wind energy. In terms of parts of the country connecting to the national grid, you would probably get the equivalent of that, but obviously you would need 3 000 MW instead of 1 000 MW. There is no commercial solar storage scheme yet in operation. There are solar thermal plants in America, California and Spain, that have been operating quite

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		❑ So, firstly, there is a sense of interrupted power supply in a nuclear power station. ❑ Secondly, the angle of wind does not necessarily blow in the same direction at the same time but it does blow somewhere continuously. So, in some countries like in Ireland, they have potentially aggregated 10,000 MW of supply continuously from a wind farm. Wind farms, as part of the contribution to the grid, are viable night and day and research will prove this to be true. ❑ Thirdly, Solar power, for example in California, Spain, etc, has been running successfully in other areas. These concentrated solar power plants have a molten salts storage system, which does in fact supply power and have been running successfully in some countries including southern Namibia and southwest Botswana. He went on to say that this base load argument is not factual. This definition that renewables cannot generate base load must be questioned. The fact that NERSA has capped renewable energy at 835 MW makes a mockery of the investment. No one will invest in renewable energy for 835MW.	successfully but they do not have molten salt storage capacity in commercial operation. We are certainly hoping that we will be able to do that at the solar-thermal plant for which we already have environmental authorisation. It will be the biggest solar–thermal plant of its type in the world Solar power has more potential in South Africa than in any other country. **In 2009, Koeberg power station had a unit capability factor of 83 %. The unplanned capability loss factor was 2 %, which is considered world-class performance. Planned outages for refuelling and maintenance were 15 %.** **Eskom confirms that renewable technologies are part and parcel of the energy mix for Eskom.**
20	Mr Mike Kantey CANE	Mr Kantey asked if he could go back to the issue of 20,000MW, where it stated that in the discussion between DEA and Arcus GIBB (Jaana Ball) that Eskom is pursuing one nuclear reactor of 4000MW. However, in line with the country's long-term intention to investigate up to 20,000MW of nuclear, another	Comment noted.

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		application may be submitted by Eskom soon after the submission of the Final EIA report for Nuclear-1 expected to be submitted in June. So, in the second half of the year it will come back to Bantamsklip.	
21	Mr John Williams Save Bantamsklip Association	Mr Williams reminded Mr Stott that he had been requested to respond to the capping issue of renewables, which relates to the regulatory framework.	Mr Stott replied that he cannot deal with the capping issue, which is a NERSA decision.
22	Mr Paul Slabbert Strandveld Tourism and Conservation Association	Mr Slabbert stated that regarding transmission and distribution of electricity, a concern around cumulative impacts was voiced at the meeting last year (he did not know the exact date of the meeting). This is definitely something that is assessed in EIAs. The nuclear power station EIA needs to assess the cumulative impact of transmission line corridors. The separation of issues of transmission and generation does not go down well with the public. He added that although there will not be an authorisation on Bantamsklip, however, there is a feeling that Bantamsklip is reserved, the way it is worded in the EIA. It would be interesting to note if there will be an authorisation for transmission. Imagine if there is an authorisation for transmission lines, i.e. the line is secure. This technically does not make sense, both in the EIA process and in practice to have a transmission authorisation without a site authorisation.	Ms Herbst: Eskom have previously completed EIAs for large coal fired power stations excluding the transmission lines. It is extremely difficult to deal with both EIAs together as one because of the complexity and different I&APs with different issues. Authorities have always been quite comfortable with Eskom's approach of undertaking the EIAs separately. Ms Herbst: In this case, the Bantamsklip site has been identified as one of the potential nuclear sites for the future. Therefore, it makes sense to do the evaluation of environmental impact assessment for the transmission line, and when we do the site application, we can consider the impacts from the transmission line EIA as well as the EIA for the site. This could well be the case for the EIA for the Nuclear 2, 3 or 4. Ms Ball: The transmission EIAs are at the scoping phase. Where possible cumulative impacts have been considered. (Arcus GIBB are the project managers for the Transmission EIA associated with Bantamsklip).

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		How can we continue assessing the distribution/ transmission of power from Bantamsklip? How has DEA responded to the approach? He also asked if the DEA had their concern in the request to join or merge the two assessments and wanted to know what their response was to this issue. Technically, if DEA were happy with the approach, he would say that if Bantamsklip is scrapped from the table at this point, then the Transmission lines EIA should be stopped as well. He asked that this recorded.	Ms Ball: We have had numerous meetings with DEA and they are happy with the approach of separating the site EIA and transmission line EIA.
23	I&AP	I did not have time to read the entire report. But I have read the summary of what the consultants have said. There are 66 days to get 2 x CDs of the detailed specialist reports. Not much time to review the reports. Who will check on the consultants? If there are issues around the marine biologist – who will be reviewing the specialist studies?	Ms Ball: Arcus GIBB welcome peer review of the specialist studies. The DEA has also appointed a peer review panel. On the review panel, there are a number of members representing different disciplines; I know for certain, there is a flora and social specialist. Arcus GIBB has appointed ' in our opinion' the best specialists available. They are not only single specialists, they are specialist teams and in some cases up to 10 specialists per team. Peer reviewers have been appointed by Arcus GIBB to internally review specialist studies.
24	I&APs	Is it possible to make the list of the DEA peer reviewers of the specialist reports available to the public?	Ms Ball suggested that this I&AP writes a letter to Department of Environmental Affairs (DEA) and request the list of peer reviewers that the DEA has appointed to its review panel directly from the Authority.

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25	Ms Katrin Pobantz Tesselaarsdal Action Group	Ms Pobantz asked if once the peer review has given their review of the specialist studies, would their opinion be made available to the public, i.e. the peer reviewer's opinion on the specialist studies that have been undertaken? She also enquired if the DEA is going to base the decision on the peer review of the specialist studies and if the public will be allowed to have access to the information as part of the public process and access to information.	Ms Ball: Again, that question needs to be submitted to the Department of Environmental Affairs (DEA) Case Officer of the Nuclear-1 EIA. **Clarification: DEA have appointed a panel to review the Environmental Impact Report (EIR) and its specialist studies, this would include referencing specialist studies but to our knowledge (Eskom) the Review Panel's scope of work does not include a detailed review of each specialist study.**
26	Mr Mike Kantey CANE	Mr Kantey said he wanted to go back to the list of issues, which were raised by the public, and particularly the issue of human health. He would like an issue recorded in these proceedings. Dating back to July 2007, in the initial record of key stakeholder meetings where he recorded a series of questions relating to the hazard posed by airborne and waterborne emissions and effluent. Mr Kobus of the National Department of Health picked this up and he requested to see responses to the issues raised by Mr Kantey. This was picked up in the January 2008 Scoping Report. Page 7-11, it states in bullet 2 "the potential risks may occur if the radionuclides or hazardous chemicals reach the human body, through volatilisation, direct contact with the skin, migration of radioactive effluent into groundwater that is used as a drinking water source and used to irrigate crops" and bullet 3 "atmospheric release of radioactive substances will	Ms Ball: Your issues have been noted.

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		contaminate the air. The radioactive substances will subsequently be deposited onto the land and ocean through dry (fall out) and/or wet deposition (rainfall). The contaminants will then enter the soil surface, water bodies, ground water as well as the ocean through natural processes. Flora and fauna reliant on these natural resources will be affected by the radioactive substances". And it goes on to list in issues: Section 7.3.11, bullet 1 • " there are perceptions/fears of danger/accidents leading to a fall in land values and loss of organic certification" bullet 4, • "potential for contamination of crops through either through wet and/or dry deposition, irrigation of crops using contaminated surface and/or ground water and subsequent uptake by crops for human consumption" This is then recorded as a list of issues in the Scoping Issues and Response Report on pages 51, 52 and item 60 and also in the January 2008 Draft Scoping Report, 3.4 bullet 2 " It is assumed *(please note that use of the word assumed)* that insignificant amounts of radionuclides will be released during the construction, decommissioning and further phases of the nuclear power station…." 2nd bullet - the operational phases the emissions of	

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		radionuclides will be provided by actual historical data researched at Koeberg, which was designed in the 1970s. 3rd bullet – the client will provide the radionuclide expected to…..' So, in fact, the very person whose data set is subject to scientific scrutiny will in fact provide the data set and there is no independent person who will provide the data set for any study done anywhere else in the world. The proponent is going to provide the dataset. And then it goes on to say, on page 47, point 5.22 "radionuclides emissions…..and has to comply with the amount allowed by the National Nuclear Regulator" but there is no data set provided, why? So, when you come to the Appendix 5 of the PBMR Koeberg Radiation Air Quality Final Report, the effective dose of Cesium 137 is $6.9x10^{8}$ and Strontium 90 is 1.6 $x10^{7}$ and also in the reports of the EMS, 1982 - 2002, from Koeberg Nuclear Power Station, liquid effluents containing Strontium 90 were given in ❑ 1988 - $3.03x10^{5}$, ❑ 1989 - $3x10^{4}$, ❑ 1991 - $7.96x10^{4}$ ❑ 1994 – 5.36 $x10^{7}$ ❑ 1995 - 9.5 $x10^{6}$ ❑ 1997 – 1.51 $x10^{7}$ ❑ 2001, etc.	

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		In the PBMR report, this information is given in becquerels per annum. Yet in the Air Quality report of this Nuclear-1 EIA report, (it is giving references of 2002) and it says that we will not be talking about ingestion and there is no mention anywhere in the report of pathways of human health through the digestion of foodstuffs. Mr Kantey therefore questioned where in the Human Health report is the impact of radionuclides actually addressed in data set terms (scientific data or technical terms) and not in terms of the opinion or assumptions of the proponent? There is no data set, he has searched for it since the 6th March 2010 and there is no data set. Therefore, when it comes to actual technology, in terms of the International Atomic Energy Agency, according to National Nuclear Standards, where is the data? He added that the Air Quality report lets slip the information that the EPR is under consideration (probably missed out on the editing of the report) being the European Pressurised Reactor. He recorded that it is felt that this process from a scientific point of view is questionable. He would like to get experts from around the world to look at the peer review of the specialist studies. Mr Kantey informed Ms Ball that the information provided was a statement and he is not expecting a	Ms Ball: That was a long question, is noted and will be addressed.

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		response. He then referred to page 3.3 of the EIA report, the amount of nuclear fuel waste over the life cycle (which does not say how long) is 1,880 tons. This information is very specific. And again, page 33-26 "according to …and Energy Institute 2008 (reference in the Bibliography), the estimated liquid waste for the EPR plant type per unit is approximately 8,000m^3 per year per unit. Now where is that stated? Why are these facts here if they are not in the Executive Summary and not in your report? Where is the peer review? How can this information be so specific? Where is that study? He emphasised that this is in the Air Quality Report, Appendix E10 at page 326. This is an omission and is a tangible omission. Why is it not in the list of issues, in the Executive Summary, and what is the peer review going to do about this? The reviewer's CV indicates that he has served on the Nuclear Atomic Energy Board from 1971 to 1984 and actually served again from 1986 to 1995. Mr Kantey wanted to know he could be seen as independent?	

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27	Mr Kobus Visser Tesselaarsdal Action Group	In die voorlegging is verwys na die feit dat as Bantamsklip afgekeur word, dan sal hy verkoop word. Wanneer gaan ons hierdie punt bereik, dis my eerste vraag. Want as die lyne se proses goedgekeur word dan het julle 'n nuwe studie groep om hierde proses op te grawe en aan die gang te sit en dit gaan nog moeiliker wees en dit is wat hy probeer sê as die lyne goedgekeur is dan gaan julle baie makliker 'n "site" goedgekeur kry. Nou wanneer gaan Eskom besluit dis genoeg, ons aanvaar Bantamsklip is nie aanvaarbaar nie. <u>Translation:</u> The presentation refers to the fact that if Bantamsklip is rejected, it will be sold. When will this point be reached? If the transmission lines is approved, then a new study group will have to restart this process and it will be more difficult to get the site approved. When will Eskom decide that this is enough? Bantamsklip is not acceptable.	Ms Herbst: Bantamsklip has been identified as a potential site for a nuclear power station. We are continuing to consider it as a potential nuclear site. That is why we are continuing with the Environmental Impact Assessment for the transmission lines. It is likely that Bantamsklip will be considered for Nuclear-2 or -3. This EIA has indicated there are no fatal flaws in the Bantamsklip site.
28	I&AP	A question was raised regarding a fatal flaw and it was queried if the economic, the tourism impacts, etc, which are high impacts cannot be regarded as fatal flaws in the Bantamsklip site.	Noted.
29	Mr John Williams Save Bantamsklip Association	Mr Williams stated that the fact that the consultants are standing up comfortably and saying that there are no fatal flaws makes him conclude that the process is flawed.	Noted.

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30	Mr Mike Kantey CANE	Mr Kantey warned that there has been a legal precedence in this country for throwing EIA reports out, it is in the public record. Earthlife Africa took the proponent to court and were successful because of fatal flaws in the process and not in the actual science. He is putting on record that, in the Air Quality report alone, there are so many flaws that could drive this bus.	Noted. **As stated above (response to Comment 15), Mr Kantey's statement is not a correct reflection of the judgement. The Cape High Court judgement, which is available on request, specifically states that the EIA process had been comprehensively undertaken. The Court found that the Director-General of the then Department of Environmental Affairs and Tourism declining to meet with Earthlife Africa subsequent to the submission of the Final EIR was not appropriate.**
31	I&AP	This I&AP stated that the reports that have been made available over time are a complete waste of time. Whether it is Nuclear-1, 2, 3 or 10, it is all totally irrelevant. What this means is that concerning the whole nuclear debate, the greatest fatal flaw is about waste and health. Where does the waste go? The only place where an Environmental Impact Assessment is should be conducted is at Vaalputs and in Namaqualand and where the storage of waste for the next 40 years, is going. That is the only huge fatal flaw. In terms of nuclear physics, waste is the unseen enemy. Flora, fauna, biodiversity, etc can be studied but until waste is investigated nationally, everything else does not matter.	Noted. **The management and transport of waste is covered in the Draft EIR. Radioactive waste also falls within the jurisdiction of the Minister of Energy in terms of the Nuclear Energy Act and has been further delegated to the National Radioactive Waste Disposal Institute. Therefore radioactive waste will also be covered in more detail in their processes and the NNR licensing process.**
32	Mr Mike Kantey CANE	Mr Kantey informed the meeting that he also represents the Namaqualand Action Group for Environmental Justice, whose chairman is Mr Andy Pienaar. They are a community whose membership comes from every community represented in their structures from that area.	Comment noted. **As stated above (response to Comment 11), the slide incorrectly indicated that Vaalputs was being considered as a disposal area for high level radioactive waste. It should have read, and has been changed in the presentation, that Vaalputs is likely to be**

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		Mr Kantey said that given that scenario and given Mr Andy Pienaar's determination for the past 2-3 decades to oppose the dumping of nuclear waste at Vaalputs - that slide presented by Arcus GIBB stipulates categorically that waste will be disposed at Vaalputs, this will be resisted. They will oppose the dumping of waste with all efforts because there is popular resistance to dumping of waste in Namaqualand. People do not come to meetings representing their jackets, in fact, they are mandated representatives. I acknowledge the presence of Tesselaarsdal Action Group, Strandveld Tourism and Conservation Association, Save Bantamsklip Association, etc and all other representatives and noted that they are mandatory representatives of the various communities. Another fascinating aspect, is how plans are forged in the Eastern and Western Cape to ship waste to the Northern Cape? So what is being said is that Bantamsklip, Thyspunt and the Northern Cape community will be sacrificed for the benefit of Alcan, Canadians and Australians.	**considered as one of the options for a final repository for radioactive waste.**
33	I&AP	This person stated that he understood that at Thyspunt there is a lot of archaeological collections (refer to specialist reports) that need to be undertaken prior to the commencement of construction on the site. It was asked how construction can commence in 2011 when you have a lot of information to still collate?	Ms Ball: With respect to Thyspunt, the specialist concerned indicated that mitigation measures need to be started straight away. Ms Herbst: It states that it says that site preparation will commence in 2011, those are however, very optimistic timelines. The Environmental Management Programme

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			(EMP) stipulates the recommendations of specialists and what actions are required. The EMP is legally binding, therefore Eskom will be required to implement the recommendations of, for example, the heritage specialist, prior to construction starting.
34	Mr Mike Kantey CANE	Mr Kantey asked for clarity regarding safety issues. What is most important about public participation is the theory that people believe that people will participate. If someone says A and the consultant says B, and then there is no more discussion, that is not public participation. That is the same issue with the Issues Trail, which I will raise as part of the legal context, in terms of flawed process. When he raises an issue and is not addressed to his personal satisfaction, then there is no public participation. He added that this is an issue that relates to the technical specifications, they are not sufficient and he would argue and he would be scientifically right in the EIA. It is insufficient to claim that plant type is unknown. Specifics must be made available because when the safety case of the PBMR was considered, it was highly analysed by the National Nuclear Regulator and well documented. For Nuclear 1, we do not know what it is, we do not know if it is a BMW or Mercedes Benz, maybe it has an air bubble or maybe it does not.	Ms Ball commenced with a response but Mr Kantey stated that he is not expecting a response from Arcus GIBB. Mr Kantey indicated that the issue raised is a process issue on the table and cannot be responded to. It needs to be recorded. It is a fatal flaw of the process.

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		How can a safety case for an unknown nuclear reactor be evaluated scientifically? (He was not talking about the perception, the public relations exercise), but a reactor in terms of the first principle: nuclear physics, in terms of nuclear engineering, chemical engineering, etc? Firstly, how it works is unknown, the air quality, and emissions, etc, cannot be evaluated when the type of the reactor is unknown. He said that only once Eskom's infinite wisdom has made an economic decision and can say, they have looked at Areva, they have looked at AP 1000 and this is what they are going to design for and only then can the EIA commence.	
35	Mr John Williams Save Bantamsklip Association	Mr Williams requested Arcus GIBB to clarify the positive benefits at Bantamsklip, i.e. the positive benefits of marine reserve around the site.	Ms Ball: One of the specialist opinions was that should a nuclear power station be built at Bantamsklip, one of the positive benefits would be the establishment of a marine reserve. The specialist was of the opinion that the ongoing poaching would be prevented with the presence of Eskom on site.
36	Mr Mike Kantey CANE	Mr Kantey said that because this is a public participation process, he would like to register a very fundamental point with regards to filter feeders (Abalone). It is all in the Koeberg reports, the becquerel activity per kilogram of filter feeders. He stated that absolutely hilarious to read that there will be a net zero impact in the community around Bantamsklip.	Ms Ball: Explained for the benefit of all participants. The UCT has undertaken the marine studies at Koeberg Nuclear Power Station and they are the same specialists that have undertaken the investigations for the Nuclear-1 EIA.

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		Another point he raised is that the Buffelsjacht Community, a fishing community live on that sea life. How can the impact not be recognised? He stated that the fact is that information around becquerel activity around Koeberg Nuclear Power Station (20 years worth of information) is presented in Eskom's reports. It is not about UCT, it is the information presented in Eskom's reports.	
37	Mrs Linda McNeal I&AP	Mrs McNeal asked that the slide which refers to base load options as being only feasible with coal and nuclear be taken out because it is misleading the public. This is important as the team will be moving around to other communities, e.g. Pearly Beach, Bredasdorp, etc. Her understanding is that the base load is not only limited to coal and nuclear.	Mr Stott: The information presented is correct and honest. South Africa requires all the energy that can be acquired, from renewables to other base load generating sources. In terms of the International Energy Association – Energy Outlook, the different load factors are described as: *While there are no definitive utilization breakpoints, base load plants are facilities that operate almost continuously, generally at annual utilization rates of 70 percent or higher. Intermediate load plants are facilities that operate less frequently than base load plants, generally at annual utilization rates between 25 and 70 percent. Peaking plants are facilities that only run when the demand for electricity is very high, generally at annual utilization rates less than 25 percent.* Since renewable technologies have annual utilisation factors well below 70% they are not regarded as base load. Eskom's coal and nuclear plants operate above 70% and therefore these technologies are referred to as baseload.

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No	**Name**	**Comment**	**Response**
38	Ms Katrin Pobantz Tesselaarsdal Action Group	Ms Pobantz stated that they are aware of renewable sources that can provide up to 10,000MW. But capping is set at 875MW and that does not make sense. There is a possibility for another power source, which does not kill people around them, which does not have the potential to explode. She also added that there is a potential of having passive houses, the residential houses could provide electricity back into the grid. She explained that this happens in Germany, give people an opportunity to feed into the grid and reduce their own consumption. Why is South African not giving people the incentive to start providing into the grid? She also went on to say that the Independent Power Suppliers should also be given the potential to come into the grid. She feels that this could be the first and quickest option and yet the Nuclear option, which costs a fortune, is being investigated. Eskom should be looking further than Nuclear.	Mr Stott: It is important to start differentiating between Eskom, the National Energy Regulator of South Africa (NERSA) and the Department of Energy (DoE). It is the DoE that deals with the energy planning for the country and not Eskom. The DoE is responsible for the Integrated Resource Plan (IRP) and determines what mix of renewables, hydropower, nuclear, solar, etc comes from Eskom and how much comes from the Independent Power Producers. The framework that enables the IPPs to provide electricity, it is not Eskom. NERSA provides the regulatory framework that enables the IPPs to produce into the network. If there is any cap, it is NERSA's cap and not Eskom's. Eskom is looking at a range of energy options. They are looking at wind; there is already environmental authorisation for a wind farm of 100MW and a concentrated solar power plant. Eskom is investigating other options, which will diversify the energy mix.
39	Mr Mike Kantey CANE	Mr Kantey noted that it has not been Eskom's decision to go nuclear, it is the National Government's responsibility to influence policy and that policy, which he has witnessed for the past years, has been determined outside Eskom's. It has been imposed on Eskom by the central government during the National Party era and beyond. It is difficult dealing with that policy.	Comment noted.

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No	**Name**	**Comment**	**Response**
		He went on to say that given that political faith, the only way citizens of this country can oppose this policy collectively, under the democratic order of the Constitution of South Africa, is to form a coalition (which may be opposing nuclear energy as a side show) but the real coalition is for People's Summit on Energy Policy which Dave Sax and Richard Worthington of WWF have already proposed for the middle of this year. So what we need to forge is a popular front for the liberation of energy policy. If the citizens of SA can do that, Eskom will become their allies overnight.	
40	Mr Mike Kantey CANE	Mr Kantey stated that this whole thing that has been running in Cape Town to subsidise industry, specifically to the Bayside and Hillside Aluminium Smelters. Clearly, the smelters are the big energy consumers and not residential; they are industrial and mining sectors and are located in the north of the country. He added that in fact, energy goes both ways to and from the grid, but we need to be aware that whether it is PWR, renewables or something else, a grid is a grid. These arguments have been going on since the 80's. So the real issue is - is it necessary to mess up a beautiful spot in the biosphere in the Agulhas Plain? He asked if it is it worthwhile, from a national interest similar to St Lucia, sacrificing this particular site out of national expedience.	Comment noted.

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No	**Name**	**Comment**	**Response**
41	I&AP	Die hele ding oor alternatiewe energie gaan nie oor wat Eskom besig is om te bou nie; dit gaan oor wat onafhanklike verskaffers toegelaat word. Ons weet wat Eskom besig is om te bou. Ons wil hê Eskom moet die deur oopmaak saam met die regering sodat onafhanklike mense kan inkom. Die tweede ding is dat die departement van omgewing is 'n regeringsliggaam; dit is nie 'n organisasie nie. Die een ding wat ek ook wil vra, heeltemal af van hierdie punt af. Ons het 'n e-pos gestuur en gevra hoekom kan hierdie document nie ook in Caledon beskikbaar gestel word nie. Daar het niks van ons versoek gekom om dit beskikbaar te stel nie, want dit was ook vroeër genoem dat die mense wat op die lyne sit het eintlik niks met Bantamsklip te doen nie. Dit is die grootste klop nonsens wat daar is. Daardie mense, al sit hulle in Grabouw, dan is hulle net so betrokke in wat daar gebeur. Kan ons net hierdie inligting oral beskikbaar maak? Met die eerste Draft Scoping Report moes ons ook gevra het om dit beskikbaar te gemaak het in Caledon. <u>Translation</u>: The issue is that it is not about alternative energy that Eskom is building, but it is about what independent power producers are permitted to do. There is an	**A copy of the Draft Environmental Impact Report was hand delivered by Ms Ball on 21 March 2010 and placed in the Caledon Public Library for public review on 23 March 2010.**

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		awareness of what Eskom is busy building. Eskom, together with government, should open the door to independent producers. Secondly; the Department of Environment is a government body and not an organisation. An issue that is completely off the point that was raised, an e-mail requested that these documents be made available in Caledon; however, there was no response to this request. It was also mentioned that the people who are affected by the transmission line have nothing to do with Bantamsklip. This is utter nonsense. Even if these individuals are in Grabouw, they are just as involved in what occurs at Bantamsklip. Can this information not be made accessible to everybody? Similarly, a request for the first Draft Scoping Report to be made available in Caledon also had to be made.	

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No	**Name**	**Comment**	**Response**
1	I&AP Pearly Beach Ratepayers Association	The I&AP noted that it has been said that Bantamsklip is not being considered for Nuclear-1, and wanted to know the reason that it is not an option for Nuclear-1.	Mr Heydenrych: For the purpose of Nuclear-1 EIA, Bantamsklip option has been 'ruled out' as an alternative, as it is not the preferred site. But this is not to say that it will be excluded as a possible site in the future since the outcomes of this EIA are that the alternative sites do not have fatal flaws.
2	Mr Mike Ravenscroft Landowner	Mr Ravenscroft asked if the team were aware that by excluding Bantamsklip site – that the longer they leave it, the more difficult it would be to get development in the area. The environment e.g. sense of place, visual, etc, are all the factors, which now have significance when considering potential developments. For the purposes of Bantamsklip, it should be noted that conservation is playing a far bigger part in the area, with the opportunities that are presented by the SANParks. Visual is a negative impact in nearly everything that we have discussed. He went on to say that by leaving Bantamsklip now, they are allowing an opportunity for it to become part of the Agulhas National Park.	Mr Stott: This EIA was for one nuclear power station at one site. Different sites were looked at in order to decide which one is the preferred option for Nuclear-1 (if it is approved). We have said at all public meetings since we started in 2007 that the estimation of nuclear power required is 20 000 MW. He went on to further explain that the government indicates that it requires more nuclear energy in South Africa, then Eskom will look at other potential sites. It is hoped that this information will be published in the Integrated Resources Plan (IRP), which the Department of Energy have stated that they will publish in June this year (2010). An EIA would have to be done should Nuclear-2 and Nuclear-3 be required. Therefore it does not mean that Bantamsklip has been ruled out forever.

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3	Ms Amanda Jephson Save Bantamsklip Association	Ms Jephson said that from what has been presented, it seems as though Thyspunt was the most sensitive site. She asked if an EIA is worth it, because it seems that regardless of what the EIA shows in terms of sensitivity, the final site selection was based on the economics, transmission integration and the close proximity of the site to the load centre, in this case, Coega. She queried if a site is chosen regardless of how sensitive the site is? Is it all about economics, transmission integration and load centres? It does not seem to make a difference in the selection process. The information that has been presented does show that Thyspunt is the most sensitive site. So in the end do you choose a site with a basis that you will conserve the site as a Natural Heritage Site?	Ms Ball: In terms of the assessment, we had 24 different specialists. In terms of clusters, there were 3 clusters, such as the biophysical environment, the socio-economics and economics. At the integration meeting with all 24 specialists, we considered potential impacts within their specific disciplines. The specialists assisted in identifying those studies that would influence the site selection. For example, where the significance was equal across all three sites, the outcomes of that study was excluded for the purposes of site selection. This is not to say that any one of the specialist recommendation and impacts are ignored, there are mitigation measures included in the EMP for all disciplines (appendix F). Ms Ball therefore disagreed with the speaker that environmental aspects were not looked at. The specialists helped us integrate the findings of the assessment of the alternatives. Our assessment now includes the factors such as cost implications and socio-economic implications.
4	I&AP Pearly Beach Resident	The speaker understood that there are new technological advancements of these nuclear power stations, i.e. new ways that do not use water-cooling. If that is true, it was questioned why we still using water-cooling technology?	Mr Stott: Certainly, even coal-fired power stations that we have in South Africa use dry cooling. There are nuclear power stations that use dry cooling but there are no power stations that use zero water for cooling. For a nuclear power station, for safety reasons, high volumes of water are always needed as a back up should you still need water for cooling. Even if you have a dry-cooling system, you need to have back-up water, e.g. a dam or near to the sea. At the moment in South Africa, nuclear power stations near

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			the coastline are needed for the use of the sea for cooling purposes. If the sea is not used, potable water would have to be used. South Africa is a water stressed country and cannot afford to use potable water for cooling purposes. The less water we use for industrial use, for power generation, the better.
		A second point was raised that no one presently views Eskom as financially stable. Where is Eskom getting the money for these Nuclear Power Stations?	Government, together with Eskom, is looking at the funding options for the expansion of the electricity supply system in South Africa. For any kind of power station, regardless of whether it is a nuclear, coal-fired or renewable energy power station, funding is required. This is linked to a process called the Integrated Resources Plan (IRP), which is being done by the Department of Energy. The IRP considers how much the demand for electricity is likely to grow over the next 20 years, what kind of power stations should be built to meet that demand and who should build and operate those power stations. The cost of the different kinds of power stations is one of the considerations taken into account. The licensing process of the National Energy Regulator of South Africa also considers the impact of any new power stations on the electricity prices.
5	Mr John Williams Save Bantamsklip Association	Mr Williams alleged that the Bantamsklip site is flawed and he will make submissions and commentaries right up to the end of the deadline date. He had 3 questions The first question concerns the site sensitivity map.	Mr Greeff: If I understand you correctly, the property, which you are talking about, is part of Walker Bay State Forest but is managed by Cape Nature at present. Eskom is busy talking to government regarding the purchase of the property which extends to the Bantamsklip site.

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		He reminded everyone that the presenter stated that Groot Hagelkraal – was registered as site 72, registered before Eskom expropriated it. The presenter had correctly said that the SA Heritage status is an unregulated status so does not have legal status. The question Mr Williams asked is related to the fact that the site has occupied Soetfontein. He enquired if Eskom had bought Soetfontein and have they negotiated the use of Pearly Beach Nature Reserve with Cape Nature? Close examination of the map shows that the boundary is the Cape Nature Reserve. Mr Williams commented that this discussion is very interesting because they have already dug into the area and already expropriated the Cape Nature Reserve. The gentleman had stated that the whole area is called Waterford and belongs to the SANParks. The point of what is being discussed about is an area of a congregated protected area. Presently, Cape Nature is managing it very well. The point of the argument is that that area is part of a system of national and international importance. The Agulhas National Park extends and consolidates and enhances itself. What is happening is that by Eskom capturing that piece of land it has hamstrung the ability of the area to develop as an ecotourism area because of ha threat that is constantly hanging over the stakeholders' head. He went on to say that in his opinion, Eskom will come and build a Nuclear Power Station whenever they feel like doing so.	Another correction that I can help you with is, the special section, which runs to the north, site 298, which has been registered by Eskom. The farm Groot Hagelkraal had been a proclaimed nature reserve, when Eskom bought the property but that proclamation lapsed on the purchase.

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		The threat of this power station is hanging right in the heart of our biodiversity area, in fact in the centre of endemism or the most endemic area of our country.	
6	Mr John Williams Save Bantamsklip Association	Mr Williams asked about the envelope criteria: what they heard is that authority is being sought for 4,000MW or 10,000MW. The fatal flaw here is that they cannot define the plant they are using. He would like to understand, how do you deal with the fact that you don't know what plant you are building? He asked someone to explain the envelope of criteria. He compared this scenario to being told to buy the car, in the cubby hole, there will be the manual, you do not know any details about the car such as what the engine size is, etc.	Ms Ball: Eskom knows exactly what technology type they intend to use, it is a Pressurised Water Reactor (PWR), but they do not know the plant type. A correction to Mr Williams' statement is needed. She agreed that they have been working with an envelope of criteria, (of technical and environmental criteria) and it is a comprehensive envelope of criteria contained in Appendix C of Draft EIR. If an environmental authorisation were received Eskom would be required to build a plant that is within these criteria. This EIA is for 4000MW at one site.
7	Ms Amanda Jephson Save Bantamsklip Association Strandveld Tourism and Conservation Association	Ms Jephson then read an extract from the EIA report. According to the specialist, Bantamsklip is situated within a sensitive Overberg Region, the site is very sensitive on a number of Late Stone Age Heritage dimensions. By Western Cape standards, the preservation and volume of archaeological sites is exceptional. Mitigation will be lengthy, expensive and resource intensive. Furthermore, the natural heritage landscapes of the place are excellent and make a real contribution to the sense of place in the region. The power station is likely to be visible over a very wide area (bear in mind of how flat it is here). The transmission lines, which will leave the site, will impact the scenic qualities of some of the iconic and treasured landscapes.	Ms Ball: I will have to verify the quote. I am glad that you have read it and say it is in our specialist study. In a number of specialist studies, the specialists have rated the impacts with medium to high significance. The specialists have also looked at potential mitigation measures. We have examined and discussed the report with Eskom and the 24 independent specialists. Recommendations have been built into the EMP and should any of the sites be authorised, Eskom would have to comply with the mitigation measures.

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		She stated that she was endorsing what Mr John Williams had said. It is the Eastern entrance to the Cape Agulhas National Park. Can you imagine the tourists coming through to the Agulhas National Park and seeing this monstrosity?	
8	Ms Amanda Jephson Save Bantamsklip Association	Ms Jephson reiterated that it is stated that in the specialist report that Bantamsklip is highly visible and the visual impact cannot be mitigated. She does not understand how this matter is going to be dealt with.	**The comments received are being discussed with the visual specialist and if required the report will be modified when finalised.**
9	Mr John Williams Save Bantamsklip Association	Mr Williams noted that the end of the 2nd question was answered but not satisfactorily. Koeberg is 1 900 MW and here 4000MW or even 10 000MW is being discussed. The answer given was that the specialist would deal with all of this, does that mean that the specialist will deal with 2 or 3 units in each site?	Ms Ball: This EIA is for one nuclear power station of up to 4 000 MW, depending on the plant type this could be 2 or 3 units. In the site sensitivity analysis, the specialists looked at sensitive areas on the site, how many units can each site accommodate and identified any areas on the sites, which are not considered sensitive. 31 hectares is required for one Nuclear Power Station of 4000MW. Should Eskom need to build another Nuclear Power Station, they will need to undertake another EIA process.
10	Mr John Williams Save Bantamsklip Association	Mr Williams said that an 800m buffer was referred to, he wanted to know what is a buffer zone?	Mr Heydenrych: A buffer is an area, which will be imposed by the National Nuclear Regulator in which no one may reside. The main purpose of a buffer is for safety. It means the power station needs to be located away from the road reserve.
11	Mr John Williams Save Bantamsklip Association	Mr Williams stated that there are no seismic regulations in South Africa and he questioned the use of USA seismic risk regulation criteria.	Mr Stott: Yes, you are correct. The seismic criterion for the site is not yet promulgated in South Africa. The National Nuclear Regulator (NNR) is accountable for this aspect. In the absence of regulatory criterion, we have been using USA, and we have used various international standards as a baseline from the International Atomic Energy Agency.

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			We have a seismic design and all stations are designed based on Peak Ground Acceleration (PGA) values. You may have noticed that Koeberg's PGA was higher. The existing Koeberg nuclear power station had to be designed in a manner, which considered the PGA value, which necessitated additional design.
12	I&AP	This I&AP noted that there is a fault line in Bantamsklip; it would seem irresponsible to even consider putting in a Nuclear Power Station at Bantamsklip. Why put it there?	Mr Stott: There is no upper limit for designing a nuclear power station intended to be constructed in an area with the potential for seismic activity. The existence of fault lines and hence potential seismic activity means that building would cost more and also take more time to build. It is all about the time it takes to do additional design and cost associated with an area which has higher seismic potential.
13	I&AP	A question was raised as to how many reactor units will be needed in order to generate 4,000MW? There are 2 units in Koeberg, why are more units required?	Mr Stott: It was up to 4 000 MW because at the time of starting this Nuclear-1 EIA, we were looking at two technologies. One of the technologies was 1 100 MW and the other one was for 1 650 MW, which would have translated to 3 300 MW if there were either 3 units (for the 1 100 MW technology) or 2 units (for the 1 650 MW technology) respectively per site. So, we instructed the environmental consultant, to be conservative, and to go for 4 000 MW.
14	Mr John Williams Save Bantamsklip Association	Mr Williams advised the Environmental Assessment Practitioner that the Oceanographic Specialist, Appendix E is not found on the website.	Noted with thanks. Appendix will be re-loaded on the website.

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15	Mr John Williams Save Bantamsklip Association	Mr Williams requested Eskom to exercise its corporate responsibility and that they consider very seriously selling Groot Hagelkraal (their site) to Agulhas National Park. An application is to be submitted to UNESCO for a World Heritage Status for the 20km radius of Bantamsklip between the Dyer Island Nature Reserve and SANParks. It is believed that the criterion for a world heritage status actually exists and that Eskom should retreat from this position, which people believe, is unsustainable and has no mitigation measures.	Comment noted.
16	Mr Eugene Hendry Pearly Beach Residents Association	Mr Hendry asked if Eskom is looking for more sites along the coastline?	Mr Stott: Certainly, if the government in its Integrated Resource Plan, which they have indicated that they will publish in June this year (2010), indicate that they are going for more nuclear power stations, we would have to find more nuclear power station sites.
17	Ms Amanda Jephson Save Bantamsklip Association	I would like to pick up on this World Heritage Site and archaeology. ❑ The statement of significance in your report states that Bantamsklip is highly significant in terms of Late Stone Age, which is 50 years (date is definitely wrong) ago and Middle Stone Age archaeology, which is 300 years (date is definitely wrong) ago. It further states that Late Stone Age of this area is directly linked to the heritage of South Africans who are alive today and is automatically protected by Section 35 of the National Heritage Resources Act. I would like to ask, with respect to the requirements of the NHRA, how is that protection going to help here?	Ms Ball: The specialist is from UCT and has extensive knowledge of the study area. One of the key recommendations in the Draft EIR is that extensive *in situ* excavations should be undertaken on site where Eskom wants to build a nuclear power station. If Eskom want to start with construction, Eskom will have to start with excavations quite early. Eskom have already established from the archaeologist as to how long it would take to compete the excavation. In terms of the protection of the NHRA, all recommendations that have been made by the specialists are in line with the NHRA.

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		❑ In *situ* excavations being done are mentioned in the report. Ms Jephson enquired when these excavations are going to take place? ❑ She also wanted clarity on the length of time for implementing mitigation measures, which had been mentioned as long periods. She asked if Eskom is prepared to wait for long periods to build the nuclear power station since it is urgently required.	Ms Herbst: Excavations can take up to 6 months. However, the important point is that no matter how long it takes it has to be done if it means getting more resources to complete the excavations, Eskom will have to do that. No matter how long it takes, we have to complete the relevant excavations prior to commencing with construction.
18	Mr Mike Ravenscroft Kleynkloof Private Nature Reserve	Mr Ravenscroft's issues concerned spent fuel: ❑ His understanding is that there are 3 categories of the waste and the high level/ spent fuel is the most dangerous. ❑ He also understands that 2 types of waste will be taken to Vaalputs. Seeing the excavations that are done for waste levels 2 and 3, shows that Eskom is worried about nuclear waste. ❑ Nuclear waste will be carted to the Northern Cape on South African roads and South African roads are not the safest in the world, he asked whose responsibility this will be. ❑ He further enquired, in terms of transporting of waste from the site to Vaalputs, who is going to guarantee the safety of transportation.	Mr Stott: Whatever radioactive waste is generated at the power station would eventually need to be transported to the national nuclear waste depository site. At this stage, waste is transported via road to Vaalputs under the jurisdiction of Dept of Transport and also under the National Nuclear Regulator. They use the International Atomic Agency standards for the transport of radioactive waste. So, we have to comply with those standards. ❑ Low and Intermediate level waste - the levels of radiation outside the container are well below the limits. For example, in similar transportation methods, which are used in Germany, Japan, UK, and France, you must be able to stand next to the trucks and radiation levels must be below the required limits. Tests are done and are in accordance with the National Nuclear Regulator (NNR). We have to meet the regulations before radioactive material can be transported to the repository site. ❑ High-level waste, which is a category 3, at this stage, the Vaalputs site is not licensed to store high-level waste. In fact, there is no final repository site in South Africa that is licensed for high-level waste storage. The

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			government promulgated legislation last year, the National Radioactive Waste Disposal Institute This body has been tasked to develop a repository for high radioactive waste.
19	Mr Marc Brindeau Franskraal Ratepayers Association	Mr Brindeau asked where sediment comes from when offshore disposal of sediment is mentioned.	Mr Heydenrych: Before the power station is built, an excavation needs to be done for power station foundations. Because a power station needs to be built on bedrock, as a result of the excavations, you have to dispose of the spoil either on land or in the ocean. Our recommendation is that the spoil be disposed in the ocean rather than on land because on land it would cause a much larger footprint.
20	Ms Amanda Jephson Save Bantamsklip Association	Ms Jephson posed a 3 part question: ❑ What is the projected quantity of effluent from the proposed nuclear power station in cubic metres per annum? ❑ What would the projected content of Strontium 90 be in Becquerel per annum? (Importantly, Strontium 90 is very dangerous). ❑ What would the projected radioactivity be in a sample kilogram mass of abalone and black mussels in the vicinity of Bantamsklip? Those are filter feeders.	Ms Ball: The response will be checked with the specialists, who are internationally renowned marine specialists, e.g. Prof Griffiths. If information is not available on the existing reports, we shall provide responses in the Issues and Response Report. Ms Ball indicated that these are very important questions and will provide feedback to Ms Jephson. ***Pers. comm.*** **Professor Charles Griffiths (Marine Specialist) 10/05/2010:** **1. The quantity of effluent released at the Koeberg Nuclear Power Station is approximately 27 km^3/s. This is however not significant when compared to the total volume of fluid (sea water) that passes any particular point on the South African coast line in a specified period.** **2. A mussel filters through approximately 1 – 2 litres of water per day but does not abstract all of the**

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			organisms and elements from the water. In some instances mussels have been used as passive monitors of heavy metal contents in seawater but in terms of radioactivity it is important to take into account that some background levels of radioactivity already exists. **The following comment received from Dr. T.B. Robinson (Marine Specialist) also has reference:** **Since the 1940s human activity has resulted in varying degrees of contamination of the world's marine environment with anthropogenic radionuclides. Globally, the primary source of this contamination is fallout from over 520 atmospheric nuclear weapons tests (Friedlander et al 2005). These radionuclides now occur alongside naturally occurring compounds at varying concentrations throughout the world's oceans. In a recent review of radionuclides in the marine environment Friedlander *et al.* (2005) report the occurrence of Cesium (Cs-137) and Strontium (Sr-90) in bivalves along the west and east coast of America, in fish, mollusks, algae, seawater and sediment in Japan, in fish, seawater and sediments from the Arctic and related seas, and in fish, mollusks and crustaceans in the north Atlantic region. Equivalent data are not available for the southern hemisphere.** **Such background levels of radioactive Cesium were detected in monitoring in the vicinity of Koeberg Nuclear Power Station (Nuclear Power Station) prior to the operational phase of the station, when Cs-137 was**

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			detected in a fish. Since then Cs-137 has been recorded in mussels, sand mussels and fish as part of the routine environmental monitoring programme at Nuclear Power Station (Alard 2005). The levels detected at Nuclear Power Station have been below the levels at which further investigations or compulsory reporting to the National Nuclear Regulator is required (Alard 2005). Strontium (Sr-90) has not been detected in marine organisms during routine radioactivity sampling at Nuclear Power Station (Alard 2005). **Due to the very few organisms in which radioactive Cesium has been recorded at Nuclear Power Station, the low concentrations at which it has been recorded at and the lack of detection of radioactive Strontium, these compounds are not deemed to have a significant (or even detectable) impact on the marine environment around Nuclear Power Station Due to the design of the proposed Nuclear-1 plant, coupled with the experience gained at Nuclear Power Station, there is no reason to anticipate that contamination by Cesium or Strontium would occur as a result of the Nuclear-1 development.** **Alard, M.M.M. (2005) Environmental survey laboratory quarterly report (April - June). Submitted to Koeberg Nuclear Power Station.** **Friedlander BR, Gochfeld M, Burger J, Powers CW 2005 RADIONUCLIDES IN THE MARINE ENVIRONMENT A CRESP Science Review. pp 96.**

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21	Ms Carla Roelofse I&AP	Ms Roelofse enquired about the financial impact be, in terms of the following: ❑ Business benefit in the area ❑ Impact of work force in the area While people are working in the area, will Eskom provide the infrastructure, will there be a permanent work force, etc and where will they be housed?	Mr Heydenrych: The Social Impact Assessment (SIA) has recognised the potential impacts arising from the influx of workers during construction. The SIA has also recognised that there may be work for additional people who come from outside the area seeking jobs. This has been recognised as a potential impact. In terms of permanent or temporary work force, Eskom has been advised to work closely with local authorities to identify an area, which is suitable for housing, construction camp and other associated infrastructure.
22	Mr Malcolm Streaton	Mr Streaton wanted to know how many people will work at the plant at any stage, and what the highest number will be during construction. He enquired where would people be housed during construction?	Mr Heydenrych: Approximately **7 700** people at peak. Not all the time. (**A figure of 5 000 was provided at the meeting and this has been updated**). Ms Herbst: Eskom does not have all the answers at this stage, we were waiting for the selection of the preferred site. Once a site has been selected, Eskom can initiate detailed discussions with local authorities. It is during the discussions that details around the how and where we would accommodate that number of people will be resolved. Each area would be different, as an example, if we were to go to Duynefontein, it is a different scenario because you have the whole of Cape Town to absorb this number of people. However, if we were to come to Bantamsklip, we would need to have a special plan due to the lack of infrastructure. Just to share our experiences in Lephalale, which is quite a small town in the Bushveld in Limpopo Province, the contractors building Medupi power station needed to accommodate approximately 7 000 people. In

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			this case single quarters were used to accommodate approximately half of the employees. This was carefully planned and included a recreational area to try and keep people in the construction village. In towns, there were mostly permanent structures, which would remain after construction has been completed. These accommodated both single and married employees. Social issues such as supporting education, clinics and local infrastructure. The Eskom Foundation investigates the needs of the community once a preferred site has been selected and identifies areas where support can be given.
23	Ms Amanda Jephson Save Bantamsklip Association	Ms Jephson stated that in fact, this is one of the aspects that has contributed to the exclusion of the Bantamsklip site as a preferred site. It is mentioned in the executive summary that it would be extremely difficult due to infrastructure requirements, destabilisation of the community, etc.	Ms Herbst: It is one of the issues that have been considered.
24	Mr Eugene Hendry Pearly Beach Ratepayers Association	Mr Hendry wanted to know about health impacts, and asked if there is any recourse from Eskom for the residents. He also enquired if there would be compensation during construction and operation.	Ms Herbst: The EIA has identified some of those potential impacts, for which the mitigation measures are included in the Environmental Management Plan, which we have to comply with. If Eskom or the contractors do not comply with the Environmental Management Plan (EMP), construction is stopped. So there is compliance monitoring. The EMP is a legally binding document. In terms of other aspects that may not have been picked up by the Environmental Impact Assessment, it would obviously be looked at, on a case-by-case basis. In some cases, we establish monitoring committees, which are representative of the relevant authorities, specialists and members of the community. If there is a legal issue, the

PEARLY BEACH PUBLIC MEETING (24 MARCH 2010)			
No	**Name**	**Comment**	**Response**
			matter follows the legal process. But in most instances, cases are resolved without having to go the legal route.
25	Mr John Williams Save Bantamsklip Association	Mr Williams added the following issues regarding the marine component to the minutes: ❑ Because of the proximity of Dyer Island, we would like to request that the modelling of the thermal plume, which is triggered by the suggestion of the pipeline, addresses the intake and outlet of the plant, bearing in mind that the pipe might be approximately 6 km from Dyer Island. ❑ There is a noise, submarine noise level and there is a sediment transfer. ❑ The current is predominantly in the south-easterly direction and the prevailing winds would be stronger in the south west direction rather than north west direction. In other words, that current and prevailing drift would go towards the Dyer Island. ❑ Because of the sensitivity of the area we are asking that the marine study actually models over 4,000MW, 6,000MW, 8,000MW and 10,000MW.	Mr Heydenrych: The oceanographic specialist based her assessment on the oceanographic circulation patterns and in which direction the water flows and in which direction the spoil would be deposited, etc. The marine specialists are in fact the same specialists who are doing monitoring at Koeberg Nuclear Power Station. Therefore, the marine specialist is well acquainted with the modelling scenarios of a nuclear power station
26	Mr Rudy John	Mr John asked how the noise affects the whales?	Ms Ball: We have noted the comment and will take that back to the noise specialist. I am however confident that the whales have been considered as the marine environment has been an area of concern around Bantamsklip. ***Pers. comm.*** **Adrian Jongens (Noise Specialist) 10/05/2010:** **The noise specialist has confirmed that there will be no impact on the whales as a result of any sound generated by the proposed Nuclear Power Station.**

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No	**Name**	**Comment**	**Response**
1	Mr Mike Kantey CANE	Mr Kantey made reference: Slide 11, bullet 1: He said he finds it very difficult to understand scientifically, how the environmental impacts of a nuclear power station plant which pertains to human health can be analysed, if the type is unknown. How can we the impacts of emissions be scientifically analysed when we do not know what we are talking about? The impacts are described using an analysis of another power plant. The analysis using the car (Golf or Mercedes) does not work, as one needs a scientific analogy. He asked for an explanation and for scientific clarification, not using the car analysis - he wanted to know how impacts will be assessed? There is an AP 1000 and EPR - which one is being referred to?	Ms Ball: I would like to correct Mr Kantey, we do know the technology but not the plant type. It is a technical correction. The specialist used data, which has been based on an envelope of criteria and Eskom can explain how they arrived at the data that was used for the assessment. Ms Ball: We know that it is a Pressurised Water Reactor but we do not know the plant type (AREVA, Westinghouse etc).
2	I&AP	There was an enquiry regarding Scoping where it was asked if it is designed to see if there are any showstoppers on the Nuclear-1 project?	Ms Ball: Arcus GIBB undertook Scoping - which is aimed at collating issues, and to consider if there are any issues that need to be investigated further. Now we are in the Environmental Impact Assessment, which assesses the issues raised during the Scoping Phase. Based on the specialist investigations, there are no fatal flaws on any of the sites, once mitigation measures are implemented.

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No	**Name**	**Comment**	**Response**
3	Mr Danie de Villiers Strandveld Tourism and Conservation Association	Mr de Villiers enquired about the term feasible – if the site is not feasible for Nuclear-1, it cannot be feasible for Nuclear 2 or 3. He asked for the accurate meaning o the term feasible.	Ms Ball: I think Mr Heydenrych probably used the wrong terminology there. We have stated before that none of the specialists found fatal flaws on any of the alternative sites. The EIA Regulations talk about feasible and reasonable alternatives. Bantamsklip is a feasible alternative but it is however not our preferred alternative site for Nuclear-1. We do not know the future of the sites, but the sites which are not preferred for Nuclear-1 may, however, be used by Eskom for Nuclear-2 or Nuclear-3. An EIA would be undertaken for Nuclear-2 or Nuclear-3. The economic and social circumstances may have changed by the time Nuclear-2 or Nuclear-3 EIA studies commence. It would also have to be determined at that time if the alternatives considered are reasonable and feasible alternatives.
4	Mr Mike Kantey CANE	Mr Kantey put forward that he had a lot of questions and was very conscious of the nature of public participation. He was not sure how to handle questions given the time allowed and given the nature of concerns. He said he would not like to miss the opportunity for the public to listen to some of the concerns, which do not only concern him as CANE Chairperson, but also all constituent organisations, including Namaqualand, Pelindaba, Bantamsklip, etc. He finds it very difficult for an ordinary South African citizen to participate fully in a mandatory and constitutionally driven process. He asked for guidance from the Chairperson and the house as to how to	Facilitator: When we started the meeting, we had an agreement in principle that we can continue until 20h30, if need be. Ms Ball: This is not the only manner in which to participate but there are many other methods of participating in the process. The Facilitator confirmed with the participants that it was agreed that Mr Kantey would be given an opportunity to ask all his questions on an alternate basis.

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		proceed with participation when there are 40 minutes to ask and debate questions.	
5	Mr Leonard le Roux I&AP	Mr le Roux asked why the two Northern Cape sites, were originally rejected?	Ms Ball: In the Scoping Phase, the two sites were considered not feasible and reasonable for Nuclear-1. They would require large transmission corridors all the way to the national grid and extensive infrastructure construction, so they were scoped out based on the transmission integration.
6	Mr Tertius Carinus SANParks – Agulhas Biodiversity Initiative	Mr Carinus said that it is mentioned that there are only two alternatives in South Africa for base load, meaning coal or nuclear energy. He had asked the following question earlier on in the process. This area is located in one of the hotspots for wave energy in South Africa and in the world. Why is wave energy not seen as an alternative for base load?	Mr Stott: Wave energy is certainly something that we are investigating and researching in Eskom but it is not commercially available in the large quantities that are needed in South Africa. It is not available in the range of 4 000 MW that we require from this particular nuclear power station.
7	Mr Tertius Carinus SANParks - ABI	Mr Carinus enquired about the conservation value adding at Thyspunt site and asked if this would be regarded as an offset measure? He feels it cannot be mitigation because there is an impact on the 31 hectares of the nuclear power station.	Ms Ball: You are certainly correct. There are various suggestions and recommendations from our specialists for Eskom to purchase land. Offset measures are an option and have been recommended by some of the specialists.
8	Ms Katrin Pobantz Tesselaarsdal Action Group	Ms Pobantz asked for an explanation regarding the key criteria quantification for the sites. The scores for Thyspunt and Duynefontein have been supplied but not for Bantamsklip. She wanted to know the score for Bantamsklip? Follow up question: She asked if it was a significantly lower score compared to Thyspunt and Duynefontein.	Mr Heydenrych: In the methodology we went through, we did the quantification, after we had already arrived at a conclusion that Bantamsklip was not a preferred alternative for Nuclear-1. So we did not score Bantamsklip. Mr Heydenrych: We did not give Bantamsklip a quantified score. In terms of the qualitative impacts, we know what would occur on the site together with the cumulative impacts of transmission lines – and those would have been

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No	**Name**	**Comment**	**Response**
		Ms Pobantz found it quite strange that Bantamsklip was not scored and would be interested in knowing the scoring.	higher at Bantamsklip than any of the other sites.
9	Mr Danie de Villiers Strandveld Tourism and Conservation Association	Mr de Villiers, as a point of clarity, noted that people have been told that the meeting is for a nuclear power station site and now they were told that Bantamsklip nuclear site has been scoped out using the cumulative impacts of transmission lines. He went on to ask how transmission lines are used for assessment. He wanted to know if the transmission lines were back in the discussion again (through the back door).	Ms Ball: As indicated earlier, the Scoping phase of the three transmission lines has been undertaken. We have the Scoping Reports, we have the list of issues and many of our specialists are working on both the transmission lines and the nuclear sites. We cannot pre-empt the recommendations and conclusions of the transmission line EIAs. That is why the Bantamsklip site was not scored and excluded as an alternative for Nuclear-1. However the assessment has taken note of the specialist reports and integrated them in the report.
10	Mr Danie de Villiers Strandveld Tourism and Conservation Association	Mr de Villiers said that he had skimmed through the report and thinks it is a huge job and Arcus GIBB did a fantastic job, he added that he hoped that they had been paid enough. He then pointed out the following: ❑ The report is really Arcus GIBB's report and is not Eskom's. ❑ Arcus GIBB has to be an independent Environmental Assessment Practitioner (EAP). ❑ All the statements written in the report are supposed to be Arcus GIBB's statements. ❑ There is a problem with some of the statements, which he saw in the report, he can see it is Eskom's statement and not Arcus GIBB's, as an independent EAP. He then highlighted for the purposes of the meeting, the whole issue around positive benefit if a Nuclear Power Station is built at Thyspunt and Bantamsklip –	Ms Ball: There are 24 different specialists, the assessment identified positive benefits associated with the Nuclear Power Station at each of these sites. This has come up time and time again. Please read those specialist studies because that is the origin of the information of potential positive benefits. Arcus GIBB has taken note of the specialists' recommendations and have obviously integrated them into our report.

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		because there is going to be a private conservation area. He pointed out that the whole of Strandveld is full of private nature reserves. There is an implication or impression given that Eskom is now going to do something special. He wanted it noted that they can do it themselves. The 2nd point he wanted to make is that if Eskom does not build a Nuclear Power Station, then they would have to sell the property and others may buy it and do something terrible on the property.	
11	Mr Mike Kantey CANE	Mr Kantey said he would like to follow up directly with Mr Danie de Villiers' contribution by looking, specifically at Slide 34, bullet 3: He read the following into the record of the meeting for the purposes of the issues trail: "Perceived risks associated with the Nuclear incidence could potentially lead to a change in the attitude and behaviour, reliable information and support……" He said what this tells him in the greater languages of literature is that - people have perceptions and Arcus GIBB has the proof. There is a lot of stuff that has been said orally and should be available in the recording. He would like it to be recorded that: ❑ What the consultants are saying is that they have facts and what the public is saying is a perception. ❑ This to him is prejudice of the first order, what the	Ms Ball: I would like to re-iterate that we value all your comments, suggestions and input from many local experts. This particular slide comes directly from the executive summary of the Social Specialist Report., We have paraphrased it, but it comes directly from that report. The point has been noted and I will take it back to the specialist.

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		consultants are telling everyone is that the public are incompetent, unable to make a scientific assessment on the merits of the case ❑ The public are cognitively and perceptually incorrect. We are like retarded children. The consultants are the expects, the scientists and engineers, they will tell the public what is true and the public will never manage to know what is true because they are too stupid. ❑ He suggested that everyone Google " manage public perception" when an industry of managing public perception will be found. This is what the public are witnessing tonight – and this is what they have witnessed previously; it is management of public perception. He, representing many constituents, would like to object to that treatment, from a constitutional perspective. He stated that his question with relation to a word "perceived" had not been answered – he wanted to know what is it doing in the slide, which has Arcus GIBB's signature? There have been learned journal references, volumes and volumes of submissions, and there is a very learned submission from Danie's group (Strandveld Tourism and Conservation Association), extremely learned, and what the consultants are telling us is that everything that is in their submission, with respect, is calculated as "perceived" and not true and that's the	

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		linguistic interpretation. You cannot use that word with respect to submissions made by the public.	
12	Mr Ettiene Fourie SANParks	Mr Fourie directed his question to Eskom and asked how soon do they think they will need Nuclear 2 and 3 – when will these other sites be activated?	Mr Stott: As Ms Ball mentioned in one of the slides, the demand for electricity is growing at greater than 4%. Currently it is around 7% year on year. There is a continuing increase in the demand for electricity. The Government is working on the Integrated Resource Plan (IRP) 2. The previous version IRP1 which was published in December 2009 only went up to 2013. They are currently working on an Integrated Resource Plan for the next 20 years. The release of IRP 2 – expected in June 2010 - would inform us if there would be a need for Nuclear-2 and Nuclear-3. From Eskom's perspective, we believe that Nuclear-2 would be needed two (2) years after Nuclear-1 starts construction. In other words, in the second half of the year, if the Government decides on nuclear, we would have to submit the EIA application for Nuclear-2.
13	Ms Katrin Pobantz Tesselaarsdal Action Group	Ms Pobantz asked if the desalination plant was considered in the initial application by Eskom for Nuclear-1? She also asked if the desalination plant would not be subject to a separate EIA?	Ms Ball: Yes, a desalination plant is required and it has been assessed as part of the Nuclear-1 EIA. All specialists have assessed potential impacts of a desalination plant and in the alternative section you will see that we looked at the impact of brine (concentrated salty water).

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14	Mr Kobus Visser Tesselaarsdal Action Group	Ek wil net oor een ding duidelikheid kry. In die hele voorlegging word daar nie baie aandag gegee aan een ding nie. Julle het daardie punt uitgelaat wat julle op Hermanus gedoen het, naamlik om elke ding 'n punt te gee van wat sy belangrikheid was in die proses van besluitneming. Onder andere het julle daar gesê Marine Envornment het net een gekry waar goed soos sysmologie vier gekry het. My vraag is dit, hoekom is Marine Environment so laag geskat en tweede ding wat ek net vir Eskom wil vra is hulle moet net vir ons kwantifiseer hoeveel ton afval wil julle in die see inpomp en hoe diep wil julle dit in die see inpomp? Is daar 'n Impak studie gedoen op hierdie plek in die see en wat gaan daar gebeur? <u>Translation:</u> Clarification is required on one matter; in this presentation not much attention is paid to a certain issue that was presented at Hermanus, and has been omitted. Each issue was awarded a value according to its importance in the decision-making process. Amongst other things, it was stated that the Marine enviornment received a "1", where other matters such as seismology received a "4". Why is is the Marine Environment so low? Secondly, can Eskom quantify the tons of waste that it will be pumping into the sea and how deep into the sea will this be pumped? Has an impact study been done in terms of where this pumping will take place and what the effect will be?	Die Marine Bioloog het spesifiek na daardie impakte gekyk. Hoekom dit nie net so belangrik ge-ag is as al die ander impakte nie, is omdat al die impakte gemitigeer kan word en dat dit die in Marine Bioloog se opinie is dat al die ander impakte laag genoeg is dat dit aanvaar kan word. Die Marine Bioloog het spesifiek na die omgewings by al drie terreine gekyk. Die materiaal wat uit die pyplyn gaan kom gaan kom, gaan is ongeveer 20 tot 25m onder seevlak wees en sal ten minste 'n kilometre van die hoogwater merk af wees. <u>Translation</u> The marine biologist specifically looked at this impact. The reason why this was not seen as important as all the other impacts, is that all the other impacts can be mitigated and the Marine Biologist is of the opinion that if all the other impacts are low enough, that this will be acceptable. The marine biologist specifically looked at all three alternative sites. The material that will be pumped offshore by pipeline, will be approximately 20 to 25 m below sea level and at least a kilometre from the high water mark. The quantities of soil, accordoing the Marine Biology Assessment, is 10.07 million m^3 spoil from the excavation of the intake tunnel, intake basin, nuclear island and turbine hall.

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15	Mr Tertius Carinus SANParks – Agulhas Biodiversity Initiative	Daar was 'n redelike sterk inset gelewer van landbou se kant af rondom die impak van die Transmissie lyne op die landbou ekonomie. And I did not see that in the Economic Impact. Waar is daardie insette, want dit het 'n redelike groot impak in die Landbou bedryf? Translation: A relatively strong contribution was made by agriculture regarding the impact of the transmission lines on the agricultural economy. This is not reflected in the Economic Impact study. Where are these contributions recorded – there is a relatively big impact on the Agricultural economy.	Soos Me Ball voorheen gesê het, hierdie spesifieke impak studie gaan net oor die Nuclear-1 Kernkragsentrale en nie oor Transmissielyne nie. Elke perseel besig met hulle eie omgewingsimpakstudies vir die Transmissie lyne. Daar is drie impakstudies om te kyk na hierdie terreine, so ek kan nie vir jou 'n antwoord gee voordat daardie Transmissielyne se Impakstudies voltooi is nie. Translation: As Ms Ball stated earlier, this specific impact study is only for the Nuclear-1 power station and not for the transmission lines. Each of the proposed nuclear sites has independent studies that are being conducted for the transmission lines. No answers regarding the outcomes of these studies can be provided at this stage as they are still ongoing.
16	Mr Mike Kantey CANE	Mr Kantey had a follow up question on emissions: ❑ Impact of Strontium 90 on effluent. ❑ Impact in terms of the Becquerels per kilogram per mass. He felt that the information given was irrelevant. He did not want to go through a presentation on what is happening at Koeberg. He simply needs a response in becquerels per kilogram per mass. He added that the data set or the information is not in the report.	Mr Heydenrych: The marine biologist did look at this. Ms Ball: The specialist should have considered this and if the information is not there, we will get the specialist to provide the specific information.

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17	Mr Tertius Carinus SANParks – Agulhas Biodiversity Initiative	Mr Carinus said that he finds one part of this EIA, a grey area regarding Bantamsklip. The site is not important but too sensitive, but it is still potentially number 3. He wanted to know when they will hear from Eskom that the negative impacts associated with Bantamsklip make it unviable because of the length of transmission lines, when it will no longer be considered. He asked what they could do to help them take it off the list of potential nuclear power station sites. He went on to explain that SANParks is on both sides of the Bantamsklip site. So the chances of the area becoming a national park due to its conservation status are significantly higher.	Ms Ball: In terms of our EIA as previously explained, all specialists have found that with mitigation, there are no fatal flaws on any of the alternative sites. It has also been said that Bantamsklip is not the preferred site for Nuclear-1. I cannot comment on Nuclear-2 and -3. Mr Stott: Bantamsklip is still on our list. Duynefontein is also on the list. Thyspunt is also on our list. The two sites in the Northern Cape are still on our list. So those are the five (5) sites, which we have on our list at the moment. The specialist studies have found no fatal flaws on any of the sites (and that is the information we have been given). So there is no reason for Eskom to take any sites off the list.
18	Mr Mick Dalton Agulhas Biodiversity Initiative	Mr Dalton asked for an explanation for the criterion for a fatal flaw. He also asked for an example of a fatal flaw.	Ms Ball: A fatal flaw would potentially be an impact, which could not be mitigated. That is, an impact that would be of extremely high significance, even after mitigation. SANPArks: A transmission line through the Kruger National Park is one example. Ms Ball: A pipeline of iron ore through the Kruger National Park from Mozambique.
19	Mr Danie de Villiers Strandveld Tourism and Conservation Association	Mr de Villiers noted that legislation and the EIA regulations say that cumulative impacts have to be considered. He said that they have heard that if Eskom wants to extend the nuclear power station, they would have to commission a new EIA, and this is because of	Ms Ball: During this EIA phase, in the Terms of Reference (TOR) of specialists, specialists were requested to identify any fatal flaws in the various sites. None of the specialists identified a fatal flaw on any of the sites. We also asked the specialists to look at potential cumulative impacts.

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		cumulative impacts and they are extremely important. Cumulative impacts in this report have been used to decide that Thyspunt is a preferred site. This is stated in the EIA report. However, he feels that cumulative impacts have not been considered when it comes to Bantamsklip and a statement is made that there are no fatal flaws. There could be a fatal flaw at Bantamsklip. It has just been stated that a fatal flaw is a transmission line through the Kruger National Park. Now, there is a proposed transmission line through the Cape Agulhas National Park. That is a fatal flaw. There is no consistency with the use of cumulative impacts. If cumulative impacts were in the TOR, why are cumulative impacts being used to decide that Bantamsklip should not be a preferred site and that Thyspunt should be? It is not a question of pre-empting a decision; it is a concern that cumulative impacts are being used to make a decision and to make a pronouncement. Mr de Villiers said that it just does not make sense to make another pronouncement and say that there are no fatal flaws.	Ms Ball: One of the reasons was that we could not pre-empt the outcome of the transmission line EIA. Ms Ball: Thanked Mr de Villiers and indicated that the point has been noted and the EAP will look into his comments.

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20	Mr Ettiene Fourie SANParks	Mr Fourie asked a process question an enquired when an EIA for a nuclear site as well as transmission lines will be undertaken together in order to make a decision. He feels that one cannot be assessed without the other one, they need to be looked at holistically, to assess the cumulative impacts.	Ms Ball: I can respond in terms of the discussions we have had with the Department of Environmental Affairs (DEA) – basically it would depend on the outcomes of the other processes. That question would have to be directed to the DEA as it is not a question to which I can provide a response.
21	Mr Tertius Carinus SANParks – ABI	Mr Carinus noted that the transmission lines are an issue in the area, whether it is through the park or through the wetlands. The area is inundated with the wetland systems. This has been a concern raised in the area. There have been requests that this issue be dealt with and he said it would also answer Mr de Villiers' point on cumulative impact.	Comment noted.
22	I&AP	Ek wil net terugkom oor wat Danie gesê het. Op die voorlegging op Hermanus het julle gepraat van 10 000 megawatts per site. Met ander woorde as hierdie EIA goedgekeur is, dan is die plek geskik vir 10 000 megawatts. Dis die een ding. Die ander ding is, ons moenie vir onsself 'n sak oor die kop trek nie. Hierdie lyne se EIA is om 'n praktiese rede van die kragsentrale s'n geskei. Ek wil herhaal wat ek in Hermanus gesê het, as die kragsentrale goedgekeur is, hoe gaan ons die lyne stop? <u>Translation</u> I just want to refer to what Danie had said. Regarding the submission it was mentioned in Hermanus that each site would have 10 000 megawatts. In other	Mr Heydenrych: Hierdie aansoek is vir 4000 megawatt, so as hierdie aansoek goekgekeur word mag Eskom slegs 'n 4000 MW Kragsentrale bou. Hulle het wel vir ons gevra terwyl ons met hierdie studie besig was om te kyk of hierdie terreine verdere kragsentrales kan akkommodeer. En dit is wat ons gedoen het. Spesifiek is daarna gekyk watter area op elke terrein moontlik geskik kan wees vir 'n kragsentrale. <u>Translation</u> Mr Heydenrych: This application is for 4 000 MW, so if this gets approved, Eskom is only allowed to build a 4 000 MW Power Station. However, Eskom requested that the studies

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		words, if this EIA gets approved, then this area will be suitable for 10 000 megawatts. To avoid anything being misconstrued, it should be clearly stated that for practical reasons, the EIA for the lines have been separated from the Power Station EIAS. As stated in Hermanus; if a power station gets approved, how will the lines be stopped?	investigate the total area that can accommodate a nuclear power station. This is what was investigated.
23	I&AP	Hierdie terein is klaar geskik vir 'n 10 000 MW kragsentrale. Translation This land is already suitable for a 10 000 MW Power Station.	Comment noted.
24	Mr Mike Kantey CANE	Mr Kantey drew attention to Slide 5, bullet 2 ❑ Please note that there is not a perceived impact – thank you very much for that language. ❑ When the impact of the human health and safety is looked at, this issue is what we would like to record for the benefit of the public record. The Air Quality Report (he has looked at it since 06 March 2010) and its impacts in terms of fallout of Cesium 137 on the wheat fields and dairy farms and the effluent of Strontium 90 and its impacts on marine life – what is being looked at, simply put, is a Nuclear Power Station - it is not a ferrochrome smelter, it is not a coal-fired power station but it is a Nuclear Power Station. ❑ When talking about an environmental impact, it is the environmental impact of nuclear material,	Ms Ball indicated that she cannot comment on the co-operative agreement between the NNR and DEA. Mr Stott: In South Africa, we have a National Nuclear Regulator Act (NNRA) and a National Environmental Management Act (NEMA). In some countries, the two Acts are combined but in South Africa, they are separate. That means that the National Nuclear Regulator and the Department of Environmental Affairs respectively have certain responsibilities. The National Nuclear Regulator is responsible for the evaluation of nuclear and radiological safety. The National Nuclear Regulator (NNR) process, which is still to take place, will have public hearings, which are part of the process. The National Nuclear Regulator bases everything on a safety case. The NNR demands a full

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		namely, by-products of nuclear fission process, that is the environmental impact that you want to investigate and very little else because it is a nuclear power station. When examining the data sets for a Nuclear Power Station, there are 2x major products, effluents, emissions of a nuclear power station, one is Strontium 90 and the other Cesium 137. The expectation is that data sets will be found with hard-core, scientific exposition of Cesium 137 and Strontium 90. This information will be found in Australia, in Germany, in France, in Belgium, but when one comes to South Africa, you find the Scoping out and exclusion of all those impacts. ❑ These data must be shown in an environmental report. This report does not have any of this information. Essentially, a nuclear impact has not been looked at. ❑ It is unscientific, it is untrue and incorrect, it is their perception that what they are telling us is correct. ❑ But what Mr Kantey is saying is, it is his scientific evidential fact from lack of evidence that our perception is true and that this EIA is an unscientific report. He needs to see all the impacts on all the animals, human health, and dairy products, black and white – data sets – science and not perceptions.	safety case before they make a ruling on whether to grant nuclear licensing or not.
25	Mr Etienne van Heerden Birdlife Strandveld	Regarding the “fatal flaw slide”: Ek vra die vraag uit my eie bekommernis oor die voël-lewe. Ek het op “slide” agtien gesien julle noem daar “no fatal flaws”	Mr Heydenrych: Transmissielyne. Die tansmissielyne is ‘n aparte EIA, dit word nie in hierdie EIA bespreek nie.

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No	**Name**	**Comment**	**Response**
		en ek het op 'n webwerf 'n lys gekry van veertien "fatal flaws". Ek gaan hulle nie nou almal lees nie, maar een spesifieke een wat ek wil lees is die 8st punt. "Threatened protected bird species such as the blue crane, stanley's buzzards, large stalks, etc….. an exponential increase in deaths from collisions with the transmission power line." En nou wil ek ook net vra dat in hierdie dokument wat ons gekry het, het ek gesien dat daar 'n studie gedoen is wat die impak van hierdie projek gaan he op die gewerwelde landdiere en ek sien geen verwysing na die voëllewe nie. Daar is geen studie gedoen volgens hierdie rekord nie en wat die impak sal wees nie. Ek weet ook die Endangered Wildlife Trust het uitgebreide werk gedoen op die impak wat kraglyne veral of die "Endangered Birdlife" het en dan ook veral op die "Bluecrane" wat "endangered" is. <u>Translation</u> Regarding the "fatal flaw slide", out of a concern regarding the bird life. It was mentioned on slide 18 that there are"no fatal flaws", but I found a list on a website of 14 "fatal flaws". Not all will be read out, with the exception of point 8. "Threatened protected bird species such as blue crane, Stanley's buzzards, large stalks, etc.... an exponential increase in deaths from collisions with the transmission power line." Also, according to this document that has been received now, it is noted that an impact study has been done on what impact this project will have on vertebra animals. According to these records [the	Mr Heydenrych: Transmission Lines. The Transmission Lines are a separate EIA and are not discussed in this EIA.

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		report] there has been no study done on what the impacts will be on birdlife. The Endangered Wildlife Trust has done extensive work regarding the impacts the Power Lines with have on "Endangered Birdlife" and especially on the "Bluecrane" which is endangered.	
26	Mr Danie de Villiers Strandveld Tourism and Conservation Association	Mr de Villiers commented that again this question is about Arcus GIBB writing a report using Eskom's words. It is about coal *vs* nuclear. ❑ He accepts the statement that power has to be closer to a consumption area, there is no argument about that, as far as he is concerned, because of technological reasons. ❑ When he makes the following statement, the report indicates that a coal-fired station on the coast does not make sense, that is why a nuclear power station is needed. ❑ The fact of the matter is that the electricity consumption in Port Elizabeth is not even 800MW, now Eskom want to build a 4,000MW nuclear power station in the Eastern Cape. Cape Town consumption is not even 2,000MW. ❑ His point is that these Nuclear Power Stations that will be built along the coast are for exporting power up to the economic heartland of the country. If it is important, the power station should be closer to the consumption area and end users. ❑ As an example, the KwaZulu-Natal Coast would make more sense that any other sites here. ❑ He wanted to know why Bantamsklip site is being looked at. Eskom should look at the KwaZulu-	Mr Stott: The demand for energy in the Western Cape has growing and is up to 4 000 MW during the winter peaks. We have those figures from the time (2006) when we experienced problems in the Western Cape and we have monitored that carefully. In the Eastern Cape, the growth is there and all indications are that it is still climbing. This is not linked to Alcan. You can go and talk to any of the business centres in the Eastern Cape. Also we do not have baseload power stations in the Eastern Cape, so we do need to anchor there. The power may be exported to other parts of the country but as the demand grows, the power station would also provide for the Eastern Cape area. We are starting to look further afield in South Africa and if the Integrated Resource Plan requires more nuclear power stations to be built, we will then look for more nuclear sites across the country.

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		Natal coastline ❑ He feels that the only reason that Eskom has for this investigation is that Eskom bought the Bantamsklip site a while ago - in 1960.	
27	Mr Danie de Villiers Strandveld Tourism and Conservation Association	Mr de Villiers asked if the Western Cape is going to get Nuclear 2?	Mr Stott: According to the information that Eskom has, they would be looking at the southern and Western Cape sites for Nuclear 2.
28	Mr Mike Kantey CANE	Mr Kantey referred to the issues trail, Slide 6, 2nd last bullet read together with Slide 61, bullet number 4 (mitigation measures): ❑ Bullet 4 reads "Vaalputs may be considered as a disposal site for High Level Waste in future". One of the difficulties I have is that I also have on my national executive, the Namaqualand Community and they are obviously bitterly opposed to the deposition and dumping of waste in their area. So it does to seem to be pre-empting to be saying that this will occur. ❑ What is the justification for making high-level waste policy? Where is the justification for bullet 4? ❑ People of Namaqualand are, in fact from the United Nations point of view, indigenous people of South Africa. There are also a number of land claims relating to the Namaqualand people. ❑ What is of vital importance in terms of UNESCO values, is to identify in black and white Vaalputs as a site for high level nuclear waste without a single shred of consultation. ❑ It strikes me as a pre-emptive measure and	Mr Heydenrych: Mr Beyleveldt is a representative of NECSA, where he is responsible for the management of Vaalputs waste site. I personally got that information from him. They are considering Vaalputs, however, should they decide to use Vaalputs for high-level waste, that will only happen in many years to come. Should they go ahead, they will have to undertake a Nuclear Regulatory process, which also has a public consultation process.

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		certainly cannot be compatible with the Constitution of South Africa and also the charter of the United Nations. Mr Kantey asked if Mr Beyleveldt had consulted with his neighbours as Mr Heydenrych is making such a statement?	Mr Heydenrych: That is for Mr Beyleveldt to answer.
29	I&AP	In een van die slides het jy genoem dat die ekonomiese positiewe impak 7.85% was. Ek wil net vra wie was hierdie spesialis gewees? Ek wil net weet hoe het hy by die punt gekom? Het hy die negatiewe impak ook bereken? Het hy enigiemand in hierdie area gekonsulteer? Want as ek die nuwe regulasies reg verstaan dan moet jy kyk na die toekomstige potesiaal van 'n gebied ook. So dit maak nie saak of Duinefontein 'n natuurreservaat is en ons nie is nie. Dis nie relevant nie. Ek wil net graag 'n ontleding hê van hoe het hy by hierdie punt gekom. Wat is die positiewe impakte en wat is die negatiewe impakte wat in aanmerking geneem is? Die Overberg se toerisme is in sy "baby shoes". Het hy dit in ag geneem? <u>Translation</u> On one of the slides it was mentioned that the positive impact was 7.85%. Who is this specialist? How did he get to this percentage? Did he also calculate the negative impacts? Did he consult anyone in this area? If the new regulations are understood correctly,	The Economic Specialist is Imani Development. Die resultalte wat hy deurgegee het, is wel gekwantifiseer in terme van geld. Waarna hy gekyk het is in Engels "Bed nights", met ander woorde waarna hy gekyk het is hoeveel akkommodasienagte wel in daardie area effektief verkoop gaan word en hy het wel na negatiewe impakte en positiewe impakte gekyk. Definitief. <u>Translation</u> The results that have been provided have been quantified in terms of money. What he was looking at is called "Bed nights", in other words, how many accommodation nights will be sold effectively in that area. However, he did look at both negative and positive impacts.

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		then a person should also look at future potential of an area. So it does not matter if Duynefontein is a Nature reserve and this [area] is not. It is irrelevant. An analysis of how he reached this conclusion is requested. What are the positive and negative impacts that were taken into consideration? The Overberg tourism is still in its "Baby Shoes". Did he take that in consideration?	 Definitely.
30	Mr Mick Dalton Nuwejaars SMA & ABI	Mr Dalton stated that he cannot logically see how a Nuclear Power Station built at Bantamsklip can improve tourism bed nights, anywhere. It is unimaginable! What other tourism related aspects have been considered?	Ms Ball: I am obviously not a Tourism Specialist but from my understanding as an EAP, I am aware that they looked at business as well as nature-based tourism. During construction, there would be an increase in bed nights, Eskom have seen it in Lephalale area and I have also experienced it personally – the increase in bed nights due to the existence of a power station.
31	Mr Tertius Carinus SANParks - ABI	Mr Carinus noted that it was highlighted earlier in the initial phase that this area has been identified as one of the 5 tourism development nodes in the country and in the Western Cape on the tourism development area. The tourism that we are talking about is a nature based tourism and not business related tourism. That is the difference. Because it is a rural side – it is nature based as opposed to Duynefontein, which is business related tourism. Thyspunt and Bantamsklip are similar in nature – they offer nature-based tourism.	Ms Ball: This is correct; the specialist has noted this and has discussed it in the report.

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32	Ms Katrin Pobantz Tesselaarsdal Action Group	Ms Pobantz referred to Slide 18, bullet 2 that states that all potential negative impacts can be mitigated. She wants to know, can the specialists say that? Mr Kantey added that the statement is logically unscientific. Perhaps it should read as "all potential negative impacts that we have assessed could be mitigated".	Ms Ball: We took the general consensus from all specialists. Point taken and noted.
33	I&AP	Ek het net 'n vraag rondom die Sysmologiese gedeelte van die voorlegging. Daar staan spesifiek dat rondom Tuyspunt en dit geld nou vir Bantamsklip en vir Duynefontein ook. Daar is sekere sysmologiese studies wat nog gedoen moet word. Dit sal twee tot drie jaar neem om hierdie studies afgehandel te kry. My vraag is net, hoe kan hierdie ding goedgekeur word en daar begin bou word in 2011, maar die studies gaan eers in 2013 voltooi wees? <u>Translation</u> A question regarding the Seismology part of the presentation; It was stated that around Thyspunt; and this applies to Bantamsklip and Duynefontein as well, there are certain seismology studies that still need to be done. It will take two to three years before these studies will be completed. How can this study be approved, building start in 2011, if these studies will only be completed in 2013?	Mr Stott: Those are results of studies that have been done over decades. All the power stations have to meet the seismic criteria. The more you have to design for seismic criteria, the more expensive the power station becomes. We want additional studies to refine that and to ensure that it is not over-designed and does not cost significantly more than what a standard nuclear power station should cost. So from Eskom's perspective, we are optimising on the plant design. Ms Ball: One of the key requirements within the National Environmental Management Act (NEMA), is that DEA requires sufficient information to assess and make an informed decision. For the purposes of this EIA, the specialists considered these results to be sufficient to be able to assess the potential impacts and so does Arcus GIBB.

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34	Mr Rodney Anderson Hermanus Ratepayers Association and Overstrand Conservation Foundation	Mr Anderson referred to Slide 5: He notes that there is vigorous opposition to the statements on impacts of tourism. It is not apparent that the studies took into account the true impact of what we perceive as the lifeblood of the area, eco-tourism, and nothing else. He fails to see how there can be an increase of 8.75% in tourism during construction.	Ms Ball: Thank you for those comments. It is precisely what we need from the public. The point is noted and will be checked with the specialist.
35	Mr Mike Kantey CANE	Mr Kantey then drew attention to the Thyspunt area: Slide 36 bullet 4 ❑ Bullet 4 is amazing; "a zero potential impact is predicted". ❑ There is on record a petition signed by 6,000 global surfers with the Billabong's permission. ❑ Jeffrey's Bay is an international site for supertubes, and there is a supertubes foundation in Jeffrey's Bay where he works. ❑ There are signatures of world champions and the number 1 contender. ❑ Mr Kantey is having a meeting with Billabong to discuss this issue because they see their sponsorship and brand directly threatened by the proposed Nuclear Power Station. ❑ Jeffrey's Bay lives and dies on Billabong. Worldwide champions surf in Jeffrey's Bay. What the consultants and specialists did in Jeffrey's Bay is unknown to them.	Points noted.

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36	Mr Danie de Villiers Strandveld Tourism and Conservation Association	Mr de Villiers would like to request Arcus GIBB to give real attention to what is being suggested and not only put our questions in the Issues and Response Report. He then directed a question to Eskom: Reading through the report, he came across a figure, which was a cost of a power station. The figure was about R180b. Mr Moroga made a statement a while ago of the amount of R400b. One of the reasons was apparently that there is a licence fee that has to be paid. He asked for some clarity on what the actual cost of building the Nuclear Power Station would be.	Ms Ball: Yes, GIBB will attempt to make all changes in track changes in the report to make it easier for the reader to see the changes made on the draft report (Draft EIR). He was not referring to the nuclear licensing, I think Mr Moroga was referring to the cost of transfer of technology, because the nuclear energy policy that the government approved in 2008 talks about local manufacture of components. If a country does not already have the knowledge, it will have to buy the design and manufacturing intellectual property and knowledge. So the cost of building a nuclear power station is dependent on whether SA just wants to buy one nuclear power station or a fleet of nuclear power stations, and whether SA also wants to buy the design and manufacturing intellectual property and knowledge. The choices in this regard will determine the eventual cost of each nuclear power station..
37	I&AP	An I&AP enquired about decommissioning and asked when is decommissioning going to commence for the Koeberg Nuclear Power Station? Are they preparing to return the entire development to green fields situation? How do you deal with the entire mass of the unit, which is substantially radiated?	Mr Stott: Currently, Koeberg is 25 years old. Its original design life was 40 years. However, as with most power stations throughout the world, one looks at what the economic life is and is it feasible to extend it. So, Eskom is currently looking at extending the economic life of the Koeberg Nuclear Power Station. Eskom does not intend to take it back on the green fields as Eskom may want to build another nuclear power station on the same site. Regarding the decommissioning process itself, there are power stations that have been decommissioned in the world and one can use that information from experience of other countries.

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			An important factor is that the nuclear fuel has been taken out so the remaining radioactivity is in the steel vessels, piping, etc, which is mostly cut out and disposed of. The cutting up is mostly done remotely by remote machines, that is all under the control of the national Nuclear Regulator, looking after the radiological safety of all individuals working during the decommissioning phase.
38	I&AP	An I&AP wanted clarification on the decommissioning issue. It is recognised that Koeberg Nuclear Power Station is ageing, I saw a dataset of radionuclides (i.e. radioactive materials) which shows that they have increased quite substantially over the past 25 years? This I&AP wanted information on this issue. Follow up question from Mr Kantey: What is being discussed here is becquerels per annum in release from the stats and those from liquid effluents. Figures in the Cape from APS (Laboratory) report, have been seen and these figures are going up from 10^4 for Cesium, Strontium, going up to 10^6, 10^7 and have almost doubled and never coming down below that level. We are talking about becquerels, we are not talking about the impact, and we are talking about effluent and emissions.	Mr Stott: The actual releases have not increased. The National Nuclear Regulator (NNR) has changed the methodology of how to calculate the impact of the releases. The first time they changed it, it increased the value slightly, the second time they changed it, the value decreased slightly. Their limits are 250 microSieverts (that is the radiation dose per individual). At Koeberg, our target is 30 microSieverts, so almost one tenth of that. We have never ever been above 20 microSieverts. At the moment it is averaging less than 10 microSieverts. So the impacts of our releases have been kept very low even though the plant has been in operation for 25 years. Mr Kantey is correct in that the NNR has placed something called the annual authorised discharge quantities and they do that for all radionuclides. We are not allowed to go above those levels, but for operational purposes, we are allowed to vary that and we do vary that. Some years depending if we had double outage, i.e. both units are on outage, for refuelling and maintenance, the levels will go up and in some years, the levels will come back down again.

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		He went on to say that is interesting that the levels do not come down again.	
39	Ms Katrin Pobantz Tesselaarsdal Action Group	Ms Pobantz stated that when the cooperative agreement between the NNR and DEA was discussed, she understood that the safety issues fall on the shoulders of the NNR. She asked if there will be public hearings and not public participation process which is similar in the EIA? She added that if there were concerns about, e.g. the transport of nuclear waste from Bantamsklip, etc potentially who do people ask, how does the public find out what routes they have assessed, how do they get to comment on the process and understand and find out necessary information because this is a huge concern for everyone (human health and safety being assessed). This appears as a huge gap now that people don't know if they will have an opportunity to participate like they have done in the EIA process. She asked where does everyone stand. Ms Pobantz feels that this EIA process is actually incomplete because answers are unavailable because they will be shifted from the EIA consultants to the National Nuclear Regulator. The public have been told that the human health, safety issues are for the NNR to assess. All comments that are raised are shifted to the NNR and no one knows how the NNR is going to deal with that. She wanted to know how the EIA can be considered complete.	Mr Stott: The National Nuclear Regulator Act (NNRA) refers to public hearings, but the National Nuclear Regulator (NNR) has never had public engagements because the original license for Koeberg did not have such a requirement. So at this stage it is not clear what would be the nature of the public engagement. From Eskom's side we have already requested the National Nuclear Regulator (NNR) to consider how they will engage the public because it is in Eskom's interest to have this information moving forward. Ms Ball: I cannot answer on behalf of the NNR – your point has been noted.

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No	**Name**	**Comment**	**Response**
40	I&AP	Ek wil net terugkom na die kaart wat jy vir ons gegee het oor die "site" self van die geskiktheid, as ek reg onthou, was dit nie 70 hektaar gewees by Bantamsklip nie, en daar moet my vriende in Natuur bewaring my help. Ek kry die gevoel die persepsie word hier geskep dat Natuurbewaring begin ander kant die teerpad, maar hierdie kant van die teerpad waar die kragsentrale gebou word, daar kry die spesialiste 'n stuk op elke terrain; 'n netjies groot genoeg gebied waar daar niks is wat hulle pla nie? <u>Translation</u> Referring to the map presented for the site itself and its suitability. It showed 70 hectares of Bantamsklip, and Nature Conservation should confirm this. The perception is created that nature conservation only starts on the other side of the tar road, but on this side where the power lines gets build the specialist finds on each site, a neat piece just big enough where there is nothing that will bother them?	Each of specialist areas sensitivity maps was overlaid by Arcus GIBB and only then did GIBB come up with the least sensitive area.
41	Mr Mike Kantey CANE	We are talking about regulation and legal considerations: ❑ The problem from a legal perspective is the language of no-show stoppers, insufficient information, scoped out, part of the co-operative agreement, etc. ❑ When it comes to the substantive issues, I am really arguing now, and anticipating a law-suit, but this possibly might even go to the constitutional court.	All points noted.

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		❑ If you look at the structure of the EIA report from its structure at its inception and execution, you cannot really stand here and blame ACER, you cannot even blame Arcus GIBB and even Eskom cannot be blamed. ❑ It is the way in which everything has been passed, even the regulation. You certainly have to trust the infinite wisdom of the legal experts and lawyers. ❑ Everything that is of vital importance that should enable a person to make an informed judgement has been scoped out. ❑ Every application for the quantitative data sets that can make an informed decision around human health, the most vital form of life that everyone can ever think of, every possible question, waste, anything that has a bearing on a matter, in a legal perspective, has been scoped out. ❑ Even the type of reactor, has been scoped out. ❑ Legally, anything that one would need to know for an informed decision and representation and submission has been scoped out ❑ What this leaves us with (I am saying this with the greatest concern from a constitutional point of view and a popular democracy), everything that matters has been scoped out. It leaves us, ladies and gentlemen, and I say this with a warning that, it leaves us with no redress, whatsoever, no access to information, unless under PAIA (even they could refuse us information for reasons of business confidentiality) we see business concerns being raised above tourist concerns.	

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		❑ So, it seems to me that the regional economies of Thyspunt, Kouga Municipality and fragile economies of the Thyspunt and Bantamsklip, etc. are being thrown to the docks for higher business deals which are beyond the border of South Africa. ❑ This is something that must be recorded, this is a way for people of South Africa to say we have had enough of exploitation, we have had enough of oppression, had enough of silence, we want the facts on the table, otherwise we go to the constitutional court again.	
42	I&AP	Soos mense nou al genoem het, 'n baie belangrike punt, is daar persone wat ons noem vissermanne wat glad nie ingelig word oor sulke gebeurlikhede nie en wat glad nie weet wat dit alles behels om 'n kragstasie opgerig te kry nie. Soos ek byvoorbeeld, wat in Buffelsbaai bly, kan ek vir u sê daar was nie inligting op die grond vir die eenvoudige mense om te besef wat dit presies behels nie. Daardie visserman wat elke dag uitgaan see toe om vir sy gesin te sorg, word nie gesê die afvalstowwe word in die see gestort en oor 'n tydperk gaan daar nie meer visse wees om te vang vir jou gesin nie. Ek kan ook nie onthou dat enige van Eskom se mense ons presies kom inlig het daaroor nie, indien daar 'n kragstasie in ons omgewing opgerig gaan word. <u>Translation</u> A very important point that has been mentioned by others; people that are known as "fishermen" who have not been informed at all about these	Ms Ball: The advertisements were placed in various national, regional and local newspapers. Ms Shinga was requested to provide a list of publications that were used to announce the availability of the Draft EIR to the I&AP after the meeting. The marine specialist has proposed a number of recommended monitoring and evaluation programmes aimed at mitigating the impact of the Nuclear Power Station on the marine environment. These measures are: • <u>Monitoring of thermal pollution</u> At each site both the benthic and intertidal habitats should be sampled before construction, after construction, but before the onset of the operational phase, annually during operation and then for a minimum of five years after closure of the power station. Both benthic and intertidal sites predicted to be impacted (i.e. based on oceanographic modelling of the release plume) should be paired with comparable control sites. If suitable sites exist

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		developments and who know nothing about what the construction of a power station entails. This is applicable to individuals staying at Buffelsbaai where there has been no information made available. The fisherman that goes to sea everyday to provide for his family has not been told about the waste that will get dumped into the sea. This will have the effect that over a long period of time there will be no more fish to catch to provide for families. There is no recollection of any member of Eskom consultants that came to inform the communities that there might be a power station built in the area.	both sheltered and exposed rocky shores should be considered. At Bantamsklip special note should be taken of the abalone *H. midae* and dedicated surveys should be conducted to assess the densities of this gastropod. At Thyspunt surveys should be conducted to monitor for the presence of egg capsules of the Chokka squid *Loligo vulgaris.* Note: the use of indicator species is not recommended as the densities of marine invertebrates often varies dramatically through time, while changes in overall community composition are far more relevant. While sampling need not be repeated in different seasons it is important that annual monitoring take place at the same time each year. • <u>Monitoring of spoil disposal sites</u> Prior to disposal of spoil at sea, benthic communities at the disposal site, and in the areas predicted to be affected by spoil in the first ten years following disposal (Prestedge *et al.* 2009a) should be sampled for at least two years. Following disposal of spoil, these sites should be sampled at the same time of the year as the initial samples for at least ten years. Importantly, communities establishing on the actual spoil site should be monitored to establish to what extent these communities recover through time. <u>Monitoring of radiation emissions</u>

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			An environmental surveillance programme should be implemented to monitor for radiation emissions in the marine environment. This would form part of the strict requirement of the National Nuclear Regulator Act. The design of such a programme is outside our area of expertise, but is likely to follow the Eskom Radiation Protection Environmental Surveillance Standard. Organisms which we recommend for inclusion in such a monitoring programme are the abalone *H. midae* at Bantamsklip and the chokka squid *Loligo vulgaris* at Thyspunt, as both are consumed commercially. • <u>Monitoring of sewage effluent</u> A routine monitoring programme of water exiting the cooling water outlets should be established to ensure that sewage effluent entering the sea meets the standards set by the Department of Water Affairs and Forestry. • <u>Monitoring of organic, bacterial and hydrocarbon pollution resulting from polluted groundwater</u> **Should pollution of groundwater be detected, monitoring of seawater quality in the area of groundwater discharge should commence immediately to ensure the safety of public health.** • <u>Monitoring of African penguin (*Spheniscus*</u>

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			demersus) populations on Dyer Island A long-term monitoring programme should be established to track populations of African penguins on Dyer Island near the Bantamsklip (Prof L. Underhill, University of Cape Town, *pers comm*.). Monitoring should take place before, during and after construction. Such monitoring should take place in conjunction with the penguin monitoring programme which is currently underway on the island and is run by the Avian Demography Unit at the University of Cape Town.
43	Ms Katrin Pobantz Tesselaarsdal Action Group	Where does Arcus GIBB's work stop?	Arcus GIBB's work ends at the submission of the final EIA Report to the DEA and to the public domain. The DEA then takes some time to review the report and then the EIA communication/ correspondence ends when we notify Interested and Affected Parties (I&APs) of the DEA's decision.
44	Ms Katrin Pobantz Tesselaarsdal Action Group	Ms Pobantz said that something has been mentioned about the peer review by the Department of Environmental Affairs. She asked if Arcus GIBB would have access to that information from DEA? Will DEA make information available on what the peer reviewers have said to Arcus GIBB? If Arcus GIBB had access, it would add another dimension to the EIA report.	Ms Ball: I must state that it is not for all the EIAs that the DEA appoints a peer review panel. This is the second EIA where DEA has appointed a review panel, the first one being PBMR DPP EIA. DEA is the authorising body that will be advised by their appointed review panel. Arcus Gibb would not have access to the report prepared by the DEA peer review panel.

APPENDIX 2: PRESENTATION OF DRAFT EIA REPORT

Size of the Hermanus Public Meeting presentation 1,434KB
Size of the Pearly Beach Public Meeting presentation 1,501KB
Size of the Bredasdorp Public Meeting 1,500KB

All presentations can either be downloaded from the following websites:

- Eskom's website: www.eskom.co.za/eia under the "Nuclear 1-Generation" link
- Arcus GIBB website: http://projects.gibb.co.za/ under the "Nuclear 1 EIA" link

or can be requested from ACER (Africa) at 086 010 4958 or by notifying Bongi Shinga at bongi.shinga@acerafrica.co.za or nuclear1@acerafrica.co.za

APPENDIX 3: ATTENDANCE LIST

Surname	First Names	Title	Co/Org	Hermanus Meeting 23 Mar 10	Pearly Beach Meeting 24 Mar 10	Bredasdorp Meeting 25 Mar 10
Ackerman	Valerie	Mrs	Interested and Affected Party		Attended	
Alexander	Debbie	Mrs	Interested and Affected Party		Attended	
Anderson	Rodney C	Mr	Hermanus Ratepayers Association			Attended
Ball	Jaana-Maria	Ms	Arcus GIBB	Attended	Attended	Attended
Barnard	Gerrie & Lydia	Mnr & Mev	Interested and Affected Party		Attended	
Boshoff	Sophie	Mrs	Interested and Affected Party			Attended
Brindeau	Marc	Mr	Interested and Affected Party		Attended	
Brindeau	Alice	Mrs	Interested and Affected Party		Attended	
Burden	Rina	Mrs	Interested and Affected Party		Attended	
Carinus	Tertius	Mr	Agulhas Biodiversity Initiative (ABI)			Attended
Coetzer	Theo	Mr	Interested and Affected Party		Attended	
D'Alton	Michael & Jane	Mr & Mrs	Nuwejaars Wetland Special Management Area			Attended
de Kock	Johan	Mnr	Interested and Affected Party		Attended	
de Villiers	Carin	Ms	Eskom Holdings Limited	Attended	Attended	
de Villiers	Rocco	Mr	Interested and Affected Party			Attended
de Villiers	Ebeline	Ms	Interested and Affected Party			Attended
de Villiers	Danie	Mr	Strandveld Tourism & Conservation Assoc			Attended
du Plessis	Pierre	Mnr	Napier Landbouvereniging			Attended
During	Hardy CG	Mnr	Interested and Affected Party		Attended	
Evert	Dion	Mr	Interested and Affected Party		Attended	
Fourie	Ettienne	Mr	Agulhas National Park (SANP)			Attended
Fryer	Rob	Mr	Overstrand Conservation Foundation	Attended		
Fuchs	Michael & Susanne	Mr & Mrs	Klein Paradijs Country House		Attended	
Greeff	Gert	Mr	Eskom Nuclear Sites	Attended	Attended	Attended

Surname	First Names	Title	Co/Org	Hermanus Meeting 23 Mar 10	Pearly Beach Meeting 24 Mar 10	Bredasdorp Meeting 25 Mar 10
Groenewald	Amelda	Mrs	Interested and Affected Party			Attended
Groenewald	Karen	Mrs	Interested and Affected Party			Attended
Hayward	Bertus	Mr	Cape Agulhas Municipality			Attended
Hendry	Eugene	Mr & Mrs	Pearly Beach Ratepayers Assoc.		Attended	
Henrici	Gerald Willem	Mr	Pearly Beach Conservation Society		Attended	
Herbst	Deidre	Ms	Eskom Generation	Attended	Attended	
Heydenrych	Reuben	Mr	ARCUS GIBB	Attended	Attended	Attended
Heyns	J	Mr	Interested and Affected Party	Attended		
Hoekstra	Tierck	Mr	Natuurbewarings Raad	Attended		
Jephson	Amanda	Ms	Save Bantamsklip / Strandveld Tourism & Conservati		Attended	
Joubert	Pieter	Mnr	De Kelders Belastingbetaalers Verg		Attended	
Kantey	Mike	Mr	Coalition Against Nuclear Energy	Attended		Attended
Kleinhans	Harry	Mr	Interested and Affected Party		Attended	
Kriel	AF	Mr & Mrs	Interested and Affected Party		Attended	
le Roux	Leonard	Mr	Interested and Affected Party			Attended
Leber	Sue	Ms	Save Bantamsklip Organisation	Attended		
Lockyer	Lyn	Ms	Interested and Affected Party	Attended		
Lombardi	Giorgio	Mr	Vogelgat Nature Reserve	Attended		
Manson-Kullin	Lars & Helen	Mr & Mrs	Interested and Affected Party		Attended	
Mbusi	Mandla	Mr	Eskom Holdings Limited	Attended	Attended	Attended
Mc Neil	Angus & Linda	Mr & Mrs	Interested and Affected Party	Attended		
Miller	PK	Dr	Interested and Affected Party	Attended		
Miller	Pat	Dr	Hermanus Botanical Society	Attended		
Mills	Cherry	Mrs	Interested and Affected Party	Attended		
Muller	S	Mr	Overstrand Local Municipality	Attended		
Myburgh	Francois	Mr	Overstrand Municipality		Attended	
Otto	Hennie	Mr	Dyer Island Conservation Trust		Attended	

Surname	First Names	Title	Co/Org	Hermanus Meeting 23 Mar 10	Pearly Beach Meeting 24 Mar 10	Bredasdorp Meeting 25 Mar 10
Outhewaite	John	Mr	Interested and Affected Party		Attended	
Pietersen	Toni	Mrs	Facilitator	Attended	Attended	Attended
Pobantz	Katrin	Ms	Tesselaarsdaal Action Group	Attended		Attended
Pulker	Gaynor	Ms	Interested and Affected Party	Attended		
Ravenscroft	Mike	Mr & Mrs	Kleynkloof Private Nature Reserve		Attended	
Roelofse	Johan & Carla L	Mnr & Mev	Interested and Affected Party		Attended	
Schwegler	Walter	Mr & Mrs	Heidehof Provincial Nature Reserve		Attended	
Schwegler	Mathia	Ms	Strandveld Flora CC		Attended	
Slabbert	Paul	Mr	Strandveld Tourism & Conservation Assoc	Attended		
Smith	Kenneth & Elizabeth	Mr & Mrs	Interested and Affected Party		Attended	
Smith	KK	Mr	Interested and Affected Party		Attended	
Springer	St John	Dr	Interested and Affected Party	Attended		
Stemmet	Danie	Mnr	Interested and Affected Party		Attended	
Stott	Tony	Mr	Eskom Generation	Attended	Attended	Attended
Stroebel	Liana	Me	Agri Mega / Overberg Distriks Landbou Verg			Attended
Swart	Helena	Mrs	Aida		Attended	
Theron	Mervin	Mr	Eskom Holdings Limited	Attended	Attended	Attended
Toerien	D	Mr & Mrs	Interested and Affected Party		Attended	
van der Velden	J	Mr	Greater Hermanus Assoc for Commerce & Tourism	Attended		
van Heerden	Etienne	Pastor	Birdlife Strandveld			Attended
Visser	Kobus (IJ)	Mr	Interested and Affected Party	Attended		Attended
Warner	Lyn	Mrs	Interested and Affected Party	Attended		
Welsh	Eleanor	Ms	Save Bantamsklip Organisation	Attended		
West	David Michael	Mr	Eskom Holdings Limited	Attended	Attended	Attended
Williams	John	Mr	Save Bantamsklip Organisation	Attended	Attended	

ESKOM HOLDINGS LIMITED

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR A PROPOSED NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE DEA REF. No.:12/12/20/944

EIA Phase Public Meeting:
Review of Draft Environmental Impact Report

March / April 2010

Slide 1

PROPOSED AGENDA

1. Sign attendance register and discussion with team: 17:00 – 17:50
2. Welcome and introductions: 18:00 – 18:10
3. Presentation of EIA and EMP findings: 18:10 – 19:00
4. Discussion: 19:00 – 19:50
5. Way forward and close: 19:50 – 20:00

Slide 2

MEETING CONDUCT

- Please wait for the discussion session to ask questions
- Introduce yourselves prior to asking a question and indicate your specific interest
- You are welcome to ask the question in your mother tongue. Presentations will be in English
- One person at a time
- Work through the facilitator
- Show respect
- Focus on the issue not the person
- Be constructive
- Agree to disagree

Please switch off all cell phones!

Slide 3

MEETING OBJECTIVES

- The focus of the meeting is to provide an opportunity for Interested and Affected Parties (I&APs) to comment on the findings of the EIA and the Draft Environmental Impact Assessment Report (EIR)
- Provide an opportunity for I&APs to seek further clarity on the proposed project, the EIA phase and the Draft EIR
- Provide I&APs with an opportunity for interaction with the EIA team
- Recording of issues - the proceedings will be recorded and used to compile meeting minutes. Comments will be included in the Issues and Response Report (IRR) and changes will be made to the Final EIR, where necessary

Slide 4

KEY ISSUES

- Some people are opposed to and others are in favour of a nuclear power station at Bantamsklip, Thyspunt and Duynefontein
- Concerns about the potential impacts on human health and safety
- Local residents share a deep-felt connection to the area and have a strong “sense of place”
- A power station could potentially be unsightly
- Tourism is linked to conservation and preservation of the coastline

KEY ISSUES

- Marine life could potentially be adversely affected by altered sea temperature and turbulence caused by inflow and output of sea water to the plant
- Concern that commercial and recreational fishing may be negatively impacted
- Light pollution
- Concerns about potential drop in property values
- Concern about cost of constructing a power station
- Some people expressed a lack of trust in the EIA
- Storage of hazardous waste
- Renewable (‘green’) energy (e.g. wind, solar) vs. nuclear

PROJECT MOTIVATION

- Increasing demand for electricity (> 4% growth per annum)
- Projected requirement for more than 40 000 MW of new electricity generating capacity over the next 20 years
- In SA only coal and nuclear power are solutions for base load generation, while gas turbines, hydroelectric power stations and pumped storage schemes are used for peaking and emergency electricity generation

PROPOSED ACTIVITY

- Eskom proposes the construction, operation and decommissioning of a conventional nuclear power station and associated infrastructure either in the Eastern or Western Cape
- A nuclear power station of the Pressurised Water Reactor (PWR) type technology e.g. Koeberg Power Station
- The transmission power lines are subject to separate environmental authorisation processes

TRANSMISSION (TX) LINE EIAs

- Bantamsklip – Scoping phase has been extended to include Multi-stakeholder Workshops and additional public consultation. Revised Draft Scoping Report will be made available for public comment
- Thyspunt and Duynefontein – Scoping Report accepted by Authorities and EIA phase has commenced

PROJECT BACKGROUND

- The power station and directly associated infrastructure will require approximately 31 ha
- The footprint assessed makes provision for the potential future expansion of a power station to 10 000 MW or the maximum carrying capacity. Separate EIA required for any further expansion beyond 4 000 MW
- The proposed nuclear power station will include nuclear reactor, turbine complex, spent fuel, nuclear fuel storage facilities, waste handling facilities, intake and outfall pipelines, desalinisation plant and auxiliary service infrastructure (e.g. access roads, OCGT plant, HV yard, visitor centre)

PROJECT BACKGROUND

- Should the proposed project be authorised, it is anticipated that construction of the station could commence in 2011 with the first unit being commissioned in 2018 (optimistic)
- Construction period – 7 to 9 years
- Labour requirements:
  - Construction – 7 700 persons
  - Operation – 1 400 persons
- Construction and operational access routes to site - 22 m wide, tarred
- Normal (sedans), heavy (buses, trucks) and exceptionally heavy vehicles (42 m x 8.23 m max.)
- Peak construction vehicle trips: 828 morning and 945 evening

ENVELOPE OF CRITERIA

- Detailed description of proposed nuclear plant is not available, as preferred supplier has not been selected
- Approach used has been to specify enveloping environmental and other relevant requirements, to which the power station design and placement on site must comply
- Enveloping criteria represent the most conservative parameters associated with the various plant alternatives within the available Generation III PWR technology

APPLICATION

14 DAYS

ACKNOWLEDGEMENT OF RECEIPT

ACCEPT

DRAFT SCOPING REPORT

30 Days

SUBMIT FINAL SCOPING REPORT AND PLAN OF STUDY FOR EIA

30 DAYS

AUTHORITY RESPONSE TO SCOPING PHASE

ACCEPT

Application submitted to DEA (May 2007) and amended in July 2008

Mid 2009, Eskom considers amending application to include more than one power station. Eskom subsequently decided not to pursue the amendment

DEA approved the Scoping Report - November 2008

Plan of Study (PoS) for EIA was made available for two rounds of comment

DEA approved Final PoS for EIA - January 2010

Scoping phase of the EIA process complete

EIA PROCESS

60 Days

SUBMIT EIA REPORT AND DRAFT EMP

60 DAYS

AUTHORITY RESPONSE TO EIA REPORT

45 DAYS

DECISION

10 DAYS

GRANT/REFUSE AUTHORISATION

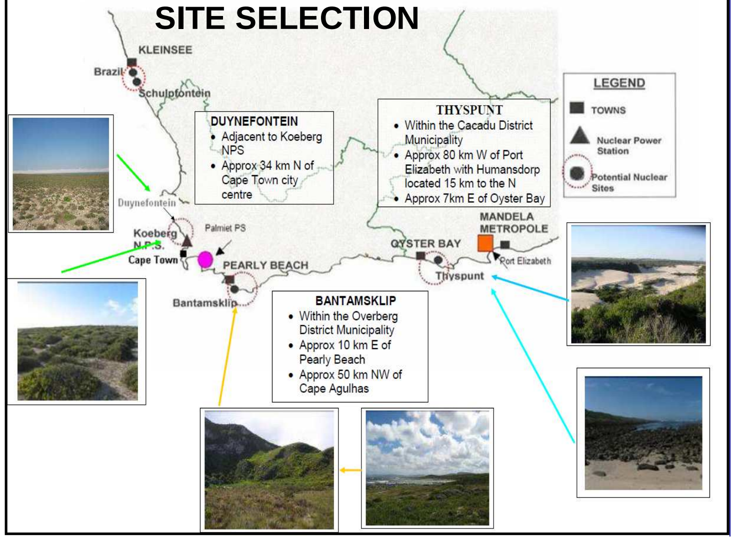
30 DAYS

APPEALS

Current position in the EIA process

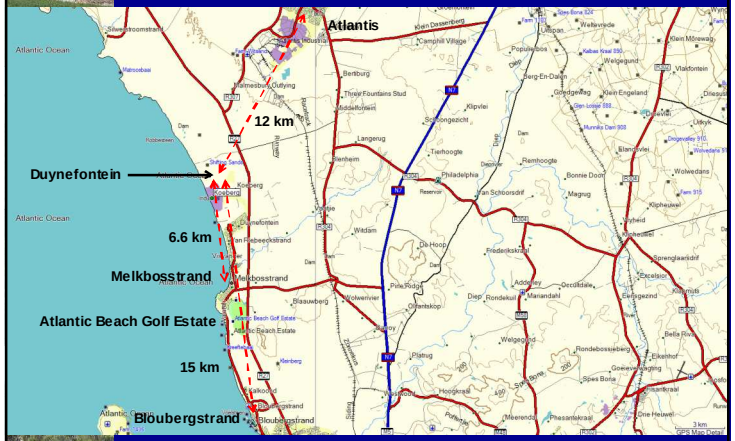
In line with Eskom's intention to investigate the potential development of up to 20 000 MW of nuclear power generating capacity - application for the second nuclear power station may be submitted soon after the submission of the Final EIR for Nuclear-1

SITE SELECTION



LOCALITY

LOCALITY



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ASSESSMENT OF IMPACTS

- **The potential impacts assessed were based on:**
  - Issues identified by I&APs during the public participation process (PPP)
  - Issues identified by specialists through research
  - Experience of relevant specialists with projects of a similar nature or in a similar environment
  - Consultation with local specialists
  - Environmental resources and conditions identified during site surveys

Slide 18

METHODOLOGY

- Independent specialists assessed potential positive and negative impacts with and without mitigation
- According to the specialists:
  - all potential negative impacts can be mitigated
  - there are no fatal flaws at any of the alternative sites

Slide 19

SPECIALIST STUDIES

- **Physical Impacts**
  - Geology and geological risk
  - **Seismological risk**
  - Geo-hydrology
  - Geotechnical characteristics
- **Biophysical Impacts**
  - **Dune geomorphology**
  - **Flora**
  - **Fauna (Invertebrate and Vertebrate)**
  - Hydrology
  - **Freshwater ecosystems (wetlands)**
  - Oceanographic conditions
  - **Marine biology**
  - Air quality
  - Assessment of the 1:100 year floodline

Slide 20

SPECIALIST STUDIES

- **Socio-economic Impacts**
  - **Social impacts**
  - **Economic impacts**
  - Noise
  - Visual
  - **Heritage and cultural resources**
  - Waste
  - **Tourism impacts**
  - **Agriculture**
  - Transport
- As per the NNR / DEA co-operative agreement, a number of specialist studies related to human health risk and safety were commissioned and included in this EIR for information (4 studies)

SPECIALIST STUDY RESULTS

- **Seismological Risk**

Seismic studies indicate that the design basis for the respective sites in terms of peak ground acceleration values (PGA) are as follows:

- Duynefontein – PGA ~0.30 g
- Bantamsklip - PGA ~0.23 g
- Thyspunt - PGA ~0.16 g

SPECIALIST STUDY RESULTS

- **Impacts on Dune Geomorphology and associated geo-hydrology (landforms, sand and water movement)**
  - Groundwater does not 'daylight' at **Duynefontein** and **Bantamsklip** sites: access roads and transmission lines can be built across the mobile dunes
  - The interaction between dune systems and wetlands is complex at **Thyspunt**, since groundwater 'daylights' in many inter-dune areas
  - Haul roads and conveyor belts through Oyster Bay dunefield at **Thyspunt** between the nuclear power station and the HV yard, may cause more significant dune geomorphology impacts than at the other two sites

SPECIALIST STUDY RESULTS

- **Impacts on Flora (plants)**
  - **Bantamsklip** will experience the least potential negative impact on plant communities and species - the ecosystems on this site are fairly common along this section of coastline
  - **Thyspunt** has the greatest diversity of vegetation communities, including extensive and highly sensitive wetlands

SPECIALIST STUDY RESULTS

- **Impacts on Wetlands**
  - Development of a nuclear power station at **Duynefontein** is unlikely to result in any unmitigable, highly significant negative impacts on wetlands
  - Development of the proposed nuclear power station at **Bantamsklip** would not be associated with any unmitigable impacts to wetland systems
  - **Thyspunt** wetland systems are complex and potential negative impacts could occur without appropriate mitigation

SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Vertebrates (mammals and birds)**
  - Amount of land that is not of high faunal sensitivity at **Duynefontein** is more than sufficient for the nuclear power station
  - At **Bantamsklip** the nuclear power station could have significant negative potential impacts, without mitigation, because of the impacts on faunal habitats within the footprint
  - At **Thyspunt** a nuclear power station would have significant potential negative impacts, without mitigation, because of the potential impacts on faunal habitats within the footprint, the development of two access roads and proposed infrastructure across the dunefield

SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Invertebrates (insects)**
  - Potential impacts on terrestrial invertebrate communities are similar for all alternative sites, with site-specific differences
  - **Duynefontein:**
    - None of the butterflies are endangered or endemic
    - Low to very low overall insect sensitivity
    - New species of ant found is regarded as a generalist (likely to be found on other areas of the site)

SPECIALIST STUDY RESULTS

- **Impacts on Terrestrial Invertebrates**
  - **Thyspunt** has the highest butterfly diversity and conservation value of the alternative sites
  - From the viewpoint of potential positive impacts of the nuclear power station, **Duynefontein** already positively benefits under the management of Eskom, which means that it would experience the least improvement in conservation status
  - **Bantamsklip** and **Thyspunt** would benefit substantially from formal protection status, resulting in a net positive impact on insect communities

SPECIALIST STUDY RESULTS

- **Economic Impacts**
  - Positive macro-economic impacts will be greatest at **Bantamsklip** and **Duynefontein** as the sites are situated in a province with a larger, more diversified economy. Nuclear-1 would result in less dislocation of economic activities if located at Duynefontein than at either of the other two sites
  - Macroeconomic indicators favour **Duynefontein** and **Bantamsklip**
  - Cost-effectiveness analysis indicates that **Thyspunt** is slightly favoured relative to **Duynefontein** and more favoured relative to **Bantamsklip**.
  - The differences between the alternative sites are slight, and all the sites would have positive economic impacts both on the local area and the province in which they are situated
  - The economic impact assessment gives greater weight to the cost-effectiveness analysis, which favours **Thyspunt**

SPECIALIST STUDY RESULTS

- **Heritage Impacts (archaeological sites, fossils and built environment)**
  - All alternative sites contain significant heritage resources
  - **Duynefontein** is palaeontologically highly sensitive, but has less Stone Age heritage than **Bantamsklip** or **Thyspunt**
  - **Thyspunt** more sensitive than **Bantamsklip** in terms of its heritage richness – sites mostly along coast at all sites. 200 m setback line recommended to protect heritage sites

SPECIALIST STUDY RESULTS

Marine Biology Impacts

- Potential impacts similar at all sites and the impacts can be mitigated if the proposed designs are implemented as planned
- Potentially the most significant impacts are:
  - Disruption of the marine environment through the offshore disposal of sediment
  - Release of warmed cooling water
- Spoil disposal will have a potentially highly significant long-term negative impact on the marine environment within a localised area (4.5km^2 at Duynefontein) – acceptable impact according to marine specialist

SPECIALIST STUDY RESULTS

Marine Biology Impacts

- Impacts on Chokka fishing industry at Thyspunt
- Impact on Abalone at Bantamsklip
  - With respect to release of:
    - Spoil
    - Warm water

SPECIALIST STUDY RESULTS

Marine Biology Impacts

- Radionuclides such as Cesium (Cs-137) and Strontium (Sr-90) present in oceans alongside other elements since 1940s
- Background Cesium has been recorded at Koeberg before the power station was established - detected in mussels, sand mussels and fish below levels at which further investigation would be required
- Strontium not recorded in marine organisms at Koeberg
- Due to few organisms in which Cesium has been recorded, low concentrations and lack of Strontium, these nuclides have no detectable potential impact on marine organisms

SPECIALIST STUDY RESULTS

Social Impacts

- Potential negative impacts relate to accommodation for temporary workers during construction
- Potential positive impact is the provision of electricity and related benefits to the broader national and regional economies
- Perceived risks associated with nuclear incidents could potentially lead to a change in attitude and behaviour – reliable information is important

SPECIALIST STUDY RESULTS

Tourism Impacts

- Communities at **Thyspunt** and **Bantamsklip** have expressed opposition to the proposed power station
- **Thyspunt** community highlighted the premium nature of the top-end coastal vacation destination
- **Bantamsklip** community emphasised the new and fragile nature of the developing tourism product and the local dependence thereon
- Some **Duynefontein** tourism stakeholders have personal objections to another power station, however they recognise the potential for increased business and promote a generally positive outlook for tourism

SPECIALIST STUDY RESULTS

Tourism Impacts

- Assessment takes account decline in nature-based tourism as well as an increase in business-related tourism associated with the proposed nuclear power station
- **Duynefontein** – limited potential impact during construction; potential 1.4% improvement during operation
- **Bantamsklip** - potential 5% positive impact during construction; a potential 8.6% improvement during operation
- **Thyspunt** – potential 7.9% negative impact during construction; 0% impact during operation

SPECIALIST STUDY RESULTS

Agricultural Impacts

- Agriculture around **Thyspunt** is based mainly on milk production (2008: R150 m per annum)
- Fynbos farming prevails at the **Bantamsklip** although there is some dairy as well as grape, beef, sheep and game farming (2008: R29 m per annum)
- **Duynefontein** is based on mixed farming (2008: R75 m per annum)

SPECIALIST STUDY RESULTS

Agricultural Impacts

- **Duynefontein** – no impact on agriculture during construction and operation
- **Bantamsklip** – negative potential impact of dust (construction). Potential of less than 5% increase in local market due to water limitations that restrict expansion
- **Thyspunt** – negative potential impact of dust (construction). Potential for 15% positive impact on production due to increased local market

PROJECT ALTERNATIVES

- **Location of the power station (i.e. site selection)**
- Forms of power generation
- Nuclear plant types
- **Layout of the nuclear plant**
- **Fresh water supply and utilisation of abstracted groundwater**
- Management of brine
- Intake of sea water
- **Outlet of water**
- Management of spoil material
- Access to Thyspunt
- **Waste**
- **No-development (i.e. 'No-Go')**

SITE SELECTION

- Site selection was based on:
  - Results of independent specialist studies: the significance of potential impacts, with mitigation, at each of the alternative sites
  - An integration workshop, involving all specialists, where ranking of the sites and key decision factors were agreed on
  - Quantified ranking taking into account the key decision factors

SITE SELECTION

- Impacts of low significance at all alternative sites filtered out e.g. noise, visual impacts, hydrology
- Impacts of medium and high significance that have the same significance at all sites were filtered out e.g. social
- The key factors for decision-making:
  - Integration into the national grid
  - Seismic suitability
  - Impacts on dune geomorphology
  - Impacts on wetlands
  - Impacts on vertebrate fauna
  - Impacts on invertebrate fauna
  - Economic impacts

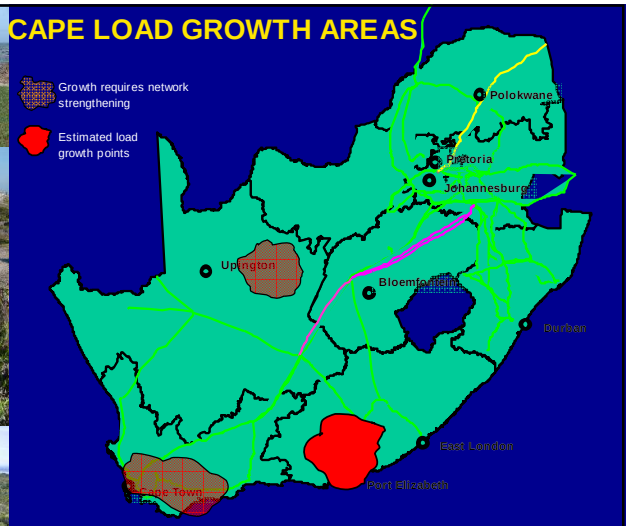
Slide 41

INTEGRATION INTO THE NATIONAL GRID

- Where do we require power stations for future load growth?
- Electricity needs to be transmitted from the high voltage yard at the power station through a network of transmission and distribution lines to end users
- To improve efficiency, Eskom tries connect new base load generation to the closest load, where possible

Slide 42

CAPE LOAD GROWTH AREAS



Slide 43

SITE SELECTION

A number of factors indicate that **Bantamsklip** cannot be regarded as a **preferred alternative** for Nuclear-1 when compared to the other two alternative sites:

- Substantially higher construction costs due to its remote location (requirements for upgrading of roads and bridges and lengthy transmission lines)
- Cumulative environmental impacts of the transmission corridors
- Potential impacts on invertebrate fauna

Bantamsklip is regarded as the least preferred site alternative for Nuclear-1

Slide 44

SITE SELECTION: RECOMMENDATIONS

A quantitative assessment of key criteria indicates that **Thyspunt** is preferred (with a score of 76 as opposed to **Duynefontein**'s score of 57) due to:

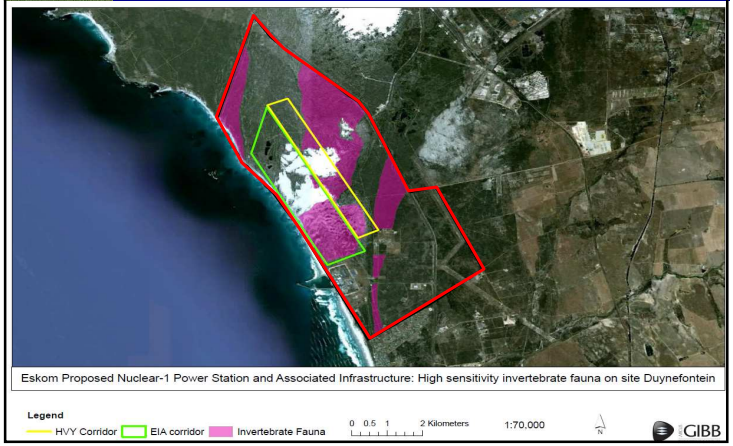
- Lower seismic risk
- Relative ease of integration into the transmission grid
- Site's locality relative to the Port Elizabeth load centre
- Potential benefits of the conserving the majority of the site (2 400ha), as well as additional land being managed for conservation purposes
- Conservation benefits would not be realised at Duynefontein

NUCLEAR PLANT LAYOUT

- Sensitivity maps of all specialist studies were integrated and composite maps were produced to indicate areas of high environmental suitability for each alternative site

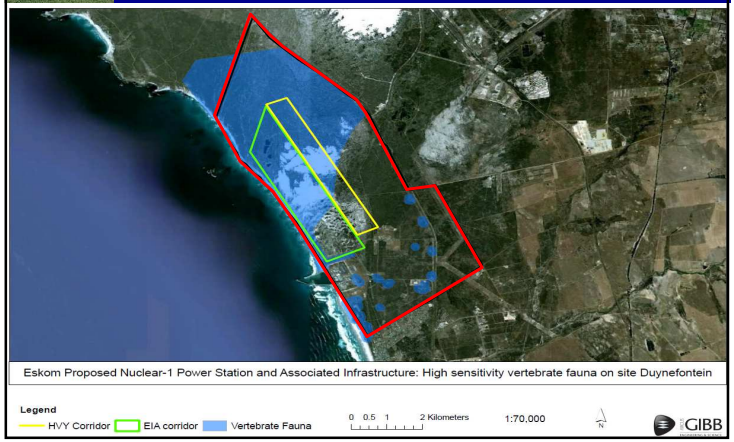
- Finalisation of the site layout plans will require detailed investigations, in conjunction with relevant qualified and experienced specialists

Site Sensitivity: Duynefontein – Invertebrate Fauna



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity invertebrate fauna on site Duynefontein

Site Sensitivity: Duynefontein – Vertebrate Fauna



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity vertebrate fauna on site Duynefontein

Site Sensitivity: Duynefontein – Flora

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity vegetation on site Duynefontein

Legend
HVY Corridor | EIA corridor | Vegetation

0 0.5 1 2 Kilometers

1:70,000

GIBB

Site Sensitivity: Duynefontein – Wetlands

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: Wetlands on site Duynefontein

Legend
HVY Corridor | EIA corridor | Wetlands (not significant)

0 0.5 1 2 Kilometers

1:70,000

GIBB

Site Sensitivity: Duynefontein – Heritage

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity heritage features on site Duynefontein

Legend
HVY Corridor | EIA corridor | Heritage

0 0.5 1 2 Kilometers

1:70,000

GIBB

Site Sensitivity: Duynefontein – Combined Sensitivity

Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity features on Duynefontein site

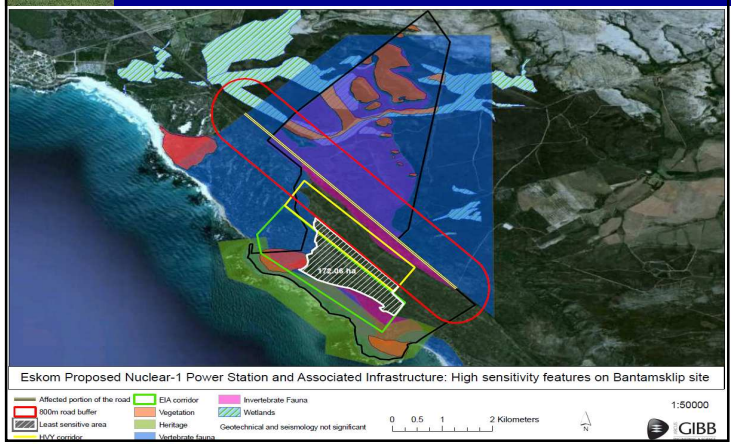
Legend
Affected portion of road | 800m road buffer | Least sensitive area
EIA corridor | Heritage | Vegetation
Invertebrate fauna | Wetlands (not significant)
Geotechnical and seismology not significant

0 0.5 1 2 Kilometers

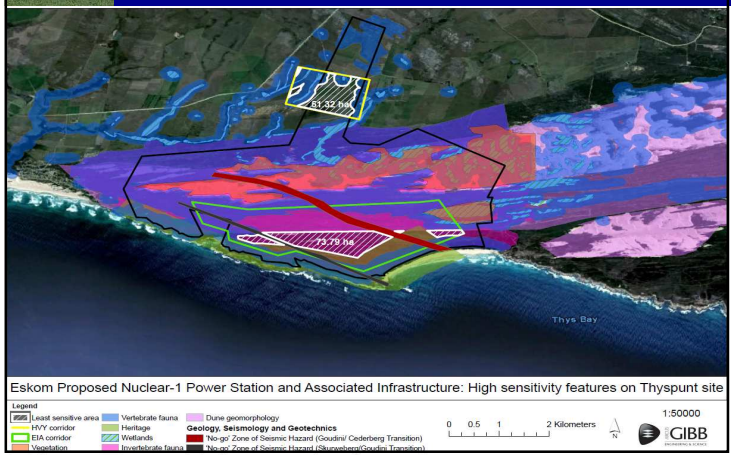
1:65000

GIBB

Site Sensitivity: Bantamsklip – Combined Sensitivity



Site Sensitivity: Thyspunt – Combined Sensitivity



CONSERVATION BENEFITS

- In spite of potentially significant negative impacts, all biophysical specialists in agreement:
  - no fatal flaws at any of the sites
  - positive impacts for conservation of the area outside the footprint of the power station at **Thyspunt** and **Bantamsklip** are significant
- Acquisition of properties for conservation outside the current **Thyspunt** property for wetland conservation
- To guarantee conservation benefits, Thyspunt and Bantamsklip's conservation status must be secured, i.e. declared as official nature reserves

FRESH WATER SUPPLY AND UTILISATION OF ABSTRACTED GROUNDWATER

- At all sites desalination provides a guaranteed source of fresh water supply for the lifespan of the proposed nuclear power station without jeopardising the availability of fresh water to other users
- Desalinisation plant is therefore the preferred alternative for the provision of fresh water at all sites, from the construction phase

INTAKE AND OUTLET OF WATER

- Installation of intake and outlet tunnels that obtain water from the ocean and feed cooling water into a storage area located adjacent to the cooling water pump houses is the only feasible alternative for all sites
- Outlet structures for cooling water and chemical effluent must be offshore
- All releases need to occur at the distances and depths prescribed by the relevant specialists
- Provided that the specific mitigation measures identified in the marine biology report are adhered to, offshore effluent release above the sea floor is the recommended alternative

MANAGEMENT OF SPOIL MATERIAL

- Fine spoil must be disposed of in the marine environment at all sites
- Spoil material that cannot be pumped to sea, must be disposed of on land and used for activities like levelling of the HV yard and to minimise the footprint on the terrestrial environment
- Visual impact of spoil dumps must be minimised
- Transport of spoil to the panhandle at Thyspunt via conveyor belt is not recommended due to the Oyster Bay mobile dune system

WASTE TYPES

- Low-level waste: ± 940 drums (50 – 100 kg per drum) per year
- Intermediate level waste: ± 160 x 6.3 ton concrete drums per year
- High level waste: ± 1 880 tons of spent fuel over life of power station (60 years)

WASTE DISPOSAL

- Only feasible alternative for the disposal of Low-Level and Intermediate-Level radioactive waste is Vaalputs nuclear waste disposal site in Northern Cape
- This is the only authorised facility for this form of waste in SA. Vaalputs has sufficient capacity for the waste that will be generated by Nuclear-1
- With regards to High-Level Waste, only alternative currently available in SA is long-term storage of the spent fuel in the power station – common practice internationally
- Vaalputs may be considered as a disposal site for High-Level Waste in future

WASTE DISPOSAL

- National Radioactive Waste Management Institute established by the National Radioactive Waste Management Institute Act No. 53 of 2008)
- Act came into effect in Dec 2009
- Subject to NNR Regulations
- Institute will transfer responsibility from NECSA

NO-DEVELOPMENT ALTERNATIVE

- Given the urgent power demand in South Africa, the No-Go alternative is not considered to be an alternative, as Eskom's mandate is to provide power for the country
- Eskom would likely apply to develop coal-fired power stations if the current application is declined as coal-fired generation is the only feasible base load alternative
- Life-cycle environmental impacts of coal-fired power generation are greater than nuclear-fuelled power generation

NO-DEVELOPMENT ALTERNATIVE

- If Eskom does not utilise Bantamsklip and Thyspunt for Nuclear-1, there are two options:
  - Keep as a future nuclear site; or
  - Sell to a willing buyer - this may result in an any alternative form of land use - may not involve management of the majority of the properties as a nature reserve

KEY MITIGATION MEASURES

- Independent specialists have proposed mitigation measures to reduce potential negative impacts
- Draft EMP has been compiled as part of draft EIR and if authorised, it will be a legally binding document
- Compliance to EMP must be independently audited throughout construction and operation
- Mitigation measures for botanical impacts, vertebrate and invertebrate fauna, wetlands and heritage resources are particularly important
- Mitigation of heritage impacts will require the work of a site-specific team dedicated to excavations over a period of several years prior to construction

KEY MITIGATION MEASURES

- Qualified and experienced botanical, wetland, vertebrate and invertebrate fauna, dune geomorphology and heritage specialists will need to find acceptable detailed final access route alignments
- Additional groundwater studies are necessary to improve accuracy to of the groundwater model to understand interaction between groundwater and coastal seep wetlands
- Cut-off wall to prevent drawdown of groundwater affecting wetlands during construction
- Acquisition of properties on eastern side of site outside of current Eskom property up to the western boundary of The Links for dedicated wetland conservation

WAY FORWARD

- Comment Period – 6 March to 10 May (66 days) – extension to 31 May (87 days)
- Websites: www.gibb.co.za and www.eskom.co.za/eia
- Public meetings and key stakeholder workshops will be held around the sites assessed from 23 March to 21 April. Minutes of meetings will be sent to attendees
- Comments received will be addressed in the Issues and Response Report in the Final EIR

WAY FORWARD

- Final EIR will be submitted to the DEA for consideration and decision-making
- Final decision regarding EIA will be communicated to registered I&APs
- Construction of Nuclear-1 is subject to other approvals e.g. the NNR site safety decision and transmission lines EIA authorisations

WAY FORWARD

Written comments can be submitted by:

- Post: Public Participation Office, Nuclear 1 EIA, PO Box 503, Mtunzini, 3867, SA
- Fax: +27 (0) 35 340 2232
- Email: nuclear1@acerafrica.co.za

MEETING CONDUCT

- Please wait for the discussion session to ask questions
- Introduce yourselves prior to asking a question and indicate your specific interest
- You are welcome to ask the question in your mother tongue. Presentations will be in English
- One person at a time
- Work through the facilitator
- Show respect
- Focus on the issue not the person
- Be constructive
- Agree to disagree

Please switch off all cell phones!

THANK YOU

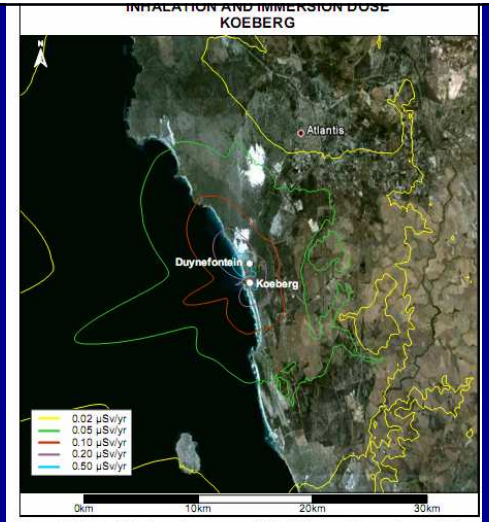


Figure 2-40: Predicted maximum annual inhalation and immersion radiation dose (µSv) for Koeberg

Radioactive emissions

"Govt. Notice No. R 388 of 2009 specifies that the annual effective does limit for members of the public … is 1 000 µSV, with an additional provision for an annual does constraint of 250 µSV. The highest predicted inhalation and external effective does of 11.3 µSV is therefore about 4.5% of the dose constraint and about 1% of the annual effective dose limit."

ENVIRONMENTAL IMPACT ASSESSMENT (EIA)
EIA: 12/12/20/944

FOR THE PROPOSED ESKOM NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE

DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

PUBLIC MEETINGS, WEEK 1 – SOUTHERN CAPE

23 – 25 MARCH 2010

PROVINCE	AREA	DAY AND DATE	VENUE	TIME
Western Cape	Hermanus	23 March 2010	Overstrand Municipal Auditorium	18H00 – 20H00
Western Cape	Pearly Beach	24 March 2010	Pearly Beach Club	18H00 – 20H00
Western Cape	Bredasdorp	25 March 2010	Overberg Agri Hall	18H00 – 20H00

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PREFACE

The presentations at the Public Meetings were uniform in nature and, therefore, one set of proceedings has been prepared. Slides of the presentation are provided in Appendix 2. Interested and Affected Parties (I&APs) raised a variety of issues at the three public meetings and for ease of reference, these have been captured in Appendix 1, providing I&APs from the three public meetings an opportunity to cross reference issues raised at the individual meetings.

Should participants who attended the meetings require any changes to these proceedings, please notify the Public Participation Office in writing within 14 days of receipt.

“Unidentified I&APs” refer largely to persons who attended meetings and verbally raised issues without providing their names. This in no way diminishes the value of the issue raised. Should you recognise your issue and would like to have your name recorded next to it, please advise the Public Participation Office.

In order to provide a structure and to enable the reader to follow the proceedings with ease, Sections 1 to 6 have not been captured verbatim. In Appendix 1 “Record of all Issues Raised and Discussed” the key comments and questions have been captured more or less verbatim with minor grammatical editing (where relevant).

1. ATTENDANCE

1.1. Attendance – Interested and Affected Parties

- As per attendance register.

1.2 Attendance – Eskom Holdings Limited

Name	Position/Role
Mr Tony Stott	Senior Manager: Stakeholder Management Generation Business
Ms Deidre Herbst	Senior Manager – Environment Generation Division
Mr Gert Greeff	Manager: Nuclear Sites
Ms Carin de Villiers	Stakeholder Management & Communication Manager (Nuclear Division)
Mr Mervin Theron	Manager – Regulatory Affairs
Mr Mandla Mbusi	Senior Advisor Stakeholder Management

1.3 Attendance – Environmental Consulting Team (EIA Team)

Name	Organisation	Role in the project
Ms Jaana-Maria Ball	Arcus GIBB (Pty) Ltd	Nuclear-1 EIA: Project Manager
Mr Reuben Heydenrych	Arcus GIBB (Pty) Ltd	Senior Environmental Scientist
Ms Bongi Shinga	ACER (Africa)	Public Participation Consultant
Mrs Antoinette Pieterson	Ferret Mining and Environmental Services	Independent Facilitator

2. WELCOME AND INTRODUCTIONS

The Facilitator, Mrs Antoinette Pieterson, welcomed everyone to the meeting.

The Facilitator explained that the meeting was being recorded. She advised the participants that the record is being taken to ensure an accurate reflection of the proceedings. She informed all participants that it is imperative that when they stand up and pose a question or make a comment, to please state their name so that the minute-taker can preface the question or comment that is made in the minutes and attribute it to the correct person.

At all public meetings, the Facilitator confirmed with participants that they were in agreement with the use of the audio recording device, which was used to record the proceedings, thereby ensuring the accuracy of the record of meetings.

At the Hermanus Public Meeting, Mr Mike Kantey checked with the EIA Team that I&APs can verify the accuracy of the transcription record. **Response:** EIA Team confirmed that the transcription record could be made available on request.

3. FACILITATOR'S INTRODUCTORY REMARKS

3.1 Meeting Timeframes

The Facilitator explained that the meeting was scheduled to end at 20h00. Depending on the response of the participants the meeting could extend beyond the scheduled time, to a time, which would be suitable to all participants.

Please note the following:

- **Hermanus Public Meeting** – the timeframes that were allocated as per the Public Meeting Agenda were not adhered to (due to meeting participants arriving late necessitating a late start to the meeting, the length of the presentations and the need to answer questions raised by the public during the presentations) and the public expressed concerns around time management. The EIA Team extended their apologies regarding this issue and thanked participants for their tolerance to the end of the meeting.
- **Pearly Beach Public Meeting** – revised timeframes were adhered to. Although the discussions continued beyond the original allocated time, the extension was agreed between the participants and the EIA team.
- **Bredasdorp Public Meeting** – revised timeframes were adhered to. The participants indicated that they would like discussions to continue until they were all satisfied with the responses or had the opportunity to engage with the EIA Team.

3.2 Conduct at Meeting

The Facilitator explained that participants are welcome to use the language of their choice - the EIA Team could communicate in English, Afrikaans and Xhosa.

The Facilitator read through the points presented on the slide, which provided guidelines with respect to the conduct of all participants and for achieving a constructive debate and discussion. These points are contained in the main presentation, which is provided in Appendix 2.

She requested all participants to assist the team by having a constructive debate at the meetings.

3.3 Objectives of the Public Meetings

The twenty four (24) independent specialist investigations, which have been undertaken as part of the EIA, for the proposed Nuclear Power Station and Associated Infrastructure, have been completed. The outcomes of the specialist investigations and recommendations have been assembled and integrated into the Draft Environmental Impact Report (EIR).

The purpose of the Public Meetings is three-fold, *viz*.:

- To present and discuss findings of the various specialist studies undertaken during the Environmental Impact Assessment (EIA) Phase.
- To present the conclusions and recommendations of the Draft Environmental Impact Report (EIR).
- Provide an opportunity to Interested and Affected Parties (I&APs) to pose questions and comment on the specialist study findings and the outcomes of the EIA.

4. PRESENTATION: FINDINGS ON THE DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

The Facilitator presented a summary list of issues, which were raised by I&APs during the Scoping Phase. The summary list, which was not intended to be all inclusive and comprehensive, is contained in the presentation provided as Appendix 2.

The Facilitator emphasised that it is important for I&APs to verify that their issues, which were raised during Scoping Phase, have been taken into consideration during the EIA Phase.

Ms Jaana-Maria Ball and Mr Reuben Heydenrych represented the Independent Environmental Assessment Practitioners (EAP), Arcus GIBB.

By way of introduction, Ms Ball, EIA Project Manager, thanked all present for their time and indicated that Arcus GIBB is pleased to be at the Draft Environmental Impact Report (EIR) stage of the EIA.

Ms Ball and Mr Heydenrych then presented the findings of the specialist investigations and the outcomes of the Environmental Impact Assessment (EIA) Phase (refer to presentation slides provided in Appendix 2).

The issues raised and discussed following Arcus GIBB's presentation are captured in the table presented in Appendix 1.

5. ISSUES AND COMMENTS RAISED AND DISCUSSED

5.1 Issues and Comments raised

The table contained in Appendix 1: "Record of Issues Raised and Discussed" details the issues, comments and concerns, which were raised and discussed at the meeting.

Please note:

- Should you wish to make any corrections, please advise ACER within two weeks of receiving these minutes.

6. WAY FORWARD AND CLOSING REMARKS

6.1 Minutes of Meetings

Ms Ball indicated that GIBB would endeavour to distribute draft minutes of the meetings within 21 days from the dates of the respective meetings.

I&APs will have 14 days after distribution to verify provide their comments on the draft minutes to ACER.

Post-meeting notes are provided in bold in these minutes.

6.2 Timeframes

In terms of the timeframes, I&APs were reminded that the public review period of the Draft EIA Report ends on 10 May 2010. Arcus GIBB has allocated a 66 day comment period, recognising that there are long weekends, school holidays and the Easter Weekend within the period 06 March – 10 May 2010. (**Post-meeting note**: Following a request at subsequent public meetings, the end date for the public review period was extended to 31 May 2010, thus providing an 87 day comment period).

Ms Ball encouraged all present to submit their comments to ACER (Africa) using one of the following methods:

- By mail: Public Participation Office, Nuclear-1 EIA, PO Box 503, Mtunzini, 3867
- By fax: 035 340 2232
- By email: nuclear1@acerafrica.co.za

Comments received on the Draft EIR are recorded and addressed on a weekly basis in the form of an Issues and Response Report (IRR). Comments received will be used to produce the Final EIR, which will then be submitted to the Department of Environmental Affairs (DEA) (the decision-making authority for the EIA) for their consideration.

The timeframe for submission of the Final EIR will depend on how long it takes to finalise the report as well as on the type of comments that are received from I&APs during the review period.

A letter will be sent to all registered I&APs informing them of the Authorities' decision.

6.3 Facilitators Concluding Remarks

The Facilitator thanked all present for their input and participation in the process and closed the various meetings.

Interactions between I&APs and the Project Team continued after the various meetings. The discussions that took place after the formal public meetings were not recorded.

APPENDIX 1: RECORD OF ISSUES RAISED AND DISCUSSED

HERMANUS PUBLIC MEETING (23 MARCH 2010)			
No	**Name**	**Comment**	**Response**
1	Mr Mike Kantey CANE	Point of order: In the introduction by the Facilitator, on issues raised by the general public, e.g. human health, waste management, trustworthiness of the process, etc, these are not included in the key factors for decision-making. The agenda that is presented to us is skewed. This is a process point because the list of issues presented does not include what the public has raised during Scoping as reflected by the Facilitator. The only concern that has been included in Arcus GIBB's slide is the conservation issue Mr Kantey wished to know how the other concerns were going to be addressed in this meeting.	Ms Ball: Chapter 9 of the Draft Environmental Impact Report (EIR) deals with the assessment of issues/ potential impacts that came from all specialist studies. It was noted that feedback on all specialist studies could be given, i.e. not limited to what is presented in slide 22. It was agreed that Mr Heydenrych, Arcus GIBB will continue with the presentation and then Mr Kantey's concerns be raised after the presentation.
2	Mr John Williams Save Bantamsklip Association	Mr Williams asked if socio-economic issues are considered as a conservation issue? He also wanted to know if the conservation issues are indeed addressed as per the slide 22.	The Facilitator suggested that feedback be given on all specialist studies.
3	I&AP	Bantamsklip site was conserved before Eskom bought the property.	Mr Gert Greeff indicated that the statement is incorrect.
4	Mr John Williams Save Bantamsklip Association	Mr Williams was of the opinion that when you talk about economic impacts *vs* economic benefit – there seems to be a bit of ambiguity. He asked what is being referred to?	It is referring to positive economic impact.

HERMANUS PUBLIC MEETING (23 MARCH 2010)			
No	**Name**	**Comment**	**Response**
5	Mr John Williams Save Bantamsklip Association	Mr Williams suggested that the Heritage Impact should read as negative Heritage Impact.	Mr Heydenrych confirmed that it is potential negative heritage impact.
6	Mr Mike Kantey CANE	Point of clarity: the meeting has been told that Arcus GIBB has ruled out the discussion of transmission lines at the meeting. He was confused by the fact that this discussion has been taken out of the debate of tonight's meeting but then it is back again in the presentation?	It is included to provide information as to which sites will be preferred based on the transmission line integration. This is an integration issue, i.e. how easy it is to integrate this site with the rest of the grid in the system. The proposed transmission lines, their routes and the potential impacts of the individual transmission lines are undertaken as a separate EIA process.
7	Mr John Williams Save Bantamsklip Association	Mr Williams noted that in terms of project alternatives – that marine issue was not included in the previous slides on impacts. The Marine issues are now included under alternatives. Terrestrial aspects are included but not marine issues, which would seem to indicate that the site was not necessarily by the sea.	Mr Heydenrych in his introduction had indicated that he would focus on key decision factors. There was a Marine Specialist study, indeed there were 24 different specialist studies, and each of those specialist studies assessed different alternatives. What is not reflected in this presentation is all the specialist studies in the Draft EIR itself.
8	Mr Mike Kantey CANE	Mr Kantey raised concern that Mr Heydenrych was adding additional information in his words that were not included on the slides. He contested the point of transmission lines going up and down the country-side, and in which direction the electricity is going. Mr Kantey indicated that he is flagging this point with particular reference to the intensive energy end user groups in the northern part of the country, such as Bayside Aluminium, which is a long way away from the coastline route.	Yes, everything is being recorded. The slides formed the basis of the presentation and have been posted to the EIA websites (www.eskom.co.za and www.gibb.co.za) and everything that is said verbally in the meeting was recorded and reflected in the minutes. Load growth is projected for the Eastern and Western Cape regions requiring additional generation capacity along the coast in this part of South Africa to supply the demand and to stabilise the national transmission network. The initial excess electricity that would be generated would be transferred by the transmission lines to other parts of the country.

HERMANUS PUBLIC MEETING (23 MARCH 2010)			
No	**Name**	**Comment**	**Response**
9	Mr John Williams Save Bantamsklip Association	Mr Williams asked for a description of brine and explanation of where it comes from?	Mr Heydenrych responded that fresh water would be produced through a desalination plant from seawater. The salt or the very high saline solution that is left over is called brine.
10	Mr Mike Kantey CANE	Mr Kantey requested clarity about the wording on the slide that indicated that Vaalputs is a high level Nuclear Waste deposit facility. He asked if this was policy?	Mr Heydenrych explained that Vaalputs is being considered, it is not current practice. **The slide was subsequently revised to increase its clarity. What was meant by the presenter was that when the National Radioactive Waste Disposal Institute investigates potential site for a final repository for high-level radioactive waste Vaalputs is likely to be one of the sites considered in the investigation. Vaalputs is currently only used for the disposal of low and intermediate level radioactive waste.**
11	Mrs Linda McNeal Concerned citizen	Mrs McNeal asked for an explanation as to why solar, wind, renewables, etc, do not have a base load generation capacity?	To be explained during the discussion time.
12	Mr John Williams Save Bantamsklip Association	Mr Williams asked for clarification about decision-making. He enquired if the weights reflected on the slide were negative or positive? He asked if it is an impact issue or simply a focus of importance of issue. He then enquired if the category has to be considered of high importance in order to receive more attention? He also asked what does higher impact mean? Does it mean higher negative impact? Does it mean it is more important for decision-making?	Mr Heydenrych: The ranking has been done with the 24 independent specialists. A process was followed to determine which of those aspects or specialist disciplines are most important in terms of making decisions on which site is selected. The importance of each of these impact categories influence decision-making. We are not looking at whether it is an impact of low significance or high significance. Ms Ball: Reading 1st paragraph “The potential impact of high and medium significance after mitigation. These impacts should have the greatest influence on decision making”.

HERMANUS PUBLIC MEETING (23 MARCH 2010)			
No	**Name**	**Comment**	**Response**
		Is it the highest impact (negative impact) that receives more attention?	2nd point: Where the impacts have the same significance on all sites, they have been filtered out as they do not provide a basis for choice for the preferred site. Ms Ball went on to remind Mr Kantey of the statement mentioned earlier that all of the specialists said, with mitigation (which is very important) the potential impacts within their discipline will be brought down to a low-significance level. So there are no fatal flaws in terms of any of the specialist studies and this applies to all the sites.
13	Mr John Williams Save Bantamsklip Association	Mr Williams added congratulations on the statement arriving at this point "Bantamsklip regarded as least preferred site for Nuclear-1" and hence we will continue listening and participating.	Noted.
14	Mr Mike Kantey CANE	Point of order: Mr Kantey asked that a record be made regarding the stopping of this presentation at 20h05 as, in fact, a breach of public confidence. The Agenda records that the meeting will end at 20H00. It is an intolerable form of public participation and that the whole time has been filled by the proponent's information and nothing from the public. The Agenda states that from 19h00 to 19h50 there will be a discussion of issues. At this point in time which is 20h00, the meeting will take us to 21h00. Noting the time at which the meeting started, some people may have had their supper. He would like to submit that this in fact fringes on the capacity and the ability of people to focus for such a long period of time, to be able to engage substantively on the issue. Having prepared for this meeting from the 6th of March 2010. To come with significant information that needs to be shared, and as a matter of public record and having	The Facilitator apologised on behalf of the EIA Team and confirmed that the EIA Team will stick to the Agenda for all future meetings.

HERMANUS PUBLIC MEETING (23 MARCH 2010)			
No	**Name**	**Comment**	**Response**
		actually waited for 2 hours to get to this point. The quality of public participation, again for the record, cannot be guaranteed in this instance. And therefore this EIA is not following due process. It is a fact that the Pebble Bed process has been thrown out because of not following due process. He said that the judges were not sympathetic with the PBMR EIA process. They were forced to re-do the EIA. He asked that the same mistake not be made again at Pearly Beach, at Bredasdorp, and at Thyspunt, etc. He suggested that the EIA team sticks to the agenda.	**For the record: The Cape High Court judgement relating to the Record of Decision for the PBMR EIA in 2002 was due to the Department of Environmental Affairs and Tourism not agreeing to meet with Earthlife Africa subsequent to the submission of the final EIR. The Court found that the EIA process had been comprehensively undertaken. The Court required the Director-General of the then Department of Environmental Affairs and Tourism to accept submissions from the public and then to re-apply his mind regarding the Record of Decision. Eskom was not forced to do the EIA again. The EIA was initiated again due to design changes and not due to a decision by the Court.**
15	Mr Rob Fryer Overstrand Conservation Foundation	Mr Fryer asked for information about the way that the EIA's are currently being combined, because according to his understanding there were separate EIA's for the 3 sites that are under consideration. Mr Fryer added that there is an intention under the new regulations to combine all these EIAs to be one EIA. However, this has not been done because the EIA regulations have not allowed it – he enquired if this was correct? There are separate applications being made for each of the sites, and yet there is one EIA Report being produced, which now compares the EIA of the 3 EIA sites. He asked how we arrived at	Ms Ball: There are a number of alternatives, as indicated on the slide, which were assessed in this process. Originally, Eskom had an application for one nuclear power station, up to 4 000 megawatts (MW), this included a number of alternative sites. **Eskom did consider a combined application which could have resulted in an authorisation for more than one site however a decision was taken to remain with the original application.**

HERMANUS PUBLIC MEETING (23 MARCH 2010)			
No	**Name**	**Comment**	**Response**
		this point when we were expecting to have an EIA Report for all 3 proposals. Each of these proposals should have been submitted separately to the Department of Environmental Affairs (DEA), and were going to be assessed independently by the DEA as independent proposals because they are independent? He further enquired how we are suddenly faced with a combined conclusion when there should be 3 separate conclusions (each one submitted independently for DEA's consideration and decision)?	The application is for one Nuclear Power Station for 4 000 MW. If Eskom wants to build a second nuclear power station, they will have to start a whole new EIA process.
		Mr Fryer was expecting three separate reports and wanted to know where the Draft EIA Report for Bantamsklip was. When is a decision going to be made on the EIA for Bantamsklip?	Ms Ball: Bantamsklip is one of the alternative sites assessed in this EIA. Each specialist study assessed the potential impacts at Bantamsklip The Bantamsklip site is not the preferred site for Nuclear-1. The EIA Report recommends Thyspunt as the preferred site. The DEA can either agree or not agree with a recommendation.
16	Mr John Williams Save Bantamsklip Association	Mr Williams followed on from what Mr Fryer has said. The process itself has not been concluded correctly. Based on the decision, made as a recommendation, the opportunity is lost to record the questions which we have pertaining to Bantamsklip because it has been excluded. This puts everyone in a very difficult position, because do we simply walk out now and trust that you will see through the process as you have recommended?	Ms Ball: You are quite correct; the DEA may say we do not agree with the consultant's recommendation. So, my advice to you all as community members, through all the 3 sites, is to please keep on recording your issues. Please scrutinise those specialist reports, please give us your comments. If you agree or disagree with the specialist report. All comments are recorded in the final report and you have it on record and in the minutes.

HERMANUS PUBLIC MEETING (23 MARCH 2010)			
No	**Name**	**Comment**	**Response**
			Ms Herbst: It is important to note that in all the EIAs that we have carried out, the DEA has never gone against the recommendations of the EIA consultant in terms of the recommended site.
17	Mr John Williams Save Bantamsklip Association	Mr Williams noted that in the context of submissions that have been made regarding the specialist studies, he would like to record that Bantamsklip is a protected area and will remain a protected area, and we believe that Bantamsklip is a potential UNESCO World Heritage Site. We believe that Bantamsklip should, in fact, be sold by Eskom to someone like the SANParks. There are a number of sub-issues in relation to this: ❑ Marine consideration seems to have been left out of the issues in terms of the weighting of impacts in your report. The people wish to record that they take exception to this. ❑ The marine component of Bantamsklip is possibly more important than the terrestrial component of the area. ❑ Stakeholders wish to emphasise their reasoning for this protected status.	Points noted.
18	Mrs Linda McNeal Concerned Citizen	Mrs McNeal questioned why wind, solar, etc, cannot be as effective as coal and nuclear?	Mr Stott: The base load refers to the capacity to generate electricity continuously 24 hours a day. At the moment in South Africa, we estimate this winter, the peak demand to be about 39 500 MW, and that compared to the 43 000 MW per day, which is generated. So there is not much reserve margin.

HERMANUS PUBLIC MEETING (23 MARCH 2010)			
No	**Name**	**Comment**	**Response**
			However, at any other time of the day, the minimum amount of electricity needed is about 25 000 MW. Power stations have to continuously and collectively generate this amount of electricity, during every second of the day. Wind energy can generate electricity when the wind is blowing and in South Africa, wind efficiency is estimated at about 20% of the time. Solar only generates electricity when the sun is shining. Base load requires that you generate continuously day and night. A base load station needs to produce electricity for at least 70% of the time Eskom is however working at the storage capacity for solar energy that can make it into a pseudo base load - which is not commercially viable at the moment, anywhere in the world. But we hope that in the solar-thermal plant, which is proposed to be built near Upington that we will be able to include storage facilities in the form of molten salt. At the moment, it is only coal-fired power stations and nuclear that can provide the base load.
19	Mr Mike Kantey CANE	Mr Kantey said it is important to understand and unpack some of the fallacies of the base load assumption. Base load is an artificial construct refers. It takes something as simple as Koeberg, which has been off for the past two to three weeks, here and there, and has been off sometimes unexpectedly such as when the bolt was found, etc. to show clearly that it is say that a nuclear power station has to generate power every minute of the day:	Mr Stott replied that part of what Mr Kantey is saying is correct and part is incorrect. Certainly, if say a 1 000 MW of base load is replaced with wind, you would probably have to have 3 000 MW of wind energy. In terms of parts of the country connecting to the national grid, you would probably get the equivalent of that, but obviously you would need 3 000 MW instead of 1 000 MW. There is no commercial solar storage scheme yet in operation. There are solar thermal plants in America, California and Spain, that have been operating quite

HERMANUS PUBLIC MEETING (23 MARCH 2010)			
No	**Name**	**Comment**	**Response**
		❑ So, firstly, there is a sense of interrupted power supply in a nuclear power station. ❑ Secondly, the angle of wind does not necessarily blow in the same direction at the same time but it does blow somewhere continuously. So, in some countries like in Ireland, they have potentially aggregated 10,000 MW of supply continuously from a wind farm. Wind farms, as part of the contribution to the grid, are viable night and day and research will prove this to be true. ❑ Thirdly, Solar power, for example in California, Spain, etc, has been running successfully in other areas. These concentrated solar power plants have a molten salts storage system, which does in fact supply power and have been running successfully in some countries including southern Namibia and southwest Botswana. He went on to say that this base load argument is not factual. This definition that renewables cannot generate base load must be questioned. The fact that NERSA has capped renewable energy at 835 MW makes a mockery of the investment. No one will invest in renewable energy for 835MW.	successfully but they do not have molten salt storage capacity in commercial operation. We are certainly hoping that we will be able to do that at the solar-thermal plant for which we already have environmental authorisation. It will be the biggest solar–thermal plant of its type in the world Solar power has more potential in South Africa than in any other country. **In 2009, Koeberg power station had a unit capability factor of 83 %. The unplanned capability loss factor was 2 %, which is considered world-class performance. Planned outages for refuelling and maintenance were 15 %.** **Eskom confirms that renewable technologies are part and parcel of the energy mix for Eskom.**
20	Mr Mike Kantey CANE	Mr Kantey asked if he could go back to the issue of 20,000MW, where it stated that in the discussion between DEA and Arcus GIBB (Jaana Ball) that Eskom is pursuing one nuclear reactor of 4000MW. However, in line with the country's long-term intention to investigate up to 20,000MW of nuclear, another	Comment noted.

HERMANUS PUBLIC MEETING (23 MARCH 2010)			
No	**Name**	**Comment**	**Response**
		application may be submitted by Eskom soon after the submission of the Final EIA report for Nuclear-1 expected to be submitted in June. So, in the second half of the year it will come back to Bantamsklip.	
21	Mr John Williams Save Bantamsklip Association	Mr Williams reminded Mr Stott that he had been requested to respond to the capping issue of renewables, which relates to the regulatory framework.	Mr Stott replied that he cannot deal with the capping issue, which is a NERSA decision.
22	Mr Paul Slabbert Strandveld Tourism and Conservation Association	Mr Slabbert stated that regarding transmission and distribution of electricity, a concern around cumulative impacts was voiced at the meeting last year (he did not know the exact date of the meeting). This is definitely something that is assessed in EIAs. The nuclear power station EIA needs to assess the cumulative impact of transmission line corridors. The separation of issues of transmission and generation does not go down well with the public. He added that although there will not be an authorisation on Bantamsklip, however, there is a feeling that Bantamsklip is reserved, the way it is worded in the EIA. It would be interesting to note if there will be an authorisation for transmission. Imagine if there is an authorisation for transmission lines, i.e. the line is secure. This technically does not make sense, both in the EIA process and in practice to have a transmission authorisation without a site authorisation.	Ms Herbst: Eskom have previously completed EIAs for large coal fired power stations excluding the transmission lines. It is extremely difficult to deal with both EIAs together as one because of the complexity and different I&APs with different issues. Authorities have always been quite comfortable with Eskom's approach of undertaking the EIAs separately. Ms Herbst: In this case, the Bantamsklip site has been identified as one of the potential nuclear sites for the future. Therefore, it makes sense to do the evaluation of environmental impact assessment for the transmission line, and when we do the site application, we can consider the impacts from the transmission line EIA as well as the EIA for the site. This could well be the case for the EIA for the Nuclear 2, 3 or 4. Ms Ball: The transmission EIAs are at the scoping phase. Where possible cumulative impacts have been considered. (Arcus GIBB are the project managers for the Transmission EIA associated with Bantamsklip).

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		How can we continue assessing the distribution/ transmission of power from Bantamsklip? How has DEA responded to the approach? He also asked if the DEA had their concern in the request to join or merge the two assessments and wanted to know what their response was to this issue. Technically, if DEA were happy with the approach, he would say that if Bantamsklip is scrapped from the table at this point, then the Transmission lines EIA should be stopped as well. He asked that this recorded.	Ms Ball: We have had numerous meetings with DEA and they are happy with the approach of separating the site EIA and transmission line EIA.
23	I&AP	I did not have time to read the entire report. But I have read the summary of what the consultants have said. There are 66 days to get 2 x CDs of the detailed specialist reports. Not much time to review the reports. Who will check on the consultants? If there are issues around the marine biologist – who will be reviewing the specialist studies?	Ms Ball: Arcus GIBB welcome peer review of the specialist studies. The DEA has also appointed a peer review panel. On the review panel, there are a number of members representing different disciplines; I know for certain, there is a flora and social specialist. Arcus GIBB has appointed ' in our opinion' the best specialists available. They are not only single specialists, they are specialist teams and in some cases up to 10 specialists per team. Peer reviewers have been appointed by Arcus GIBB to internally review specialist studies.
24	I&APs	Is it possible to make the list of the DEA peer reviewers of the specialist reports available to the public?	Ms Ball suggested that this I&AP writes a letter to Department of Environmental Affairs (DEA) and request the list of peer reviewers that the DEA has appointed to its review panel directly from the Authority.

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25	Ms Katrin Pobantz Tesselaarsdal Action Group	Ms Pobantz asked if once the peer review has given their review of the specialist studies, would their opinion be made available to the public, i.e. the peer reviewer's opinion on the specialist studies that have been undertaken? She also enquired if the DEA is going to base the decision on the peer review of the specialist studies and if the public will be allowed to have access to the information as part of the public process and access to information.	Ms Ball: Again, that question needs to be submitted to the Department of Environmental Affairs (DEA) Case Officer of the Nuclear-1 EIA. **Clarification: DEA have appointed a panel to review the Environmental Impact Report (EIR) and its specialist studies, this would include referencing specialist studies but to our knowledge (Eskom) the Review Panel's scope of work does not include a detailed review of each specialist study.**
26	Mr Mike Kantey CANE	Mr Kantey said he wanted to go back to the list of issues, which were raised by the public, and particularly the issue of human health. He would like an issue recorded in these proceedings. Dating back to July 2007, in the initial record of key stakeholder meetings where he recorded a series of questions relating to the hazard posed by airborne and waterborne emissions and effluent. Mr Kobus of the National Department of Health picked this up and he requested to see responses to the issues raised by Mr Kantey. This was picked up in the January 2008 Scoping Report. Page 7-11, it states in bullet 2 "the potential risks may occur if the radionuclides or hazardous chemicals reach the human body, through volatilisation, direct contact with the skin, migration of radioactive effluent into groundwater that is used as a drinking water source and used to irrigate crops" and bullet 3 "atmospheric release of radioactive substances will	Ms Ball: Your issues have been noted.

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		contaminate the air. The radioactive substances will subsequently be deposited onto the land and ocean through dry (fall out) and/or wet deposition (rainfall). The contaminants will then enter the soil surface, water bodies, ground water as well as the ocean through natural processes. Flora and fauna reliant on these natural resources will be affected by the radioactive substances". And it goes on to list in issues: Section 7.3.11, bullet 1 • " there are perceptions/fears of danger/accidents leading to a fall in land values and loss of organic certification" bullet 4, • "potential for contamination of crops through either through wet and/or dry deposition, irrigation of crops using contaminated surface and/or ground water and subsequent uptake by crops for human consumption" This is then recorded as a list of issues in the Scoping Issues and Response Report on pages 51, 52 and item 60 and also in the January 2008 Draft Scoping Report, 3.4 bullet 2 " It is assumed *(please note that use of the word assumed)* that insignificant amounts of radionuclides will be released during the construction, decommissioning and further phases of the nuclear power station…." 2nd bullet - the operational phases the emissions of	

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		radionuclides will be provided by actual historical data researched at Koeberg, which was designed in the 1970s. 3rd bullet – the client will provide the radionuclide expected to…..' So, in fact, the very person whose data set is subject to scientific scrutiny will in fact provide the data set and there is no independent person who will provide the data set for any study done anywhere else in the world. The proponent is going to provide the dataset. And then it goes on to say, on page 47, point 5.22 "radionuclides emissions…..and has to comply with the amount allowed by the National Nuclear Regulator" but there is no data set provided, why? So, when you come to the Appendix 5 of the PBMR Koeberg Radiation Air Quality Final Report, the effective dose of Cesium 137 is $6.9x10^{8}$ and Strontium 90 is 1.6 $x10^{7}$ and also in the reports of the EMS, 1982 - 2002, from Koeberg Nuclear Power Station, liquid effluents containing Strontium 90 were given in ❑ 1988 - $3.03x10^{5}$, ❑ 1989 - $3x10^{4}$, ❑ 1991 - $7.96x10^{4}$ ❑ 1994 – 5.36 $x10^{7}$ ❑ 1995 - 9.5 $x10^{6}$ ❑ 1997 – 1.51 $x10^{7}$ ❑ 2001, etc.	

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		In the PBMR report, this information is given in becquerels per annum. Yet in the Air Quality report of this Nuclear-1 EIA report, (it is giving references of 2002) and it says that we will not be talking about ingestion and there is no mention anywhere in the report of pathways of human health through the digestion of foodstuffs. Mr Kantey therefore questioned where in the Human Health report is the impact of radionuclides actually addressed in data set terms (scientific data or technical terms) and not in terms of the opinion or assumptions of the proponent? There is no data set, he has searched for it since the 6th March 2010 and there is no data set. Therefore, when it comes to actual technology, in terms of the International Atomic Energy Agency, according to National Nuclear Standards, where is the data? He added that the Air Quality report lets slip the information that the EPR is under consideration (probably missed out on the editing of the report) being the European Pressurised Reactor. He recorded that it is felt that this process from a scientific point of view is questionable. He would like to get experts from around the world to look at the peer review of the specialist studies. Mr Kantey informed Ms Ball that the information provided was a statement and he is not expecting a	Ms Ball: That was a long question, is noted and will be addressed.

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		response. He then referred to page 3.3 of the EIA report, the amount of nuclear fuel waste over the life cycle (which does not say how long) is 1,880 tons. This information is very specific. And again, page 33-26 "according to …and Energy Institute 2008 (reference in the Bibliography), the estimated liquid waste for the EPR plant type per unit is approximately 8,000m^3 per year per unit. Now where is that stated? Why are these facts here if they are not in the Executive Summary and not in your report? Where is the peer review? How can this information be so specific? Where is that study? He emphasised that this is in the Air Quality Report, Appendix E10 at page 326. This is an omission and is a tangible omission. Why is it not in the list of issues, in the Executive Summary, and what is the peer review going to do about this? The reviewer's CV indicates that he has served on the Nuclear Atomic Energy Board from 1971 to 1984 and actually served again from 1986 to 1995. Mr Kantey wanted to know he could be seen as independent?	

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27	Mr Kobus Visser Tesselaarsdal Action Group	In die voorlegging is verwys na die feit dat as Bantamsklip afgekeur word, dan sal hy verkoop word. Wanneer gaan ons hierdie punt bereik, dis my eerste vraag. Want as die lyne se proses goedgekeur word dan het julle 'n nuwe studie groep om hierde proses op te grawe en aan die gang te sit en dit gaan nog moeiliker wees en dit is wat hy probeer sê as die lyne goedgekeur is dan gaan julle baie makliker 'n "site" goedgekeur kry. Nou wanneer gaan Eskom besluit dis genoeg, ons aanvaar Bantamsklip is nie aanvaarbaar nie. <u>Translation:</u> The presentation refers to the fact that if Bantamsklip is rejected, it will be sold. When will this point be reached? If the transmission lines is approved, then a new study group will have to restart this process and it will be more difficult to get the site approved. When will Eskom decide that this is enough? Bantamsklip is not acceptable.	Ms Herbst: Bantamsklip has been identified as a potential site for a nuclear power station. We are continuing to consider it as a potential nuclear site. That is why we are continuing with the Environmental Impact Assessment for the transmission lines. It is likely that Bantamsklip will be considered for Nuclear-2 or -3. This EIA has indicated there are no fatal flaws in the Bantamsklip site.
28	I&AP	A question was raised regarding a fatal flaw and it was queried if the economic, the tourism impacts, etc, which are high impacts cannot be regarded as fatal flaws in the Bantamsklip site.	Noted.
29	Mr John Williams Save Bantamsklip Association	Mr Williams stated that the fact that the consultants are standing up comfortably and saying that there are no fatal flaws makes him conclude that the process is flawed.	Noted.

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30	Mr Mike Kantey CANE	Mr Kantey warned that there has been a legal precedence in this country for throwing EIA reports out, it is in the public record. Earthlife Africa took the proponent to court and were successful because of fatal flaws in the process and not in the actual science. He is putting on record that, in the Air Quality report alone, there are so many flaws that could drive this bus.	Noted. **As stated above (response to Comment 15), Mr Kantey's statement is not a correct reflection of the judgement. The Cape High Court judgement, which is available on request, specifically states that the EIA process had been comprehensively undertaken. The Court found that the Director-General of the then Department of Environmental Affairs and Tourism declining to meet with Earthlife Africa subsequent to the submission of the Final EIR was not appropriate.**
31	I&AP	This I&AP stated that the reports that have been made available over time are a complete waste of time. Whether it is Nuclear-1, 2, 3 or 10, it is all totally irrelevant. What this means is that concerning the whole nuclear debate, the greatest fatal flaw is about waste and health. Where does the waste go? The only place where an Environmental Impact Assessment is should be conducted is at Vaalputs and in Namaqualand and where the storage of waste for the next 40 years, is going. That is the only huge fatal flaw. In terms of nuclear physics, waste is the unseen enemy. Flora, fauna, biodiversity, etc can be studied but until waste is investigated nationally, everything else does not matter.	Noted. **The management and transport of waste is covered in the Draft EIR. Radioactive waste also falls within the jurisdiction of the Minister of Energy in terms of the Nuclear Energy Act and has been further delegated to the National Radioactive Waste Disposal Institute. Therefore radioactive waste will also be covered in more detail in their processes and the NNR licensing process.**
32	Mr Mike Kantey CANE	Mr Kantey informed the meeting that he also represents the Namaqualand Action Group for Environmental Justice, whose chairman is Mr Andy Pienaar. They are a community whose membership comes from every community represented in their structures from that area.	Comment noted. **As stated above (response to Comment 11), the slide incorrectly indicated that Vaalputs was being considered as a disposal area for high level radioactive waste. It should have read, and has been changed in the presentation, that Vaalputs is likely to be**

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		Mr Kantey said that given that scenario and given Mr Andy Pienaar's determination for the past 2-3 decades to oppose the dumping of nuclear waste at Vaalputs - that slide presented by Arcus GIBB stipulates categorically that waste will be disposed at Vaalputs, this will be resisted. They will oppose the dumping of waste with all efforts because there is popular resistance to dumping of waste in Namaqualand. People do not come to meetings representing their jackets, in fact, they are mandated representatives. I acknowledge the presence of Tesselaarsdal Action Group, Strandveld Tourism and Conservation Association, Save Bantamsklip Association, etc and all other representatives and noted that they are mandatory representatives of the various communities. Another fascinating aspect, is how plans are forged in the Eastern and Western Cape to ship waste to the Northern Cape? So what is being said is that Bantamsklip, Thyspunt and the Northern Cape community will be sacrificed for the benefit of Alcan, Canadians and Australians.	**considered as one of the options for a final repository for radioactive waste.**
33	I&AP	This person stated that he understood that at Thyspunt there is a lot of archaeological collections (refer to specialist reports) that need to be undertaken prior to the commencement of construction on the site. It was asked how construction can commence in 2011 when you have a lot of information to still collate?	Ms Ball: With respect to Thyspunt, the specialist concerned indicated that mitigation measures need to be started straight away. Ms Herbst: It states that it says that site preparation will commence in 2011, those are however, very optimistic timelines. The Environmental Management Programme

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			(EMP) stipulates the recommendations of specialists and what actions are required. The EMP is legally binding, therefore Eskom will be required to implement the recommendations of, for example, the heritage specialist, prior to construction starting.
34	Mr Mike Kantey CANE	Mr Kantey asked for clarity regarding safety issues. What is most important about public participation is the theory that people believe that people will participate. If someone says A and the consultant says B, and then there is no more discussion, that is not public participation. That is the same issue with the Issues Trail, which I will raise as part of the legal context, in terms of flawed process. When he raises an issue and is not addressed to his personal satisfaction, then there is no public participation. He added that this is an issue that relates to the technical specifications, they are not sufficient and he would argue and he would be scientifically right in the EIA. It is insufficient to claim that plant type is unknown. Specifics must be made available because when the safety case of the PBMR was considered, it was highly analysed by the National Nuclear Regulator and well documented. For Nuclear 1, we do not know what it is, we do not know if it is a BMW or Mercedes Benz, maybe it has an air bubble or maybe it does not.	Ms Ball commenced with a response but Mr Kantey stated that he is not expecting a response from Arcus GIBB. Mr Kantey indicated that the issue raised is a process issue on the table and cannot be responded to. It needs to be recorded. It is a fatal flaw of the process.

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		How can a safety case for an unknown nuclear reactor be evaluated scientifically? (He was not talking about the perception, the public relations exercise), but a reactor in terms of the first principle: nuclear physics, in terms of nuclear engineering, chemical engineering, etc? Firstly, how it works is unknown, the air quality, and emissions, etc, cannot be evaluated when the type of the reactor is unknown. He said that only once Eskom's infinite wisdom has made an economic decision and can say, they have looked at Areva, they have looked at AP 1000 and this is what they are going to design for and only then can the EIA commence.	
35	Mr John Williams Save Bantamsklip Association	Mr Williams requested Arcus GIBB to clarify the positive benefits at Bantamsklip, i.e. the positive benefits of marine reserve around the site.	Ms Ball: One of the specialist opinions was that should a nuclear power station be built at Bantamsklip, one of the positive benefits would be the establishment of a marine reserve. The specialist was of the opinion that the ongoing poaching would be prevented with the presence of Eskom on site.
36	Mr Mike Kantey CANE	Mr Kantey said that because this is a public participation process, he would like to register a very fundamental point with regards to filter feeders (Abalone). It is all in the Koeberg reports, the becquerel activity per kilogram of filter feeders. He stated that absolutely hilarious to read that there will be a net zero impact in the community around Bantamsklip.	Ms Ball: Explained for the benefit of all participants. The UCT has undertaken the marine studies at Koeberg Nuclear Power Station and they are the same specialists that have undertaken the investigations for the Nuclear-1 EIA.

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		Another point he raised is that the Buffelsjacht Community, a fishing community live on that sea life. How can the impact not be recognised? He stated that the fact is that information around becquerel activity around Koeberg Nuclear Power Station (20 years worth of information) is presented in Eskom's reports. It is not about UCT, it is the information presented in Eskom's reports.	
37	Mrs Linda McNeal I&AP	Mrs McNeal asked that the slide which refers to base load options as being only feasible with coal and nuclear be taken out because it is misleading the public. This is important as the team will be moving around to other communities, e.g. Pearly Beach, Bredasdorp, etc. Her understanding is that the base load is not only limited to coal and nuclear.	Mr Stott: The information presented is correct and honest. South Africa requires all the energy that can be acquired, from renewables to other base load generating sources. In terms of the International Energy Association – Energy Outlook, the different load factors are described as: *While there are no definitive utilization breakpoints, base load plants are facilities that operate almost continuously, generally at annual utilization rates of 70 percent or higher. Intermediate load plants are facilities that operate less frequently than base load plants, generally at annual utilization rates between 25 and 70 percent. Peaking plants are facilities that only run when the demand for electricity is very high, generally at annual utilization rates less than 25 percent.* Since renewable technologies have annual utilisation factors well below 70% they are not regarded as base load. Eskom's coal and nuclear plants operate above 70% and therefore these technologies are referred to as baseload.

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38	Ms Katrin Pobantz Tesselaarsdal Action Group	Ms Pobantz stated that they are aware of renewable sources that can provide up to 10,000MW. But capping is set at 875MW and that does not make sense. There is a possibility for another power source, which does not kill people around them, which does not have the potential to explode. She also added that there is a potential of having passive houses, the residential houses could provide electricity back into the grid. She explained that this happens in Germany, give people an opportunity to feed into the grid and reduce their own consumption. Why is South African not giving people the incentive to start providing into the grid? She also went on to say that the Independent Power Suppliers should also be given the potential to come into the grid. She feels that this could be the first and quickest option and yet the Nuclear option, which costs a fortune, is being investigated. Eskom should be looking further than Nuclear.	Mr Stott: It is important to start differentiating between Eskom, the National Energy Regulator of South Africa (NERSA) and the Department of Energy (DoE). It is the DoE that deals with the energy planning for the country and not Eskom. The DoE is responsible for the Integrated Resource Plan (IRP) and determines what mix of renewables, hydropower, nuclear, solar, etc comes from Eskom and how much comes from the Independent Power Producers. The framework that enables the IPPs to provide electricity, it is not Eskom. NERSA provides the regulatory framework that enables the IPPs to produce into the network. If there is any cap, it is NERSA's cap and not Eskom's. Eskom is looking at a range of energy options. They are looking at wind; there is already environmental authorisation for a wind farm of 100MW and a concentrated solar power plant. Eskom is investigating other options, which will diversify the energy mix.
39	Mr Mike Kantey CANE	Mr Kantey noted that it has not been Eskom's decision to go nuclear, it is the National Government's responsibility to influence policy and that policy, which he has witnessed for the past years, has been determined outside Eskom's. It has been imposed on Eskom by the central government during the National Party era and beyond. It is difficult dealing with that policy.	Comment noted.

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		He went on to say that given that political faith, the only way citizens of this country can oppose this policy collectively, under the democratic order of the Constitution of South Africa, is to form a coalition (which may be opposing nuclear energy as a side show) but the real coalition is for People's Summit on Energy Policy which Dave Sax and Richard Worthington of WWF have already proposed for the middle of this year. So what we need to forge is a popular front for the liberation of energy policy. If the citizens of SA can do that, Eskom will become their allies overnight.	
40	Mr Mike Kantey CANE	Mr Kantey stated that this whole thing that has been running in Cape Town to subsidise industry, specifically to the Bayside and Hillside Aluminium Smelters. Clearly, the smelters are the big energy consumers and not residential; they are industrial and mining sectors and are located in the north of the country. He added that in fact, energy goes both ways to and from the grid, but we need to be aware that whether it is PWR, renewables or something else, a grid is a grid. These arguments have been going on since the 80's. So the real issue is - is it necessary to mess up a beautiful spot in the biosphere in the Agulhas Plain? He asked if it is it worthwhile, from a national interest similar to St Lucia, sacrificing this particular site out of national expedience.	Comment noted.

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41	I&AP	Die hele ding oor alternatiewe energie gaan nie oor wat Eskom besig is om te bou nie; dit gaan oor wat onafhanklike verskaffers toegelaat word. Ons weet wat Eskom besig is om te bou. Ons wil hê Eskom moet die deur oopmaak saam met die regering sodat onafhanklike mense kan inkom. Die tweede ding is dat die departement van omgewing is 'n regeringsliggaam; dit is nie 'n organisasie nie. Die een ding wat ek ook wil vra, heeltemal af van hierdie punt af. Ons het 'n e-pos gestuur en gevra hoekom kan hierdie document nie ook in Caledon beskikbaar gestel word nie. Daar het niks van ons versoek gekom om dit beskikbaar te stel nie, want dit was ook vroeër genoem dat die mense wat op die lyne sit het eintlik niks met Bantamsklip te doen nie. Dit is die grootste klop nonsens wat daar is. Daardie mense, al sit hulle in Grabouw, dan is hulle net so betrokke in wat daar gebeur. Kan ons net hierdie inligting oral beskikbaar maak? Met die eerste Draft Scoping Report moes ons ook gevra het om dit beskikbaar te gemaak het in Caledon. <u>Translation</u>: The issue is that it is not about alternative energy that Eskom is building, but it is about what independent power producers are permitted to do. There is an	**A copy of the Draft Environmental Impact Report was hand delivered by Ms Ball on 21 March 2010 and placed in the Caledon Public Library for public review on 23 March 2010.**

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		awareness of what Eskom is busy building. Eskom, together with government, should open the door to independent producers. Secondly; the Department of Environment is a government body and not an organisation. An issue that is completely off the point that was raised, an e-mail requested that these documents be made available in Caledon; however, there was no response to this request. It was also mentioned that the people who are affected by the transmission line have nothing to do with Bantamsklip. This is utter nonsense. Even if these individuals are in Grabouw, they are just as involved in what occurs at Bantamsklip. Can this information not be made accessible to everybody? Similarly, a request for the first Draft Scoping Report to be made available in Caledon also had to be made.	

PEARLY BEACH PUBLIC MEETING (24 MARCH 2010)			
No	**Name**	**Comment**	**Response**
1	I&AP Pearly Beach Ratepayers Association	The I&AP noted that it has been said that Bantamsklip is not being considered for Nuclear-1, and wanted to know the reason that it is not an option for Nuclear-1.	Mr Heydenrych: For the purpose of Nuclear-1 EIA, Bantamsklip option has been 'ruled out' as an alternative, as it is not the preferred site. But this is not to say that it will be excluded as a possible site in the future since the outcomes of this EIA are that the alternative sites do not have fatal flaws.
2	Mr Mike Ravenscroft Landowner	Mr Ravenscroft asked if the team were aware that by excluding Bantamsklip site – that the longer they leave it, the more difficult it would be to get development in the area. The environment e.g. sense of place, visual, etc, are all the factors, which now have significance when considering potential developments. For the purposes of Bantamsklip, it should be noted that conservation is playing a far bigger part in the area, with the opportunities that are presented by the SANParks. Visual is a negative impact in nearly everything that we have discussed. He went on to say that by leaving Bantamsklip now, they are allowing an opportunity for it to become part of the Agulhas National Park.	Mr Stott: This EIA was for one nuclear power station at one site. Different sites were looked at in order to decide which one is the preferred option for Nuclear-1 (if it is approved). We have said at all public meetings since we started in 2007 that the estimation of nuclear power required is 20 000 MW. He went on to further explain that the government indicates that it requires more nuclear energy in South Africa, then Eskom will look at other potential sites. It is hoped that this information will be published in the Integrated Resources Plan (IRP), which the Department of Energy have stated that they will publish in June this year (2010). An EIA would have to be done should Nuclear-2 and Nuclear-3 be required. Therefore it does not mean that Bantamsklip has been ruled out forever.

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3	Ms Amanda Jephson Save Bantamsklip Association	Ms Jephson said that from what has been presented, it seems as though Thyspunt was the most sensitive site. She asked if an EIA is worth it, because it seems that regardless of what the EIA shows in terms of sensitivity, the final site selection was based on the economics, transmission integration and the close proximity of the site to the load centre, in this case, Coega. She queried if a site is chosen regardless of how sensitive the site is? Is it all about economics, transmission integration and load centres? It does not seem to make a difference in the selection process. The information that has been presented does show that Thyspunt is the most sensitive site. So in the end do you choose a site with a basis that you will conserve the site as a Natural Heritage Site?	Ms Ball: In terms of the assessment, we had 24 different specialists. In terms of clusters, there were 3 clusters, such as the biophysical environment, the socio-economics and economics. At the integration meeting with all 24 specialists, we considered potential impacts within their specific disciplines. The specialists assisted in identifying those studies that would influence the site selection. For example, where the significance was equal across all three sites, the outcomes of that study was excluded for the purposes of site selection. This is not to say that any one of the specialist recommendation and impacts are ignored, there are mitigation measures included in the EMP for all disciplines (appendix F). Ms Ball therefore disagreed with the speaker that environmental aspects were not looked at. The specialists helped us integrate the findings of the assessment of the alternatives. Our assessment now includes the factors such as cost implications and socio-economic implications.
4	I&AP Pearly Beach Resident	The speaker understood that there are new technological advancements of these nuclear power stations, i.e. new ways that do not use water-cooling. If that is true, it was questioned why we still using water-cooling technology?	Mr Stott: Certainly, even coal-fired power stations that we have in South Africa use dry cooling. There are nuclear power stations that use dry cooling but there are no power stations that use zero water for cooling. For a nuclear power station, for safety reasons, high volumes of water are always needed as a back up should you still need water for cooling. Even if you have a dry-cooling system, you need to have back-up water, e.g. a dam or near to the sea. At the moment in South Africa, nuclear power stations near

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			the coastline are needed for the use of the sea for cooling purposes. If the sea is not used, potable water would have to be used. South Africa is a water stressed country and cannot afford to use potable water for cooling purposes. The less water we use for industrial use, for power generation, the better.
		A second point was raised that no one presently views Eskom as financially stable. Where is Eskom getting the money for these Nuclear Power Stations?	Government, together with Eskom, is looking at the funding options for the expansion of the electricity supply system in South Africa. For any kind of power station, regardless of whether it is a nuclear, coal-fired or renewable energy power station, funding is required. This is linked to a process called the Integrated Resources Plan (IRP), which is being done by the Department of Energy. The IRP considers how much the demand for electricity is likely to grow over the next 20 years, what kind of power stations should be built to meet that demand and who should build and operate those power stations. The cost of the different kinds of power stations is one of the considerations taken into account. The licensing process of the National Energy Regulator of South Africa also considers the impact of any new power stations on the electricity prices.
5	Mr John Williams Save Bantamsklip Association	Mr Williams alleged that the Bantamsklip site is flawed and he will make submissions and commentaries right up to the end of the deadline date. He had 3 questions The first question concerns the site sensitivity map.	Mr Greeff: If I understand you correctly, the property, which you are talking about, is part of Walker Bay State Forest but is managed by Cape Nature at present. Eskom is busy talking to government regarding the purchase of the property which extends to the Bantamsklip site.

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		He reminded everyone that the presenter stated that Groot Hagelkraal – was registered as site 72, registered before Eskom expropriated it. The presenter had correctly said that the SA Heritage status is an unregulated status so does not have legal status. The question Mr Williams asked is related to the fact that the site has occupied Soetfontein. He enquired if Eskom had bought Soetfontein and have they negotiated the use of Pearly Beach Nature Reserve with Cape Nature? Close examination of the map shows that the boundary is the Cape Nature Reserve. Mr Williams commented that this discussion is very interesting because they have already dug into the area and already expropriated the Cape Nature Reserve. The gentleman had stated that the whole area is called Waterford and belongs to the SANParks. The point of what is being discussed about is an area of a congregated protected area. Presently, Cape Nature is managing it very well. The point of the argument is that that area is part of a system of national and international importance. The Agulhas National Park extends and consolidates and enhances itself. What is happening is that by Eskom capturing that piece of land it has hamstrung the ability of the area to develop as an ecotourism area because of ha threat that is constantly hanging over the stakeholders' head. He went on to say that in his opinion, Eskom will come and build a Nuclear Power Station whenever they feel like doing so.	Another correction that I can help you with is, the special section, which runs to the north, site 298, which has been registered by Eskom. The farm Groot Hagelkraal had been a proclaimed nature reserve, when Eskom bought the property but that proclamation lapsed on the purchase.

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		The threat of this power station is hanging right in the heart of our biodiversity area, in fact in the centre of endemism or the most endemic area of our country.	
6	Mr John Williams Save Bantamsklip Association	Mr Williams asked about the envelope criteria: what they heard is that authority is being sought for 4,000MW or 10,000MW. The fatal flaw here is that they cannot define the plant they are using. He would like to understand, how do you deal with the fact that you don't know what plant you are building? He asked someone to explain the envelope of criteria. He compared this scenario to being told to buy the car, in the cubby hole, there will be the manual, you do not know any details about the car such as what the engine size is, etc.	Ms Ball: Eskom knows exactly what technology type they intend to use, it is a Pressurised Water Reactor (PWR), but they do not know the plant type. A correction to Mr Williams' statement is needed. She agreed that they have been working with an envelope of criteria, (of technical and environmental criteria) and it is a comprehensive envelope of criteria contained in Appendix C of Draft EIR. If an environmental authorisation were received Eskom would be required to build a plant that is within these criteria. This EIA is for 4000MW at one site.
7	Ms Amanda Jephson Save Bantamsklip Association Strandveld Tourism and Conservation Association	Ms Jephson then read an extract from the EIA report. According to the specialist, Bantamsklip is situated within a sensitive Overberg Region, the site is very sensitive on a number of Late Stone Age Heritage dimensions. By Western Cape standards, the preservation and volume of archaeological sites is exceptional. Mitigation will be lengthy, expensive and resource intensive. Furthermore, the natural heritage landscapes of the place are excellent and make a real contribution to the sense of place in the region. The power station is likely to be visible over a very wide area (bear in mind of how flat it is here). The transmission lines, which will leave the site, will impact the scenic qualities of some of the iconic and treasured landscapes.	Ms Ball: I will have to verify the quote. I am glad that you have read it and say it is in our specialist study. In a number of specialist studies, the specialists have rated the impacts with medium to high significance. The specialists have also looked at potential mitigation measures. We have examined and discussed the report with Eskom and the 24 independent specialists. Recommendations have been built into the EMP and should any of the sites be authorised, Eskom would have to comply with the mitigation measures.

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		She stated that she was endorsing what Mr John Williams had said. It is the Eastern entrance to the Cape Agulhas National Park. Can you imagine the tourists coming through to the Agulhas National Park and seeing this monstrosity?	
8	Ms Amanda Jephson Save Bantamsklip Association	Ms Jephson reiterated that it is stated that in the specialist report that Bantamsklip is highly visible and the visual impact cannot be mitigated. She does not understand how this matter is going to be dealt with.	**The comments received are being discussed with the visual specialist and if required the report will be modified when finalised.**
9	Mr John Williams Save Bantamsklip Association	Mr Williams noted that the end of the 2nd question was answered but not satisfactorily. Koeberg is 1 900 MW and here 4000MW or even 10 000MW is being discussed. The answer given was that the specialist would deal with all of this, does that mean that the specialist will deal with 2 or 3 units in each site?	Ms Ball: This EIA is for one nuclear power station of up to 4 000 MW, depending on the plant type this could be 2 or 3 units. In the site sensitivity analysis, the specialists looked at sensitive areas on the site, how many units can each site accommodate and identified any areas on the sites, which are not considered sensitive. 31 hectares is required for one Nuclear Power Station of 4000MW. Should Eskom need to build another Nuclear Power Station, they will need to undertake another EIA process.
10	Mr John Williams Save Bantamsklip Association	Mr Williams said that an 800m buffer was referred to, he wanted to know what is a buffer zone?	Mr Heydenrych: A buffer is an area, which will be imposed by the National Nuclear Regulator in which no one may reside. The main purpose of a buffer is for safety. It means the power station needs to be located away from the road reserve.
11	Mr John Williams Save Bantamsklip Association	Mr Williams stated that there are no seismic regulations in South Africa and he questioned the use of USA seismic risk regulation criteria.	Mr Stott: Yes, you are correct. The seismic criterion for the site is not yet promulgated in South Africa. The National Nuclear Regulator (NNR) is accountable for this aspect. In the absence of regulatory criterion, we have been using USA, and we have used various international standards as a baseline from the International Atomic Energy Agency.

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			We have a seismic design and all stations are designed based on Peak Ground Acceleration (PGA) values. You may have noticed that Koeberg's PGA was higher. The existing Koeberg nuclear power station had to be designed in a manner, which considered the PGA value, which necessitated additional design.
12	I&AP	This I&AP noted that there is a fault line in Bantamsklip; it would seem irresponsible to even consider putting in a Nuclear Power Station at Bantamsklip. Why put it there?	Mr Stott: There is no upper limit for designing a nuclear power station intended to be constructed in an area with the potential for seismic activity. The existence of fault lines and hence potential seismic activity means that building would cost more and also take more time to build. It is all about the time it takes to do additional design and cost associated with an area which has higher seismic potential.
13	I&AP	A question was raised as to how many reactor units will be needed in order to generate 4,000MW? There are 2 units in Koeberg, why are more units required?	Mr Stott: It was up to 4 000 MW because at the time of starting this Nuclear-1 EIA, we were looking at two technologies. One of the technologies was 1 100 MW and the other one was for 1 650 MW, which would have translated to 3 300 MW if there were either 3 units (for the 1 100 MW technology) or 2 units (for the 1 650 MW technology) respectively per site. So, we instructed the environmental consultant, to be conservative, and to go for 4 000 MW.
14	Mr John Williams Save Bantamsklip Association	Mr Williams advised the Environmental Assessment Practitioner that the Oceanographic Specialist, Appendix E is not found on the website.	Noted with thanks. Appendix will be re-loaded on the website.

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15	Mr John Williams Save Bantamsklip Association	Mr Williams requested Eskom to exercise its corporate responsibility and that they consider very seriously selling Groot Hagelkraal (their site) to Agulhas National Park. An application is to be submitted to UNESCO for a World Heritage Status for the 20km radius of Bantamsklip between the Dyer Island Nature Reserve and SANParks. It is believed that the criterion for a world heritage status actually exists and that Eskom should retreat from this position, which people believe, is unsustainable and has no mitigation measures.	Comment noted.
16	Mr Eugene Hendry Pearly Beach Residents Association	Mr Hendry asked if Eskom is looking for more sites along the coastline?	Mr Stott: Certainly, if the government in its Integrated Resource Plan, which they have indicated that they will publish in June this year (2010), indicate that they are going for more nuclear power stations, we would have to find more nuclear power station sites.
17	Ms Amanda Jephson Save Bantamsklip Association	I would like to pick up on this World Heritage Site and archaeology. ❑ The statement of significance in your report states that Bantamsklip is highly significant in terms of Late Stone Age, which is 50 years (date is definitely wrong) ago and Middle Stone Age archaeology, which is 300 years (date is definitely wrong) ago. It further states that Late Stone Age of this area is directly linked to the heritage of South Africans who are alive today and is automatically protected by Section 35 of the National Heritage Resources Act. I would like to ask, with respect to the requirements of the NHRA, how is that protection going to help here?	Ms Ball: The specialist is from UCT and has extensive knowledge of the study area. One of the key recommendations in the Draft EIR is that extensive *in situ* excavations should be undertaken on site where Eskom wants to build a nuclear power station. If Eskom want to start with construction, Eskom will have to start with excavations quite early. Eskom have already established from the archaeologist as to how long it would take to compete the excavation. In terms of the protection of the NHRA, all recommendations that have been made by the specialists are in line with the NHRA.

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		❑ In *situ* excavations being done are mentioned in the report. Ms Jephson enquired when these excavations are going to take place? ❑ She also wanted clarity on the length of time for implementing mitigation measures, which had been mentioned as long periods. She asked if Eskom is prepared to wait for long periods to build the nuclear power station since it is urgently required.	Ms Herbst: Excavations can take up to 6 months. However, the important point is that no matter how long it takes it has to be done if it means getting more resources to complete the excavations, Eskom will have to do that. No matter how long it takes, we have to complete the relevant excavations prior to commencing with construction.
18	Mr Mike Ravenscroft Kleynkloof Private Nature Reserve	Mr Ravenscroft's issues concerned spent fuel: ❑ His understanding is that there are 3 categories of the waste and the high level/ spent fuel is the most dangerous. ❑ He also understands that 2 types of waste will be taken to Vaalputs. Seeing the excavations that are done for waste levels 2 and 3, shows that Eskom is worried about nuclear waste. ❑ Nuclear waste will be carted to the Northern Cape on South African roads and South African roads are not the safest in the world, he asked whose responsibility this will be. ❑ He further enquired, in terms of transporting of waste from the site to Vaalputs, who is going to guarantee the safety of transportation.	Mr Stott: Whatever radioactive waste is generated at the power station would eventually need to be transported to the national nuclear waste depository site. At this stage, waste is transported via road to Vaalputs under the jurisdiction of Dept of Transport and also under the National Nuclear Regulator. They use the International Atomic Agency standards for the transport of radioactive waste. So, we have to comply with those standards. ❑ Low and Intermediate level waste - the levels of radiation outside the container are well below the limits. For example, in similar transportation methods, which are used in Germany, Japan, UK, and France, you must be able to stand next to the trucks and radiation levels must be below the required limits. Tests are done and are in accordance with the National Nuclear Regulator (NNR). We have to meet the regulations before radioactive material can be transported to the repository site. ❑ High-level waste, which is a category 3, at this stage, the Vaalputs site is not licensed to store high-level waste. In fact, there is no final repository site in South Africa that is licensed for high-level waste storage. The

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			government promulgated legislation last year, the National Radioactive Waste Disposal Institute This body has been tasked to develop a repository for high radioactive waste.
19	Mr Marc Brindeau Franskraal Ratepayers Association	Mr Brindeau asked where sediment comes from when offshore disposal of sediment is mentioned.	Mr Heydenrych: Before the power station is built, an excavation needs to be done for power station foundations. Because a power station needs to be built on bedrock, as a result of the excavations, you have to dispose of the spoil either on land or in the ocean. Our recommendation is that the spoil be disposed in the ocean rather than on land because on land it would cause a much larger footprint.
20	Ms Amanda Jephson Save Bantamsklip Association	Ms Jephson posed a 3 part question: ❑ What is the projected quantity of effluent from the proposed nuclear power station in cubic metres per annum? ❑ What would the projected content of Strontium 90 be in Becquerel per annum? (Importantly, Strontium 90 is very dangerous). ❑ What would the projected radioactivity be in a sample kilogram mass of abalone and black mussels in the vicinity of Bantamsklip? Those are filter feeders.	Ms Ball: The response will be checked with the specialists, who are internationally renowned marine specialists, e.g. Prof Griffiths. If information is not available on the existing reports, we shall provide responses in the Issues and Response Report. Ms Ball indicated that these are very important questions and will provide feedback to Ms Jephson. ***Pers. comm.*** **Professor Charles Griffiths (Marine Specialist) 10/05/2010:** **1. The quantity of effluent released at the Koeberg Nuclear Power Station is approximately 27 km^3/s. This is however not significant when compared to the total volume of fluid (sea water) that passes any particular point on the South African coast line in a specified period.** **2. A mussel filters through approximately 1 – 2 litres of water per day but does not abstract all of the**

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			organisms and elements from the water. In some instances mussels have been used as passive monitors of heavy metal contents in seawater but in terms of radioactivity it is important to take into account that some background levels of radioactivity already exists. **The following comment received from Dr. T.B. Robinson (Marine Specialist) also has reference:** **Since the 1940s human activity has resulted in varying degrees of contamination of the world's marine environment with anthropogenic radionuclides. Globally, the primary source of this contamination is fallout from over 520 atmospheric nuclear weapons tests (Friedlander et al 2005). These radionuclides now occur alongside naturally occurring compounds at varying concentrations throughout the world's oceans. In a recent review of radionuclides in the marine environment Friedlander *et al.* (2005) report the occurrence of Cesium (Cs-137) and Strontium (Sr-90) in bivalves along the west and east coast of America, in fish, mollusks, algae, seawater and sediment in Japan, in fish, seawater and sediments from the Arctic and related seas, and in fish, mollusks and crustaceans in the north Atlantic region. Equivalent data are not available for the southern hemisphere.** **Such background levels of radioactive Cesium were detected in monitoring in the vicinity of Koeberg Nuclear Power Station (Nuclear Power Station) prior to the operational phase of the station, when Cs-137 was**

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			detected in a fish. Since then Cs-137 has been recorded in mussels, sand mussels and fish as part of the routine environmental monitoring programme at Nuclear Power Station (Alard 2005). The levels detected at Nuclear Power Station have been below the levels at which further investigations or compulsory reporting to the National Nuclear Regulator is required (Alard 2005). Strontium (Sr-90) has not been detected in marine organisms during routine radioactivity sampling at Nuclear Power Station (Alard 2005). **Due to the very few organisms in which radioactive Cesium has been recorded at Nuclear Power Station, the low concentrations at which it has been recorded at and the lack of detection of radioactive Strontium, these compounds are not deemed to have a significant (or even detectable) impact on the marine environment around Nuclear Power Station Due to the design of the proposed Nuclear-1 plant, coupled with the experience gained at Nuclear Power Station, there is no reason to anticipate that contamination by Cesium or Strontium would occur as a result of the Nuclear-1 development.** **Alard, M.M.M. (2005) Environmental survey laboratory quarterly report (April - June). Submitted to Koeberg Nuclear Power Station.** **Friedlander BR, Gochfeld M, Burger J, Powers CW 2005 RADIONUCLIDES IN THE MARINE ENVIRONMENT A CRESP Science Review. pp 96.**

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21	Ms Carla Roelofse I&AP	Ms Roelofse enquired about the financial impact be, in terms of the following: ❑ Business benefit in the area ❑ Impact of work force in the area While people are working in the area, will Eskom provide the infrastructure, will there be a permanent work force, etc and where will they be housed?	Mr Heydenrych: The Social Impact Assessment (SIA) has recognised the potential impacts arising from the influx of workers during construction. The SIA has also recognised that there may be work for additional people who come from outside the area seeking jobs. This has been recognised as a potential impact. In terms of permanent or temporary work force, Eskom has been advised to work closely with local authorities to identify an area, which is suitable for housing, construction camp and other associated infrastructure.
22	Mr Malcolm Streaton	Mr Streaton wanted to know how many people will work at the plant at any stage, and what the highest number will be during construction. He enquired where would people be housed during construction?	Mr Heydenrych: Approximately **7 700** people at peak. Not all the time. (**A figure of 5 000 was provided at the meeting and this has been updated**). Ms Herbst: Eskom does not have all the answers at this stage, we were waiting for the selection of the preferred site. Once a site has been selected, Eskom can initiate detailed discussions with local authorities. It is during the discussions that details around the how and where we would accommodate that number of people will be resolved. Each area would be different, as an example, if we were to go to Duynefontein, it is a different scenario because you have the whole of Cape Town to absorb this number of people. However, if we were to come to Bantamsklip, we would need to have a special plan due to the lack of infrastructure. Just to share our experiences in Lephalale, which is quite a small town in the Bushveld in Limpopo Province, the contractors building Medupi power station needed to accommodate approximately 7 000 people. In

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			this case single quarters were used to accommodate approximately half of the employees. This was carefully planned and included a recreational area to try and keep people in the construction village. In towns, there were mostly permanent structures, which would remain after construction has been completed. These accommodated both single and married employees. Social issues such as supporting education, clinics and local infrastructure. The Eskom Foundation investigates the needs of the community once a preferred site has been selected and identifies areas where support can be given.
23	Ms Amanda Jephson Save Bantamsklip Association	Ms Jephson stated that in fact, this is one of the aspects that has contributed to the exclusion of the Bantamsklip site as a preferred site. It is mentioned in the executive summary that it would be extremely difficult due to infrastructure requirements, destabilisation of the community, etc.	Ms Herbst: It is one of the issues that have been considered.
24	Mr Eugene Hendry Pearly Beach Ratepayers Association	Mr Hendry wanted to know about health impacts, and asked if there is any recourse from Eskom for the residents. He also enquired if there would be compensation during construction and operation.	Ms Herbst: The EIA has identified some of those potential impacts, for which the mitigation measures are included in the Environmental Management Plan, which we have to comply with. If Eskom or the contractors do not comply with the Environmental Management Plan (EMP), construction is stopped. So there is compliance monitoring. The EMP is a legally binding document. In terms of other aspects that may not have been picked up by the Environmental Impact Assessment, it would obviously be looked at, on a case-by-case basis. In some cases, we establish monitoring committees, which are representative of the relevant authorities, specialists and members of the community. If there is a legal issue, the

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			matter follows the legal process. But in most instances, cases are resolved without having to go the legal route.
25	Mr John Williams Save Bantamsklip Association	Mr Williams added the following issues regarding the marine component to the minutes: ❑ Because of the proximity of Dyer Island, we would like to request that the modelling of the thermal plume, which is triggered by the suggestion of the pipeline, addresses the intake and outlet of the plant, bearing in mind that the pipe might be approximately 6 km from Dyer Island. ❑ There is a noise, submarine noise level and there is a sediment transfer. ❑ The current is predominantly in the south-easterly direction and the prevailing winds would be stronger in the south west direction rather than north west direction. In other words, that current and prevailing drift would go towards the Dyer Island. ❑ Because of the sensitivity of the area we are asking that the marine study actually models over 4,000MW, 6,000MW, 8,000MW and 10,000MW.	Mr Heydenrych: The oceanographic specialist based her assessment on the oceanographic circulation patterns and in which direction the water flows and in which direction the spoil would be deposited, etc. The marine specialists are in fact the same specialists who are doing monitoring at Koeberg Nuclear Power Station. Therefore, the marine specialist is well acquainted with the modelling scenarios of a nuclear power station
26	Mr Rudy John	Mr John asked how the noise affects the whales?	Ms Ball: We have noted the comment and will take that back to the noise specialist. I am however confident that the whales have been considered as the marine environment has been an area of concern around Bantamsklip. ***Pers. comm.*** **Adrian Jongens (Noise Specialist) 10/05/2010:** **The noise specialist has confirmed that there will be no impact on the whales as a result of any sound generated by the proposed Nuclear Power Station.**

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1	Mr Mike Kantey CANE	Mr Kantey made reference: Slide 11, bullet 1: He said he finds it very difficult to understand scientifically, how the environmental impacts of a nuclear power station plant which pertains to human health can be analysed, if the type is unknown. How can we the impacts of emissions be scientifically analysed when we do not know what we are talking about? The impacts are described using an analysis of another power plant. The analysis using the car (Golf or Mercedes) does not work, as one needs a scientific analogy. He asked for an explanation and for scientific clarification, not using the car analysis - he wanted to know how impacts will be assessed? There is an AP 1000 and EPR - which one is being referred to?	Ms Ball: I would like to correct Mr Kantey, we do know the technology but not the plant type. It is a technical correction. The specialist used data, which has been based on an envelope of criteria and Eskom can explain how they arrived at the data that was used for the assessment. Ms Ball: We know that it is a Pressurised Water Reactor but we do not know the plant type (AREVA, Westinghouse etc).
2	I&AP	There was an enquiry regarding Scoping where it was asked if it is designed to see if there are any showstoppers on the Nuclear-1 project?	Ms Ball: Arcus GIBB undertook Scoping - which is aimed at collating issues, and to consider if there are any issues that need to be investigated further. Now we are in the Environmental Impact Assessment, which assesses the issues raised during the Scoping Phase. Based on the specialist investigations, there are no fatal flaws on any of the sites, once mitigation measures are implemented.

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3	Mr Danie de Villiers Strandveld Tourism and Conservation Association	Mr de Villiers enquired about the term feasible – if the site is not feasible for Nuclear-1, it cannot be feasible for Nuclear 2 or 3. He asked for the accurate meaning o the term feasible.	Ms Ball: I think Mr Heydenrych probably used the wrong terminology there. We have stated before that none of the specialists found fatal flaws on any of the alternative sites. The EIA Regulations talk about feasible and reasonable alternatives. Bantamsklip is a feasible alternative but it is however not our preferred alternative site for Nuclear-1. We do not know the future of the sites, but the sites which are not preferred for Nuclear-1 may, however, be used by Eskom for Nuclear-2 or Nuclear-3. An EIA would be undertaken for Nuclear-2 or Nuclear-3. The economic and social circumstances may have changed by the time Nuclear-2 or Nuclear-3 EIA studies commence. It would also have to be determined at that time if the alternatives considered are reasonable and feasible alternatives.
4	Mr Mike Kantey CANE	Mr Kantey put forward that he had a lot of questions and was very conscious of the nature of public participation. He was not sure how to handle questions given the time allowed and given the nature of concerns. He said he would not like to miss the opportunity for the public to listen to some of the concerns, which do not only concern him as CANE Chairperson, but also all constituent organisations, including Namaqualand, Pelindaba, Bantamsklip, etc. He finds it very difficult for an ordinary South African citizen to participate fully in a mandatory and constitutionally driven process. He asked for guidance from the Chairperson and the house as to how to	Facilitator: When we started the meeting, we had an agreement in principle that we can continue until 20h30, if need be. Ms Ball: This is not the only manner in which to participate but there are many other methods of participating in the process. The Facilitator confirmed with the participants that it was agreed that Mr Kantey would be given an opportunity to ask all his questions on an alternate basis.

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		proceed with participation when there are 40 minutes to ask and debate questions.	
5	Mr Leonard le Roux I&AP	Mr le Roux asked why the two Northern Cape sites, were originally rejected?	Ms Ball: In the Scoping Phase, the two sites were considered not feasible and reasonable for Nuclear-1. They would require large transmission corridors all the way to the national grid and extensive infrastructure construction, so they were scoped out based on the transmission integration.
6	Mr Tertius Carinus SANParks – Agulhas Biodiversity Initiative	Mr Carinus said that it is mentioned that there are only two alternatives in South Africa for base load, meaning coal or nuclear energy. He had asked the following question earlier on in the process. This area is located in one of the hotspots for wave energy in South Africa and in the world. Why is wave energy not seen as an alternative for base load?	Mr Stott: Wave energy is certainly something that we are investigating and researching in Eskom but it is not commercially available in the large quantities that are needed in South Africa. It is not available in the range of 4 000 MW that we require from this particular nuclear power station.
7	Mr Tertius Carinus SANParks - ABI	Mr Carinus enquired about the conservation value adding at Thyspunt site and asked if this would be regarded as an offset measure? He feels it cannot be mitigation because there is an impact on the 31 hectares of the nuclear power station.	Ms Ball: You are certainly correct. There are various suggestions and recommendations from our specialists for Eskom to purchase land. Offset measures are an option and have been recommended by some of the specialists.
8	Ms Katrin Pobantz Tesselaarsdal Action Group	Ms Pobantz asked for an explanation regarding the key criteria quantification for the sites. The scores for Thyspunt and Duynefontein have been supplied but not for Bantamsklip. She wanted to know the score for Bantamsklip? Follow up question: She asked if it was a significantly lower score compared to Thyspunt and Duynefontein.	Mr Heydenrych: In the methodology we went through, we did the quantification, after we had already arrived at a conclusion that Bantamsklip was not a preferred alternative for Nuclear-1. So we did not score Bantamsklip. Mr Heydenrych: We did not give Bantamsklip a quantified score. In terms of the qualitative impacts, we know what would occur on the site together with the cumulative impacts of transmission lines – and those would have been

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		Ms Pobantz found it quite strange that Bantamsklip was not scored and would be interested in knowing the scoring.	higher at Bantamsklip than any of the other sites.
9	Mr Danie de Villiers Strandveld Tourism and Conservation Association	Mr de Villiers, as a point of clarity, noted that people have been told that the meeting is for a nuclear power station site and now they were told that Bantamsklip nuclear site has been scoped out using the cumulative impacts of transmission lines. He went on to ask how transmission lines are used for assessment. He wanted to know if the transmission lines were back in the discussion again (through the back door).	Ms Ball: As indicated earlier, the Scoping phase of the three transmission lines has been undertaken. We have the Scoping Reports, we have the list of issues and many of our specialists are working on both the transmission lines and the nuclear sites. We cannot pre-empt the recommendations and conclusions of the transmission line EIAs. That is why the Bantamsklip site was not scored and excluded as an alternative for Nuclear-1. However the assessment has taken note of the specialist reports and integrated them in the report.
10	Mr Danie de Villiers Strandveld Tourism and Conservation Association	Mr de Villiers said that he had skimmed through the report and thinks it is a huge job and Arcus GIBB did a fantastic job, he added that he hoped that they had been paid enough. He then pointed out the following: ❑ The report is really Arcus GIBB's report and is not Eskom's. ❑ Arcus GIBB has to be an independent Environmental Assessment Practitioner (EAP). ❑ All the statements written in the report are supposed to be Arcus GIBB's statements. ❑ There is a problem with some of the statements, which he saw in the report, he can see it is Eskom's statement and not Arcus GIBB's, as an independent EAP. He then highlighted for the purposes of the meeting, the whole issue around positive benefit if a Nuclear Power Station is built at Thyspunt and Bantamsklip –	Ms Ball: There are 24 different specialists, the assessment identified positive benefits associated with the Nuclear Power Station at each of these sites. This has come up time and time again. Please read those specialist studies because that is the origin of the information of potential positive benefits. Arcus GIBB has taken note of the specialists' recommendations and have obviously integrated them into our report.

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		because there is going to be a private conservation area. He pointed out that the whole of Strandveld is full of private nature reserves. There is an implication or impression given that Eskom is now going to do something special. He wanted it noted that they can do it themselves. The 2nd point he wanted to make is that if Eskom does not build a Nuclear Power Station, then they would have to sell the property and others may buy it and do something terrible on the property.	
11	Mr Mike Kantey CANE	Mr Kantey said he would like to follow up directly with Mr Danie de Villiers' contribution by looking, specifically at Slide 34, bullet 3: He read the following into the record of the meeting for the purposes of the issues trail: "Perceived risks associated with the Nuclear incidence could potentially lead to a change in the attitude and behaviour, reliable information and support……" He said what this tells him in the greater languages of literature is that - people have perceptions and Arcus GIBB has the proof. There is a lot of stuff that has been said orally and should be available in the recording. He would like it to be recorded that: ❑ What the consultants are saying is that they have facts and what the public is saying is a perception. ❑ This to him is prejudice of the first order, what the	Ms Ball: I would like to re-iterate that we value all your comments, suggestions and input from many local experts. This particular slide comes directly from the executive summary of the Social Specialist Report., We have paraphrased it, but it comes directly from that report. The point has been noted and I will take it back to the specialist.

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		consultants are telling everyone is that the public are incompetent, unable to make a scientific assessment on the merits of the case ❑ The public are cognitively and perceptually incorrect. We are like retarded children. The consultants are the expects, the scientists and engineers, they will tell the public what is true and the public will never manage to know what is true because they are too stupid. ❑ He suggested that everyone Google " manage public perception" when an industry of managing public perception will be found. This is what the public are witnessing tonight – and this is what they have witnessed previously; it is management of public perception. He, representing many constituents, would like to object to that treatment, from a constitutional perspective. He stated that his question with relation to a word "perceived" had not been answered – he wanted to know what is it doing in the slide, which has Arcus GIBB's signature? There have been learned journal references, volumes and volumes of submissions, and there is a very learned submission from Danie's group (Strandveld Tourism and Conservation Association), extremely learned, and what the consultants are telling us is that everything that is in their submission, with respect, is calculated as "perceived" and not true and that's the	

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		linguistic interpretation. You cannot use that word with respect to submissions made by the public.	
12	Mr Ettiene Fourie SANParks	Mr Fourie directed his question to Eskom and asked how soon do they think they will need Nuclear 2 and 3 – when will these other sites be activated?	Mr Stott: As Ms Ball mentioned in one of the slides, the demand for electricity is growing at greater than 4%. Currently it is around 7% year on year. There is a continuing increase in the demand for electricity. The Government is working on the Integrated Resource Plan (IRP) 2. The previous version IRP1 which was published in December 2009 only went up to 2013. They are currently working on an Integrated Resource Plan for the next 20 years. The release of IRP 2 – expected in June 2010 - would inform us if there would be a need for Nuclear-2 and Nuclear-3. From Eskom's perspective, we believe that Nuclear-2 would be needed two (2) years after Nuclear-1 starts construction. In other words, in the second half of the year, if the Government decides on nuclear, we would have to submit the EIA application for Nuclear-2.
13	Ms Katrin Pobantz Tesselaarsdal Action Group	Ms Pobantz asked if the desalination plant was considered in the initial application by Eskom for Nuclear-1? She also asked if the desalination plant would not be subject to a separate EIA?	Ms Ball: Yes, a desalination plant is required and it has been assessed as part of the Nuclear-1 EIA. All specialists have assessed potential impacts of a desalination plant and in the alternative section you will see that we looked at the impact of brine (concentrated salty water).

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14	Mr Kobus Visser Tesselaarsdal Action Group	Ek wil net oor een ding duidelikheid kry. In die hele voorlegging word daar nie baie aandag gegee aan een ding nie. Julle het daardie punt uitgelaat wat julle op Hermanus gedoen het, naamlik om elke ding 'n punt te gee van wat sy belangrikheid was in die proses van besluitneming. Onder andere het julle daar gesê Marine Envornment het net een gekry waar goed soos sysmologie vier gekry het. My vraag is dit, hoekom is Marine Environment so laag geskat en tweede ding wat ek net vir Eskom wil vra is hulle moet net vir ons kwantifiseer hoeveel ton afval wil julle in die see inpomp en hoe diep wil julle dit in die see inpomp? Is daar 'n Impak studie gedoen op hierdie plek in die see en wat gaan daar gebeur? <u>Translation:</u> Clarification is required on one matter; in this presentation not much attention is paid to a certain issue that was presented at Hermanus, and has been omitted. Each issue was awarded a value according to its importance in the decision-making process. Amongst other things, it was stated that the Marine enviornment received a "1", where other matters such as seismology received a "4". Why is is the Marine Environment so low? Secondly, can Eskom quantify the tons of waste that it will be pumping into the sea and how deep into the sea will this be pumped? Has an impact study been done in terms of where this pumping will take place and what the effect will be?	Die Marine Bioloog het spesifiek na daardie impakte gekyk. Hoekom dit nie net so belangrik ge-ag is as al die ander impakte nie, is omdat al die impakte gemitigeer kan word en dat dit die in Marine Bioloog se opinie is dat al die ander impakte laag genoeg is dat dit aanvaar kan word. Die Marine Bioloog het spesifiek na die omgewings by al drie terreine gekyk. Die materiaal wat uit die pyplyn gaan kom gaan kom, gaan is ongeveer 20 tot 25m onder seevlak wees en sal ten minste 'n kilometre van die hoogwater merk af wees. <u>Translation</u> The marine biologist specifically looked at this impact. The reason why this was not seen as important as all the other impacts, is that all the other impacts can be mitigated and the Marine Biologist is of the opinion that if all the other impacts are low enough, that this will be acceptable. The marine biologist specifically looked at all three alternative sites. The material that will be pumped offshore by pipeline, will be approximately 20 to 25 m below sea level and at least a kilometre from the high water mark. The quantities of soil, accordoing the Marine Biology Assessment, is 10.07 million m^3 spoil from the excavation of the intake tunnel, intake basin, nuclear island and turbine hall.

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15	Mr Tertius Carinus SANParks – Agulhas Biodiversity Initiative	Daar was 'n redelike sterk inset gelewer van landbou se kant af rondom die impak van die Transmissie lyne op die landbou ekonomie. And I did not see that in the Economic Impact. Waar is daardie insette, want dit het 'n redelike groot impak in die Landbou bedryf? Translation: A relatively strong contribution was made by agriculture regarding the impact of the transmission lines on the agricultural economy. This is not reflected in the Economic Impact study. Where are these contributions recorded – there is a relatively big impact on the Agricultural economy.	Soos Me Ball voorheen gesê het, hierdie spesifieke impak studie gaan net oor die Nuclear-1 Kernkragsentrale en nie oor Transmissielyne nie. Elke perseel besig met hulle eie omgewingsimpakstudies vir die Transmissie lyne. Daar is drie impakstudies om te kyk na hierdie terreine, so ek kan nie vir jou 'n antwoord gee voordat daardie Transmissielyne se Impakstudies voltooi is nie. Translation: As Ms Ball stated earlier, this specific impact study is only for the Nuclear-1 power station and not for the transmission lines. Each of the proposed nuclear sites has independent studies that are being conducted for the transmission lines. No answers regarding the outcomes of these studies can be provided at this stage as they are still ongoing.
16	Mr Mike Kantey CANE	Mr Kantey had a follow up question on emissions: ❑ Impact of Strontium 90 on effluent. ❑ Impact in terms of the Becquerels per kilogram per mass. He felt that the information given was irrelevant. He did not want to go through a presentation on what is happening at Koeberg. He simply needs a response in becquerels per kilogram per mass. He added that the data set or the information is not in the report.	Mr Heydenrych: The marine biologist did look at this. Ms Ball: The specialist should have considered this and if the information is not there, we will get the specialist to provide the specific information.

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17	Mr Tertius Carinus SANParks – Agulhas Biodiversity Initiative	Mr Carinus said that he finds one part of this EIA, a grey area regarding Bantamsklip. The site is not important but too sensitive, but it is still potentially number 3. He wanted to know when they will hear from Eskom that the negative impacts associated with Bantamsklip make it unviable because of the length of transmission lines, when it will no longer be considered. He asked what they could do to help them take it off the list of potential nuclear power station sites. He went on to explain that SANParks is on both sides of the Bantamsklip site. So the chances of the area becoming a national park due to its conservation status are significantly higher.	Ms Ball: In terms of our EIA as previously explained, all specialists have found that with mitigation, there are no fatal flaws on any of the alternative sites. It has also been said that Bantamsklip is not the preferred site for Nuclear-1. I cannot comment on Nuclear-2 and -3. Mr Stott: Bantamsklip is still on our list. Duynefontein is also on the list. Thyspunt is also on our list. The two sites in the Northern Cape are still on our list. So those are the five (5) sites, which we have on our list at the moment. The specialist studies have found no fatal flaws on any of the sites (and that is the information we have been given). So there is no reason for Eskom to take any sites off the list.
18	Mr Mick Dalton Agulhas Biodiversity Initiative	Mr Dalton asked for an explanation for the criterion for a fatal flaw. He also asked for an example of a fatal flaw.	Ms Ball: A fatal flaw would potentially be an impact, which could not be mitigated. That is, an impact that would be of extremely high significance, even after mitigation. SANPArks: A transmission line through the Kruger National Park is one example. Ms Ball: A pipeline of iron ore through the Kruger National Park from Mozambique.
19	Mr Danie de Villiers Strandveld Tourism and Conservation Association	Mr de Villiers noted that legislation and the EIA regulations say that cumulative impacts have to be considered. He said that they have heard that if Eskom wants to extend the nuclear power station, they would have to commission a new EIA, and this is because of	Ms Ball: During this EIA phase, in the Terms of Reference (TOR) of specialists, specialists were requested to identify any fatal flaws in the various sites. None of the specialists identified a fatal flaw on any of the sites. We also asked the specialists to look at potential cumulative impacts.

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		cumulative impacts and they are extremely important. Cumulative impacts in this report have been used to decide that Thyspunt is a preferred site. This is stated in the EIA report. However, he feels that cumulative impacts have not been considered when it comes to Bantamsklip and a statement is made that there are no fatal flaws. There could be a fatal flaw at Bantamsklip. It has just been stated that a fatal flaw is a transmission line through the Kruger National Park. Now, there is a proposed transmission line through the Cape Agulhas National Park. That is a fatal flaw. There is no consistency with the use of cumulative impacts. If cumulative impacts were in the TOR, why are cumulative impacts being used to decide that Bantamsklip should not be a preferred site and that Thyspunt should be? It is not a question of pre-empting a decision; it is a concern that cumulative impacts are being used to make a decision and to make a pronouncement. Mr de Villiers said that it just does not make sense to make another pronouncement and say that there are no fatal flaws.	Ms Ball: One of the reasons was that we could not pre-empt the outcome of the transmission line EIA. Ms Ball: Thanked Mr de Villiers and indicated that the point has been noted and the EAP will look into his comments.

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20	Mr Ettiene Fourie SANParks	Mr Fourie asked a process question an enquired when an EIA for a nuclear site as well as transmission lines will be undertaken together in order to make a decision. He feels that one cannot be assessed without the other one, they need to be looked at holistically, to assess the cumulative impacts.	Ms Ball: I can respond in terms of the discussions we have had with the Department of Environmental Affairs (DEA) – basically it would depend on the outcomes of the other processes. That question would have to be directed to the DEA as it is not a question to which I can provide a response.
21	Mr Tertius Carinus SANParks – ABI	Mr Carinus noted that the transmission lines are an issue in the area, whether it is through the park or through the wetlands. The area is inundated with the wetland systems. This has been a concern raised in the area. There have been requests that this issue be dealt with and he said it would also answer Mr de Villiers' point on cumulative impact.	Comment noted.
22	I&AP	Ek wil net terugkom oor wat Danie gesê het. Op die voorlegging op Hermanus het julle gepraat van 10 000 megawatts per site. Met ander woorde as hierdie EIA goedgekeur is, dan is die plek geskik vir 10 000 megawatts. Dis die een ding. Die ander ding is, ons moenie vir onsself 'n sak oor die kop trek nie. Hierdie lyne se EIA is om 'n praktiese rede van die kragsentrale s'n geskei. Ek wil herhaal wat ek in Hermanus gesê het, as die kragsentrale goedgekeur is, hoe gaan ons die lyne stop? <u>Translation</u> I just want to refer to what Danie had said. Regarding the submission it was mentioned in Hermanus that each site would have 10 000 megawatts. In other	Mr Heydenrych: Hierdie aansoek is vir 4000 megawatt, so as hierdie aansoek goekgekeur word mag Eskom slegs 'n 4000 MW Kragsentrale bou. Hulle het wel vir ons gevra terwyl ons met hierdie studie besig was om te kyk of hierdie terreine verdere kragsentrales kan akkommodeer. En dit is wat ons gedoen het. Spesifiek is daarna gekyk watter area op elke terrein moontlik geskik kan wees vir 'n kragsentrale. <u>Translation</u> Mr Heydenrych: This application is for 4 000 MW, so if this gets approved, Eskom is only allowed to build a 4 000 MW Power Station. However, Eskom requested that the studies

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		words, if this EIA gets approved, then this area will be suitable for 10 000 megawatts. To avoid anything being misconstrued, it should be clearly stated that for practical reasons, the EIA for the lines have been separated from the Power Station EIAS. As stated in Hermanus; if a power station gets approved, how will the lines be stopped?	investigate the total area that can accommodate a nuclear power station. This is what was investigated.
23	I&AP	Hierdie terein is klaar geskik vir 'n 10 000 MW kragsentrale. Translation This land is already suitable for a 10 000 MW Power Station.	Comment noted.
24	Mr Mike Kantey CANE	Mr Kantey drew attention to Slide 5, bullet 2 ❑ Please note that there is not a perceived impact – thank you very much for that language. ❑ When the impact of the human health and safety is looked at, this issue is what we would like to record for the benefit of the public record. The Air Quality Report (he has looked at it since 06 March 2010) and its impacts in terms of fallout of Cesium 137 on the wheat fields and dairy farms and the effluent of Strontium 90 and its impacts on marine life – what is being looked at, simply put, is a Nuclear Power Station - it is not a ferrochrome smelter, it is not a coal-fired power station but it is a Nuclear Power Station. ❑ When talking about an environmental impact, it is the environmental impact of nuclear material,	Ms Ball indicated that she cannot comment on the co-operative agreement between the NNR and DEA. Mr Stott: In South Africa, we have a National Nuclear Regulator Act (NNRA) and a National Environmental Management Act (NEMA). In some countries, the two Acts are combined but in South Africa, they are separate. That means that the National Nuclear Regulator and the Department of Environmental Affairs respectively have certain responsibilities. The National Nuclear Regulator is responsible for the evaluation of nuclear and radiological safety. The National Nuclear Regulator (NNR) process, which is still to take place, will have public hearings, which are part of the process. The National Nuclear Regulator bases everything on a safety case. The NNR demands a full

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		namely, by-products of nuclear fission process, that is the environmental impact that you want to investigate and very little else because it is a nuclear power station. When examining the data sets for a Nuclear Power Station, there are 2x major products, effluents, emissions of a nuclear power station, one is Strontium 90 and the other Cesium 137. The expectation is that data sets will be found with hard-core, scientific exposition of Cesium 137 and Strontium 90. This information will be found in Australia, in Germany, in France, in Belgium, but when one comes to South Africa, you find the Scoping out and exclusion of all those impacts. ❑ These data must be shown in an environmental report. This report does not have any of this information. Essentially, a nuclear impact has not been looked at. ❑ It is unscientific, it is untrue and incorrect, it is their perception that what they are telling us is correct. ❑ But what Mr Kantey is saying is, it is his scientific evidential fact from lack of evidence that our perception is true and that this EIA is an unscientific report. He needs to see all the impacts on all the animals, human health, and dairy products, black and white – data sets – science and not perceptions.	safety case before they make a ruling on whether to grant nuclear licensing or not.
25	Mr Etienne van Heerden Birdlife Strandveld	Regarding the “fatal flaw slide”: Ek vra die vraag uit my eie bekommernis oor die voël-lewe. Ek het op “slide” agtien gesien julle noem daar “no fatal flaws”	Mr Heydenrych: Transmissielyne. Die tansmissielyne is ‘n aparte EIA, dit word nie in hierdie EIA bespreek nie.

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		en ek het op 'n webwerf 'n lys gekry van veertien "fatal flaws". Ek gaan hulle nie nou almal lees nie, maar een spesifieke een wat ek wil lees is die 8st punt. "Threatened protected bird species such as the blue crane, stanley's buzzards, large stalks, etc….. an exponential increase in deaths from collisions with the transmission power line." En nou wil ek ook net vra dat in hierdie dokument wat ons gekry het, het ek gesien dat daar 'n studie gedoen is wat die impak van hierdie projek gaan he op die gewerwelde landdiere en ek sien geen verwysing na die voëllewe nie. Daar is geen studie gedoen volgens hierdie rekord nie en wat die impak sal wees nie. Ek weet ook die Endangered Wildlife Trust het uitgebreide werk gedoen op die impak wat kraglyne veral of die "Endangered Birdlife" het en dan ook veral op die "Bluecrane" wat "endangered" is. <u>Translation</u> Regarding the "fatal flaw slide", out of a concern regarding the bird life. It was mentioned on slide 18 that there are"no fatal flaws", but I found a list on a website of 14 "fatal flaws". Not all will be read out, with the exception of point 8. "Threatened protected bird species such as blue crane, Stanley's buzzards, large stalks, etc.... an exponential increase in deaths from collisions with the transmission power line." Also, according to this document that has been received now, it is noted that an impact study has been done on what impact this project will have on vertebra animals. According to these records [the	Mr Heydenrych: Transmission Lines. The Transmission Lines are a separate EIA and are not discussed in this EIA.

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		report] there has been no study done on what the impacts will be on birdlife. The Endangered Wildlife Trust has done extensive work regarding the impacts the Power Lines with have on "Endangered Birdlife" and especially on the "Bluecrane" which is endangered.	
26	Mr Danie de Villiers Strandveld Tourism and Conservation Association	Mr de Villiers commented that again this question is about Arcus GIBB writing a report using Eskom's words. It is about coal *vs* nuclear. ❑ He accepts the statement that power has to be closer to a consumption area, there is no argument about that, as far as he is concerned, because of technological reasons. ❑ When he makes the following statement, the report indicates that a coal-fired station on the coast does not make sense, that is why a nuclear power station is needed. ❑ The fact of the matter is that the electricity consumption in Port Elizabeth is not even 800MW, now Eskom want to build a 4,000MW nuclear power station in the Eastern Cape. Cape Town consumption is not even 2,000MW. ❑ His point is that these Nuclear Power Stations that will be built along the coast are for exporting power up to the economic heartland of the country. If it is important, the power station should be closer to the consumption area and end users. ❑ As an example, the KwaZulu-Natal Coast would make more sense that any other sites here. ❑ He wanted to know why Bantamsklip site is being looked at. Eskom should look at the KwaZulu-	Mr Stott: The demand for energy in the Western Cape has growing and is up to 4 000 MW during the winter peaks. We have those figures from the time (2006) when we experienced problems in the Western Cape and we have monitored that carefully. In the Eastern Cape, the growth is there and all indications are that it is still climbing. This is not linked to Alcan. You can go and talk to any of the business centres in the Eastern Cape. Also we do not have baseload power stations in the Eastern Cape, so we do need to anchor there. The power may be exported to other parts of the country but as the demand grows, the power station would also provide for the Eastern Cape area. We are starting to look further afield in South Africa and if the Integrated Resource Plan requires more nuclear power stations to be built, we will then look for more nuclear sites across the country.

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		Natal coastline ❑ He feels that the only reason that Eskom has for this investigation is that Eskom bought the Bantamsklip site a while ago - in 1960.	
27	Mr Danie de Villiers Strandveld Tourism and Conservation Association	Mr de Villiers asked if the Western Cape is going to get Nuclear 2?	Mr Stott: According to the information that Eskom has, they would be looking at the southern and Western Cape sites for Nuclear 2.
28	Mr Mike Kantey CANE	Mr Kantey referred to the issues trail, Slide 6, 2nd last bullet read together with Slide 61, bullet number 4 (mitigation measures): ❑ Bullet 4 reads "Vaalputs may be considered as a disposal site for High Level Waste in future". One of the difficulties I have is that I also have on my national executive, the Namaqualand Community and they are obviously bitterly opposed to the deposition and dumping of waste in their area. So it does to seem to be pre-empting to be saying that this will occur. ❑ What is the justification for making high-level waste policy? Where is the justification for bullet 4? ❑ People of Namaqualand are, in fact from the United Nations point of view, indigenous people of South Africa. There are also a number of land claims relating to the Namaqualand people. ❑ What is of vital importance in terms of UNESCO values, is to identify in black and white Vaalputs as a site for high level nuclear waste without a single shred of consultation. ❑ It strikes me as a pre-emptive measure and	Mr Heydenrych: Mr Beyleveldt is a representative of NECSA, where he is responsible for the management of Vaalputs waste site. I personally got that information from him. They are considering Vaalputs, however, should they decide to use Vaalputs for high-level waste, that will only happen in many years to come. Should they go ahead, they will have to undertake a Nuclear Regulatory process, which also has a public consultation process.

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		certainly cannot be compatible with the Constitution of South Africa and also the charter of the United Nations. Mr Kantey asked if Mr Beyleveldt had consulted with his neighbours as Mr Heydenrych is making such a statement?	Mr Heydenrych: That is for Mr Beyleveldt to answer.
29	I&AP	In een van die slides het jy genoem dat die ekonomiese positiewe impak 7.85% was. Ek wil net vra wie was hierdie spesialis gewees? Ek wil net weet hoe het hy by die punt gekom? Het hy die negatiewe impak ook bereken? Het hy enigiemand in hierdie area gekonsulteer? Want as ek die nuwe regulasies reg verstaan dan moet jy kyk na die toekomstige potesiaal van 'n gebied ook. So dit maak nie saak of Duinefontein 'n natuurreservaat is en ons nie is nie. Dis nie relevant nie. Ek wil net graag 'n ontleding hê van hoe het hy by hierdie punt gekom. Wat is die positiewe impakte en wat is die negatiewe impakte wat in aanmerking geneem is? Die Overberg se toerisme is in sy "baby shoes". Het hy dit in ag geneem? <u>Translation</u> On one of the slides it was mentioned that the positive impact was 7.85%. Who is this specialist? How did he get to this percentage? Did he also calculate the negative impacts? Did he consult anyone in this area? If the new regulations are understood correctly,	The Economic Specialist is Imani Development. Die resultalte wat hy deurgegee het, is wel gekwantifiseer in terme van geld. Waarna hy gekyk het is in Engels "Bed nights", met ander woorde waarna hy gekyk het is hoeveel akkommodasienagte wel in daardie area effektief verkoop gaan word en hy het wel na negatiewe impakte en positiewe impakte gekyk. Definitief. <u>Translation</u> The results that have been provided have been quantified in terms of money. What he was looking at is called "Bed nights", in other words, how many accommodation nights will be sold effectively in that area. However, he did look at both negative and positive impacts.

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		then a person should also look at future potential of an area. So it does not matter if Duynefontein is a Nature reserve and this [area] is not. It is irrelevant. An analysis of how he reached this conclusion is requested. What are the positive and negative impacts that were taken into consideration? The Overberg tourism is still in its "Baby Shoes". Did he take that in consideration?	 Definitely.
30	Mr Mick Dalton Nuwejaars SMA & ABI	Mr Dalton stated that he cannot logically see how a Nuclear Power Station built at Bantamsklip can improve tourism bed nights, anywhere. It is unimaginable! What other tourism related aspects have been considered?	Ms Ball: I am obviously not a Tourism Specialist but from my understanding as an EAP, I am aware that they looked at business as well as nature-based tourism. During construction, there would be an increase in bed nights, Eskom have seen it in Lephalale area and I have also experienced it personally – the increase in bed nights due to the existence of a power station.
31	Mr Tertius Carinus SANParks - ABI	Mr Carinus noted that it was highlighted earlier in the initial phase that this area has been identified as one of the 5 tourism development nodes in the country and in the Western Cape on the tourism development area. The tourism that we are talking about is a nature based tourism and not business related tourism. That is the difference. Because it is a rural side – it is nature based as opposed to Duynefontein, which is business related tourism. Thyspunt and Bantamsklip are similar in nature – they offer nature-based tourism.	Ms Ball: This is correct; the specialist has noted this and has discussed it in the report.

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No	**Name**	**Comment**	**Response**
32	Ms Katrin Pobantz Tesselaarsdal Action Group	Ms Pobantz referred to Slide 18, bullet 2 that states that all potential negative impacts can be mitigated. She wants to know, can the specialists say that? Mr Kantey added that the statement is logically unscientific. Perhaps it should read as "all potential negative impacts that we have assessed could be mitigated".	Ms Ball: We took the general consensus from all specialists. Point taken and noted.
33	I&AP	Ek het net 'n vraag rondom die Sysmologiese gedeelte van die voorlegging. Daar staan spesifiek dat rondom Tuyspunt en dit geld nou vir Bantamsklip en vir Duynefontein ook. Daar is sekere sysmologiese studies wat nog gedoen moet word. Dit sal twee tot drie jaar neem om hierdie studies afgehandel te kry. My vraag is net, hoe kan hierdie ding goedgekeur word en daar begin bou word in 2011, maar die studies gaan eers in 2013 voltooi wees? <u>Translation</u> A question regarding the Seismology part of the presentation; It was stated that around Thyspunt; and this applies to Bantamsklip and Duynefontein as well, there are certain seismology studies that still need to be done. It will take two to three years before these studies will be completed. How can this study be approved, building start in 2011, if these studies will only be completed in 2013?	Mr Stott: Those are results of studies that have been done over decades. All the power stations have to meet the seismic criteria. The more you have to design for seismic criteria, the more expensive the power station becomes. We want additional studies to refine that and to ensure that it is not over-designed and does not cost significantly more than what a standard nuclear power station should cost. So from Eskom's perspective, we are optimising on the plant design. Ms Ball: One of the key requirements within the National Environmental Management Act (NEMA), is that DEA requires sufficient information to assess and make an informed decision. For the purposes of this EIA, the specialists considered these results to be sufficient to be able to assess the potential impacts and so does Arcus GIBB.

BREDASDORP PUBLIC MEETING (25 MARCH 2010)			
No	**Name**	**Comment**	**Response**
34	Mr Rodney Anderson Hermanus Ratepayers Association and Overstrand Conservation Foundation	Mr Anderson referred to Slide 5: He notes that there is vigorous opposition to the statements on impacts of tourism. It is not apparent that the studies took into account the true impact of what we perceive as the lifeblood of the area, eco-tourism, and nothing else. He fails to see how there can be an increase of 8.75% in tourism during construction.	Ms Ball: Thank you for those comments. It is precisely what we need from the public. The point is noted and will be checked with the specialist.
35	Mr Mike Kantey CANE	Mr Kantey then drew attention to the Thyspunt area: Slide 36 bullet 4 ❑ Bullet 4 is amazing; "a zero potential impact is predicted". ❑ There is on record a petition signed by 6,000 global surfers with the Billabong's permission. ❑ Jeffrey's Bay is an international site for supertubes, and there is a supertubes foundation in Jeffrey's Bay where he works. ❑ There are signatures of world champions and the number 1 contender. ❑ Mr Kantey is having a meeting with Billabong to discuss this issue because they see their sponsorship and brand directly threatened by the proposed Nuclear Power Station. ❑ Jeffrey's Bay lives and dies on Billabong. Worldwide champions surf in Jeffrey's Bay. What the consultants and specialists did in Jeffrey's Bay is unknown to them.	Points noted.

BREDASDORP PUBLIC MEETING (25 MARCH 2010)			
No	**Name**	**Comment**	**Response**
36	Mr Danie de Villiers Strandveld Tourism and Conservation Association	Mr de Villiers would like to request Arcus GIBB to give real attention to what is being suggested and not only put our questions in the Issues and Response Report. He then directed a question to Eskom: Reading through the report, he came across a figure, which was a cost of a power station. The figure was about R180b. Mr Moroga made a statement a while ago of the amount of R400b. One of the reasons was apparently that there is a licence fee that has to be paid. He asked for some clarity on what the actual cost of building the Nuclear Power Station would be.	Ms Ball: Yes, GIBB will attempt to make all changes in track changes in the report to make it easier for the reader to see the changes made on the draft report (Draft EIR). He was not referring to the nuclear licensing, I think Mr Moroga was referring to the cost of transfer of technology, because the nuclear energy policy that the government approved in 2008 talks about local manufacture of components. If a country does not already have the knowledge, it will have to buy the design and manufacturing intellectual property and knowledge. So the cost of building a nuclear power station is dependent on whether SA just wants to buy one nuclear power station or a fleet of nuclear power stations, and whether SA also wants to buy the design and manufacturing intellectual property and knowledge. The choices in this regard will determine the eventual cost of each nuclear power station..
37	I&AP	An I&AP enquired about decommissioning and asked when is decommissioning going to commence for the Koeberg Nuclear Power Station? Are they preparing to return the entire development to green fields situation? How do you deal with the entire mass of the unit, which is substantially radiated?	Mr Stott: Currently, Koeberg is 25 years old. Its original design life was 40 years. However, as with most power stations throughout the world, one looks at what the economic life is and is it feasible to extend it. So, Eskom is currently looking at extending the economic life of the Koeberg Nuclear Power Station. Eskom does not intend to take it back on the green fields as Eskom may want to build another nuclear power station on the same site. Regarding the decommissioning process itself, there are power stations that have been decommissioned in the world and one can use that information from experience of other countries.

BREDASDORP PUBLIC MEETING (25 MARCH 2010)			
No	**Name**	**Comment**	**Response**
			An important factor is that the nuclear fuel has been taken out so the remaining radioactivity is in the steel vessels, piping, etc, which is mostly cut out and disposed of. The cutting up is mostly done remotely by remote machines, that is all under the control of the national Nuclear Regulator, looking after the radiological safety of all individuals working during the decommissioning phase.
38	I&AP	An I&AP wanted clarification on the decommissioning issue. It is recognised that Koeberg Nuclear Power Station is ageing, I saw a dataset of radionuclides (i.e. radioactive materials) which shows that they have increased quite substantially over the past 25 years? This I&AP wanted information on this issue. Follow up question from Mr Kantey: What is being discussed here is becquerels per annum in release from the stats and those from liquid effluents. Figures in the Cape from APS (Laboratory) report, have been seen and these figures are going up from 10^4 for Cesium, Strontium, going up to 10^6, 10^7 and have almost doubled and never coming down below that level. We are talking about becquerels, we are not talking about the impact, and we are talking about effluent and emissions.	Mr Stott: The actual releases have not increased. The National Nuclear Regulator (NNR) has changed the methodology of how to calculate the impact of the releases. The first time they changed it, it increased the value slightly, the second time they changed it, the value decreased slightly. Their limits are 250 microSieverts (that is the radiation dose per individual). At Koeberg, our target is 30 microSieverts, so almost one tenth of that. We have never ever been above 20 microSieverts. At the moment it is averaging less than 10 microSieverts. So the impacts of our releases have been kept very low even though the plant has been in operation for 25 years. Mr Kantey is correct in that the NNR has placed something called the annual authorised discharge quantities and they do that for all radionuclides. We are not allowed to go above those levels, but for operational purposes, we are allowed to vary that and we do vary that. Some years depending if we had double outage, i.e. both units are on outage, for refuelling and maintenance, the levels will go up and in some years, the levels will come back down again.

BREDASDORP PUBLIC MEETING (25 MARCH 2010)			
No	**Name**	**Comment**	**Response**
		He went on to say that is interesting that the levels do not come down again.	
39	Ms Katrin Pobantz Tesselaarsdal Action Group	Ms Pobantz stated that when the cooperative agreement between the NNR and DEA was discussed, she understood that the safety issues fall on the shoulders of the NNR. She asked if there will be public hearings and not public participation process which is similar in the EIA? She added that if there were concerns about, e.g. the transport of nuclear waste from Bantamsklip, etc potentially who do people ask, how does the public find out what routes they have assessed, how do they get to comment on the process and understand and find out necessary information because this is a huge concern for everyone (human health and safety being assessed). This appears as a huge gap now that people don't know if they will have an opportunity to participate like they have done in the EIA process. She asked where does everyone stand. Ms Pobantz feels that this EIA process is actually incomplete because answers are unavailable because they will be shifted from the EIA consultants to the National Nuclear Regulator. The public have been told that the human health, safety issues are for the NNR to assess. All comments that are raised are shifted to the NNR and no one knows how the NNR is going to deal with that. She wanted to know how the EIA can be considered complete.	Mr Stott: The National Nuclear Regulator Act (NNRA) refers to public hearings, but the National Nuclear Regulator (NNR) has never had public engagements because the original license for Koeberg did not have such a requirement. So at this stage it is not clear what would be the nature of the public engagement. From Eskom's side we have already requested the National Nuclear Regulator (NNR) to consider how they will engage the public because it is in Eskom's interest to have this information moving forward. Ms Ball: I cannot answer on behalf of the NNR – your point has been noted.

BREDASDORP PUBLIC MEETING (25 MARCH 2010)			
No	**Name**	**Comment**	**Response**
40	I&AP	Ek wil net terugkom na die kaart wat jy vir ons gegee het oor die "site" self van die geskiktheid, as ek reg onthou, was dit nie 70 hektaar gewees by Bantamsklip nie, en daar moet my vriende in Natuur bewaring my help. Ek kry die gevoel die persepsie word hier geskep dat Natuurbewaring begin ander kant die teerpad, maar hierdie kant van die teerpad waar die kragsentrale gebou word, daar kry die spesialiste 'n stuk op elke terrain; 'n netjies groot genoeg gebied waar daar niks is wat hulle pla nie? <u>Translation</u> Referring to the map presented for the site itself and its suitability. It showed 70 hectares of Bantamsklip, and Nature Conservation should confirm this. The perception is created that nature conservation only starts on the other side of the tar road, but on this side where the power lines gets build the specialist finds on each site, a neat piece just big enough where there is nothing that will bother them?	Each of specialist areas sensitivity maps was overlaid by Arcus GIBB and only then did GIBB come up with the least sensitive area.
41	Mr Mike Kantey CANE	We are talking about regulation and legal considerations: ❑ The problem from a legal perspective is the language of no-show stoppers, insufficient information, scoped out, part of the co-operative agreement, etc. ❑ When it comes to the substantive issues, I am really arguing now, and anticipating a law-suit, but this possibly might even go to the constitutional court.	All points noted.

BREDASDORP PUBLIC MEETING (25 MARCH 2010)			
No	**Name**	**Comment**	**Response**
		❑ If you look at the structure of the EIA report from its structure at its inception and execution, you cannot really stand here and blame ACER, you cannot even blame Arcus GIBB and even Eskom cannot be blamed. ❑ It is the way in which everything has been passed, even the regulation. You certainly have to trust the infinite wisdom of the legal experts and lawyers. ❑ Everything that is of vital importance that should enable a person to make an informed judgement has been scoped out. ❑ Every application for the quantitative data sets that can make an informed decision around human health, the most vital form of life that everyone can ever think of, every possible question, waste, anything that has a bearing on a matter, in a legal perspective, has been scoped out. ❑ Even the type of reactor, has been scoped out. ❑ Legally, anything that one would need to know for an informed decision and representation and submission has been scoped out ❑ What this leaves us with (I am saying this with the greatest concern from a constitutional point of view and a popular democracy), everything that matters has been scoped out. It leaves us, ladies and gentlemen, and I say this with a warning that, it leaves us with no redress, whatsoever, no access to information, unless under PAIA (even they could refuse us information for reasons of business confidentiality) we see business concerns being raised above tourist concerns.	

BREDASDORP PUBLIC MEETING (25 MARCH 2010)			
No	**Name**	**Comment**	**Response**
		❑ So, it seems to me that the regional economies of Thyspunt, Kouga Municipality and fragile economies of the Thyspunt and Bantamsklip, etc. are being thrown to the docks for higher business deals which are beyond the border of South Africa. ❑ This is something that must be recorded, this is a way for people of South Africa to say we have had enough of exploitation, we have had enough of oppression, had enough of silence, we want the facts on the table, otherwise we go to the constitutional court again.	
42	I&AP	Soos mense nou al genoem het, 'n baie belangrike punt, is daar persone wat ons noem vissermanne wat glad nie ingelig word oor sulke gebeurlikhede nie en wat glad nie weet wat dit alles behels om 'n kragstasie opgerig te kry nie. Soos ek byvoorbeeld, wat in Buffelsbaai bly, kan ek vir u sê daar was nie inligting op die grond vir die eenvoudige mense om te besef wat dit presies behels nie. Daardie visserman wat elke dag uitgaan see toe om vir sy gesin te sorg, word nie gesê die afvalstowwe word in die see gestort en oor 'n tydperk gaan daar nie meer visse wees om te vang vir jou gesin nie. Ek kan ook nie onthou dat enige van Eskom se mense ons presies kom inlig het daaroor nie, indien daar 'n kragstasie in ons omgewing opgerig gaan word. <u>Translation</u> A very important point that has been mentioned by others; people that are known as "fishermen" who have not been informed at all about these	Ms Ball: The advertisements were placed in various national, regional and local newspapers. Ms Shinga was requested to provide a list of publications that were used to announce the availability of the Draft EIR to the I&AP after the meeting. The marine specialist has proposed a number of recommended monitoring and evaluation programmes aimed at mitigating the impact of the Nuclear Power Station on the marine environment. These measures are: • <u>Monitoring of thermal pollution</u> At each site both the benthic and intertidal habitats should be sampled before construction, after construction, but before the onset of the operational phase, annually during operation and then for a minimum of five years after closure of the power station. Both benthic and intertidal sites predicted to be impacted (i.e. based on oceanographic modelling of the release plume) should be paired with comparable control sites. If suitable sites exist

BREDASDORP PUBLIC MEETING (25 MARCH 2010)			
No	**Name**	**Comment**	**Response**
		developments and who know nothing about what the construction of a power station entails. This is applicable to individuals staying at Buffelsbaai where there has been no information made available. The fisherman that goes to sea everyday to provide for his family has not been told about the waste that will get dumped into the sea. This will have the effect that over a long period of time there will be no more fish to catch to provide for families. There is no recollection of any member of Eskom consultants that came to inform the communities that there might be a power station built in the area.	both sheltered and exposed rocky shores should be considered. At Bantamsklip special note should be taken of the abalone *H. midae* and dedicated surveys should be conducted to assess the densities of this gastropod. At Thyspunt surveys should be conducted to monitor for the presence of egg capsules of the Chokka squid *Loligo vulgaris.* Note: the use of indicator species is not recommended as the densities of marine invertebrates often varies dramatically through time, while changes in overall community composition are far more relevant. While sampling need not be repeated in different seasons it is important that annual monitoring take place at the same time each year. • <u>Monitoring of spoil disposal sites</u> Prior to disposal of spoil at sea, benthic communities at the disposal site, and in the areas predicted to be affected by spoil in the first ten years following disposal (Prestedge *et al.* 2009a) should be sampled for at least two years. Following disposal of spoil, these sites should be sampled at the same time of the year as the initial samples for at least ten years. Importantly, communities establishing on the actual spoil site should be monitored to establish to what extent these communities recover through time. <u>Monitoring of radiation emissions</u>

BREDASDORP PUBLIC MEETING (25 MARCH 2010)			
No	**Name**	**Comment**	**Response**
			An environmental surveillance programme should be implemented to monitor for radiation emissions in the marine environment. This would form part of the strict requirement of the National Nuclear Regulator Act. The design of such a programme is outside our area of expertise, but is likely to follow the Eskom Radiation Protection Environmental Surveillance Standard. Organisms which we recommend for inclusion in such a monitoring programme are the abalone *H. midae* at Bantamsklip and the chokka squid *Loligo vulgaris* at Thyspunt, as both are consumed commercially. • <u>Monitoring of sewage effluent</u> A routine monitoring programme of water exiting the cooling water outlets should be established to ensure that sewage effluent entering the sea meets the standards set by the Department of Water Affairs and Forestry. • <u>Monitoring of organic, bacterial and hydrocarbon pollution resulting from polluted groundwater</u> **Should pollution of groundwater be detected, monitoring of seawater quality in the area of groundwater discharge should commence immediately to ensure the safety of public health.** • <u>Monitoring of African penguin (*Spheniscus*</u>

BREDASDORP PUBLIC MEETING (25 MARCH 2010)			
No	**Name**	**Comment**	**Response**
			demersus) populations on Dyer Island A long-term monitoring programme should be established to track populations of African penguins on Dyer Island near the Bantamsklip (Prof L. Underhill, University of Cape Town, *pers comm*.). Monitoring should take place before, during and after construction. Such monitoring should take place in conjunction with the penguin monitoring programme which is currently underway on the island and is run by the Avian Demography Unit at the University of Cape Town.
43	Ms Katrin Pobantz Tesselaarsdal Action Group	Where does Arcus GIBB's work stop?	Arcus GIBB's work ends at the submission of the final EIA Report to the DEA and to the public domain. The DEA then takes some time to review the report and then the EIA communication/ correspondence ends when we notify Interested and Affected Parties (I&APs) of the DEA's decision.
44	Ms Katrin Pobantz Tesselaarsdal Action Group	Ms Pobantz said that something has been mentioned about the peer review by the Department of Environmental Affairs. She asked if Arcus GIBB would have access to that information from DEA? Will DEA make information available on what the peer reviewers have said to Arcus GIBB? If Arcus GIBB had access, it would add another dimension to the EIA report.	Ms Ball: I must state that it is not for all the EIAs that the DEA appoints a peer review panel. This is the second EIA where DEA has appointed a review panel, the first one being PBMR DPP EIA. DEA is the authorising body that will be advised by their appointed review panel. Arcus Gibb would not have access to the report prepared by the DEA peer review panel.

APPENDIX 2: PRESENTATION OF DRAFT EIA REPORT

Size of the Hermanus Public Meeting presentation 1,434KB
Size of the Pearly Beach Public Meeting presentation 1,501KB
Size of the Bredasdorp Public Meeting 1,500KB

All presentations can either be downloaded from the following websites:

- Eskom's website: www.eskom.co.za/eia under the "Nuclear 1-Generation" link
- Arcus GIBB website: http://projects.gibb.co.za/ under the "Nuclear 1 EIA" link

or can be requested from ACER (Africa) at 086 010 4958 or by notifying Bongi Shinga at bongi.shinga@acerafrica.co.za or nuclear1@acerafrica.co.za

APPENDIX 3: ATTENDANCE LIST

Surname	First Names	Title	Co/Org	Hermanus Meeting 23 Mar 10	Pearly Beach Meeting 24 Mar 10	Bredasdorp Meeting 25 Mar 10
Ackerman	Valerie	Mrs	Interested and Affected Party		Attended	
Alexander	Debbie	Mrs	Interested and Affected Party		Attended	
Anderson	Rodney C	Mr	Hermanus Ratepayers Association			Attended
Ball	Jaana-Maria	Ms	Arcus GIBB	Attended	Attended	Attended
Barnard	Gerrie & Lydia	Mnr & Mev	Interested and Affected Party		Attended	
Boshoff	Sophie	Mrs	Interested and Affected Party			Attended
Brindeau	Marc	Mr	Interested and Affected Party		Attended	
Brindeau	Alice	Mrs	Interested and Affected Party		Attended	
Burden	Rina	Mrs	Interested and Affected Party		Attended	
Carinus	Tertius	Mr	Agulhas Biodiversity Initiative (ABI)			Attended
Coetzer	Theo	Mr	Interested and Affected Party		Attended	
D'Alton	Michael & Jane	Mr & Mrs	Nuwejaars Wetland Special Management Area			Attended
de Kock	Johan	Mnr	Interested and Affected Party		Attended	
de Villiers	Carin	Ms	Eskom Holdings Limited	Attended	Attended	
de Villiers	Rocco	Mr	Interested and Affected Party			Attended
de Villiers	Ebeline	Ms	Interested and Affected Party			Attended
de Villiers	Danie	Mr	Strandveld Tourism & Conservation Assoc			Attended
du Plessis	Pierre	Mnr	Napier Landbouvereniging			Attended
During	Hardy CG	Mnr	Interested and Affected Party		Attended	
Evert	Dion	Mr	Interested and Affected Party		Attended	
Fourie	Ettienne	Mr	Agulhas National Park (SANP)			Attended
Fryer	Rob	Mr	Overstrand Conservation Foundation	Attended		
Fuchs	Michael & Susanne	Mr & Mrs	Klein Paradijs Country House		Attended	
Greeff	Gert	Mr	Eskom Nuclear Sites	Attended	Attended	Attended

Surname	First Names	Title	Co/Org	Hermanus Meeting 23 Mar 10	Pearly Beach Meeting 24 Mar 10	Bredasdorp Meeting 25 Mar 10
Groenewald	Amelda	Mrs	Interested and Affected Party			Attended
Groenewald	Karen	Mrs	Interested and Affected Party			Attended
Hayward	Bertus	Mr	Cape Agulhas Municipality			Attended
Hendry	Eugene	Mr & Mrs	Pearly Beach Ratepayers Assoc.		Attended	
Henrici	Gerald Willem	Mr	Pearly Beach Conservation Society		Attended	
Herbst	Deidre	Ms	Eskom Generation	Attended	Attended	
Heydenrych	Reuben	Mr	ARCUS GIBB	Attended	Attended	Attended
Heyns	J	Mr	Interested and Affected Party	Attended		
Hoekstra	Tierck	Mr	Natuurbewarings Raad	Attended		
Jephson	Amanda	Ms	Save Bantamsklip / Strandveld Tourism & Conservati		Attended	
Joubert	Pieter	Mnr	De Kelders Belastingbetaalers Verg		Attended	
Kantey	Mike	Mr	Coalition Against Nuclear Energy	Attended		Attended
Kleinhans	Harry	Mr	Interested and Affected Party		Attended	
Kriel	AF	Mr & Mrs	Interested and Affected Party		Attended	
le Roux	Leonard	Mr	Interested and Affected Party			Attended
Leber	Sue	Ms	Save Bantamsklip Organisation	Attended		
Lockyer	Lyn	Ms	Interested and Affected Party	Attended		
Lombardi	Giorgio	Mr	Vogelgat Nature Reserve	Attended		
Manson-Kullin	Lars & Helen	Mr & Mrs	Interested and Affected Party		Attended	
Mbusi	Mandla	Mr	Eskom Holdings Limited	Attended	Attended	Attended
Mc Neil	Angus & Linda	Mr & Mrs	Interested and Affected Party	Attended		
Miller	PK	Dr	Interested and Affected Party	Attended		
Miller	Pat	Dr	Hermanus Botanical Society	Attended		
Mills	Cherry	Mrs	Interested and Affected Party	Attended		
Muller	S	Mr	Overstrand Local Municipality	Attended		
Myburgh	Francois	Mr	Overstrand Municipality		Attended	
Otto	Hennie	Mr	Dyer Island Conservation Trust		Attended	

Surname	First Names	Title	Co/Org	Hermanus Meeting 23 Mar 10	Pearly Beach Meeting 24 Mar 10	Bredasdorp Meeting 25 Mar 10
Outhewaite	John	Mr	Interested and Affected Party		Attended	
Pietersen	Toni	Mrs	Facilitator	Attended	Attended	Attended
Pobantz	Katrin	Ms	Tesselaarsdaal Action Group	Attended		Attended
Pulker	Gaynor	Ms	Interested and Affected Party	Attended		
Ravenscroft	Mike	Mr & Mrs	Kleynkloof Private Nature Reserve		Attended	
Roelofse	Johan & Carla L	Mnr & Mev	Interested and Affected Party		Attended	
Schwegler	Walter	Mr & Mrs	Heidehof Provincial Nature Reserve		Attended	
Schwegler	Mathia	Ms	Strandveld Flora CC		Attended	
Slabbert	Paul	Mr	Strandveld Tourism & Conservation Assoc	Attended		
Smith	Kenneth & Elizabeth	Mr & Mrs	Interested and Affected Party		Attended	
Smith	KK	Mr	Interested and Affected Party		Attended	
Springer	St John	Dr	Interested and Affected Party	Attended		
Stemmet	Danie	Mnr	Interested and Affected Party		Attended	
Stott	Tony	Mr	Eskom Generation	Attended	Attended	Attended
Stroebel	Liana	Me	Agri Mega / Overberg Distriks Landbou Verg			Attended
Swart	Helena	Mrs	Aida		Attended	
Theron	Mervin	Mr	Eskom Holdings Limited	Attended	Attended	Attended
Toerien	D	Mr & Mrs	Interested and Affected Party		Attended	
van der Velden	J	Mr	Greater Hermanus Assoc for Commerce & Tourism	Attended		
van Heerden	Etienne	Pastor	Birdlife Strandveld			Attended
Visser	Kobus (IJ)	Mr	Interested and Affected Party	Attended		Attended
Warner	Lyn	Mrs	Interested and Affected Party	Attended		
Welsh	Eleanor	Ms	Save Bantamsklip Organisation	Attended		
West	David Michael	Mr	Eskom Holdings Limited	Attended	Attended	Attended
Williams	John	Mr	Save Bantamsklip Organisation	Attended	Attended	

ENVIRONMENTAL IMPACT ASSESSMENT (EIA)
EIA: 12/12/20/944

FOR THE PROPOSED ESKOM NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE

DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

PUBLIC MEETINGS, WEEK 3 – WESTERN CAPE

19 – 21 APRIL 2010

PROVINCE	AREA	DAY AND DATE	VENUE	TIME
Western Cape	Newlands	19 April 2010	Vineyard Hotel	18H00 – 21H30
Western Cape	Duynefontein	20 April 2010	Atlantic Beach Golf Estate	18H00 – 21H00
Western Cape	Atlantis	21 April 2010	Thusong Community Centre	18H00 – 21H30

TABLE OF CONTENTS

PREFACE

The presentations at the Public Meetings were uniform in nature and, therefore, one set of proceedings has been prepared. Slides of the presentation are provided in Appendix 2. Interested and Affected Parties (I&APs) raised a variety of issues at the three public meetings and for ease of reference, these have been captured in Appendix 1, providing I&APs from the three public meetings an opportunity to cross reference issues raised at the individual meetings.

Should participants who attended the meetings require any changes to these proceedings, please notify the Public Participation Office in writing within 14 days of receipt.

"Unidentified I&APs" refer to persons who attended meetings and verbally raised issues without providing their names. This in no way diminishes the value of the issue raised. Should you recognise your issue and would like to have your name recorded next to it, please advise the Public Participation Office.

In order to provide a structure and to enable the reader to follow the proceedings with ease the minutes have not been captured verbatim and post-meeting notes have been added for clarity and information purposes and are indicated in **bold**.

1. ATTENDANCE

1.1. Attendance – Interested and Affected Parties

- As per attendance register.

1.2 Attendance – Eskom Holdings Limited

Name	Position/Role
Mr Tony Stott	Senior Manager - Stakeholder Management Generation Business
Ms Deidre Herbst	Senior Manager – Environment Generation Division
Mr Gert Greeff	Manager - Nuclear Sites
Ms Carin de Villiers	Manager - Stakeholder Management and Communication, Nuclear Division
Mr Mervin Theron	Manager – Regulatory Affairs and Localisation
Mr Mandla Mbusi	Senior Advisor - Stakeholder Management

1.3 Attendance – Environmental Consulting Team

Name	Organisation	Role in the project
Ms Jaana-Maria Ball	Arcus GIBB (Pty) Ltd	Nuclear-1 EIA: Project Manager
Mr Reuben Heydenrych	Arcus GIBB (Pty) Ltd	Senior Environmental Scientist
Ms Bongi Shinga	ACER (Africa)	Public Participation Consultant
Ms Karin Bowler	Karin Bowler Enterprises	Independent Facilitator

2. WELCOME AND INTRODUCTIONS

The facilitator, Ms Karin Bowler, welcomed everyone to the meeting. She explained that the presentations were in English. She explained that participants are welcome to use the language of their choice as the EIA Team could communicate in English, Afrikaans and Xhosa.

She advised participants that the meeting is being recorded to ensure the accuracy of the minutes.

Due to late arrival of participants at some public meetings, the start of some meetings was delayed by a few minutes later than the advertised times. In this instance, the facilitator advised participants that the time would be added on at the end of the meeting (if required) to ensure sufficient time for questions.

The facilitator asked that points of clarification be held over until the discussion period.

3. FACILITATORS INTRODUCTORY REMARKS

3.1 Conduct at Meeting

The facilitator read through the points presented on the slide, which provided guidelines with respect to the conduct of all participants and for achieving a constructive debate and discussion. These points are contained in the main presentation, which is provided in Appendix 2.

She requested all participants to assist the team by having a constructive debate at the meetings.

3.2 Objectives of the Public Review Meetings

The purpose of the Public Meetings is three-fold, *viz*.:

- To present and discuss findings of the various specialist studies undertaken during the Environmental Impact Assessment (EIA) Phase.
- To present the conclusions and recommendations of the Draft Environmental Impact Report (EIR).
- Provide an opportunity to Interested and Affected Parties (I&APs) to comment on the specialist study findings and the outcomes of the EIA.

3.3 Summary of Issues Raised during Scoping Phase

The facilitator explained that the facilitator from the first round of public meetings in Southern Cape thought it prudent to summarise a couple of key issues that came out of the EIA process leading up to the EIR and also just to list some of those key issues. Having gone through the Issues and Response Report (IRR) , it is quite clear that these are only a few of the issues that were raised. Not all of them are relevant to the EIA process. Some of these issues belong to the National Nuclear Regulator (NNR) process.

For continuity purposes, the facilitator briefly mentioned some of the issues:

"Some people are opposed to and some are in favour of the proposed Nuclear Power Plants at Bantamsklip, Thyspunt and Duynefontein sites. There are concerns about the potential impact on health and safety issues. The community living in close proximity to the power station are concerned about their sense of place. They are also concerned about the visual impact of a power station. The affect on tourism is also an issue of concern. Altered sea temperatures could potentially affect marine life. Commercial and recreational fishing might be negatively impacted. Light pollution from the plant. Concern over property values have also been raised. Some people have expressed a lack of trust in the EIA process. Issues regarding the storage of hazardous waste. Consideration of alternatives such as renewable energy".

She emphasised that it is important for stakeholders to verify that issues, which were raised during the Scoping Phase, have been taken into consideration during the EIA Phase.

4. PRESENTATION: FINDINGS ON THE DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

Ms Jaana-Maria Ball and Mr Reuben Heydenrych representing the Independent Environmental Assessment Practitioner (EAP), Arcus GIBB, presented the findings on the Draft EIR.

By way of introduction, Ms Ball, the EIA Project Manager, thanked all present for their time and indicated that Arcus GIBB is pleased to be at the stage of presenting the findings of the specialist investigations and the outcomes of the EIA Phase .

Ms Ball and Mr Heydenrych then presented the findings on the Draft EIR and its appendices (refer to presentation slides provided in Appendix 2).

The issues raised and discussed following Arcus GIBB's presentation are captured in the table presented in Appendix 1.

5. ISSUES AND COMMENTS RAISED AND DISCUSSED

5.1 Issues and Comments raised

The table contained in Appendix 1: "Record of Issues Raised and Discussed" details the issues, comments and concerns, which were raised and discussed at the meeting.

Please note should you wish to make any corrections to the minutes please advise ACER within two weeks (i.e. 14 days) of receiving these minutes.

6. WAY FORWARD AND CLOSING REMARKS

6.1 Minutes of Meetings

Ms Ball indicated that the EIA Team would endeavour to distribute the minutes of meeting within 21 days from the date of the meeting. I&APs will have 14 days to verify the minutes and provide their comments to ACER.

6.2 Timeframes

In terms of the timeframes, I&APs were reminded that the public review period of the Draft EIR ends on 10 May 2010. Arcus GIBB has allocated a 66 day comment period, recognising that there are long weekends, school holidays and the Easter Weekend within the period 06 March – 10 May 2010.

Post-meeting note: Following a request at subsequent public meetings, the end date for the public review period was extended to 31 May 2010, thus providing an 87 day comment period. On 25 May 2010 it was further extended by an additional 30 days and the closing date for comment is now 30 June 2010 (117 days).

Ms Ball encouraged all present to submit their comments to ACER (Africa) using one of the following methods:

- By mail: Public Participation Office, Nuclear-1 EIA, PO Box 503, Mtunzini, 3867
- By fax: 035 340 2232
- By email: nuclear1@acerafrica.co.za

Comments received on the Draft EIR are recorded and addressed on a weekly basis in the form of an Issues and Response Report (IRR). Comments received will be used to produce the Final EIR, which will then be submitted to the Department of Environmental Affairs (DEA) (the decision-making authority for the EIA) for their consideration.

The timeframe for submission of the Final EIR will depend on how long it takes to finalise the report as well as on the type of comments that are received from I&APs during the review period.

A letter will be sent to all registered I&APs informing them of the Authorities' decision.

6.3 Facilitators Concluding Remarks

The facilitator stated that the onus of responsibility on your shoulders is to act as a reviewer to make sure that this process is robust and that your issues are answered. If not answered, it must be taken forward through the appropriate process. She encouraged everyone to make use of opportunities given to the stakeholders in terms of NEMA and the constitution.

The facilitator thanked everyone for constructive engagement and encouraged I&APs to submit written comments and closed the meetings.

Interactions between I&APs and the Project Team continued after the meeting. However, ACER did not record discussions, which took place after the meeting.

APPENDIX 1: RECORD OF ISSUES RAISED AND DISCUSSED

VINEYARD HOTEL PUBLIC MEETING (19 APRIL 2010)			
No	**Name**	**Comment**	**Response**
1	Mr Rodney Gurzynski EarthLife Africa CANE Independent Researcher	Mr Gurzynski noted that in the presentation various assumptions have been put forward, these assumptions were not site specific and had to do with base load, energy load, increased energy demand. He wanted to know if questions on these issues could be asked. He then asked where the figure of 4% increase annually to 2025 had come from. He noted that it had been stated that this increase would be needed despite energy efficiency measures being implemented. The NIRP of 2004 did not have a figure of 4% continuously increasing. This figure would give a doubling in 17 years and a doubling again and again, so this is not a sustainable proposition over a long period of time. He also asked how this 4% is correlated with the 6% growth in GDP. He asked how the conclusion is reached that only nuclear energy can provide base load. The consultants	Ms Ball said that Arcus GIBB would provide responses to these types of questions. Ms Ball replied that Eskom is currently the only provider of electricity and they do their own assessment in terms of demand studies in order to investigate their systems planning. The figure of a 4% increase was obtained from Eskom. Ms Ball said that she would revert to Mr Gurzynski with a response regarding the correlation to the 6% Gross Domestic Product (GDP) (**the question was subsequently answered by Mr Stott – see below**). Mr Stott explained that when Eskom commissioned the EIA, 4% was the figure that was the projected growth for electricity, this was in 2006/2007. The 6% was a Government acquired increase or growth for the economy and Eskom determined that if there is a 6% growth in GDP then they would need at least 4% increase in electricity. Obviously with the problems experienced by Eskom in 2008, there was a decline in demand. Currently, statistics South Africa state that the first three months of 2010 showed a growth of 8.1% when compared to the first three months of 2009. In March 2010 compared to March 2009 the growth in electricity was 8.3%. Eskom's predictions are currently showing that over the next 20 years, up to 2028, there will be 50 000 MW of new electricity capacity needed. That is more than double the South African current capability. The reason for this is that some of the old power stations are reaching the end of their lifespan; about 10 000 MW is expected to be shut down after 2025. Mr Stott then explained about base load. The International Energy Agency's definition of base load from a specific facility is that it must be available for more than 70% of the time.

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No	**Name**	**Comment**	**Response**
		have defined base load but Mr Gurzynski said that he could define it differently as being a mix and he stated that when a nuclear power plant shuts down, it does not provide base load, in fact no power station or technology could provide guaranteed base load. Mr Gurzynski said he was not entirely happy with this answer as it was a far more complicated subject.	
2	Ms Liziwe McDaid	Ms McDaid noted that there is a report called the Need and Desirability for the power station and it seems to make that assumption that energy and economic growth will remain linked forever. There is a strong movement now to de-link these two. Over the last year there has been an increased recognition from government that energy efficiency does have a major role to play in the country. She therefore asked how the new programs of energy efficiency were factored into the need and desirability for the nuclear power station. Ms McDaid also stated that there is a	Ms Ball said that she noted Ms McDaid's comments in terms of more discussion around the use of renewables. She stressed that this does not take away from any of the other renewable programs. There are EIAs for wind farms all around the country, Applications are both from prospective independent producers as well as Eskom, there is also solar generation, but these are all small amounts. In terms of the comment on Figure 4.1 she undertook to discuss this with Ms McDaid after the meeting (**Ms McDaid left the meeting without the point being discussed**). Mr Stott responded by explaining that Ms McDaid is correct, it cannot be said that there will be an x % growth *ad infinitum* into the future. There will be times when growth does dip or even goes negative. Certainly Eskom's predictions for the next 20 years show that between 3 and 4% growth will be experienced. However, on an annual basis Eskom have to review these figures. He added that this entire process has been taken over by Government and through the Integrated Resource Plan (IRP), which the Department of Energy (DoE) is currently busy with, they will investigate the demand for energy and specifically at electricity. They have to also investigate how this demand for electricity is going to be met. There was an advertisement in the newspaper inviting interested parties to register on the database of the DoE as they have indicated that they are going to hold stakeholder consultations in order to gain opinion from stakeholders throughout the country on the energy mix.

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		graph on Page 2, which is an energy supply graph but she feels that it is confusing as this graph is about electricity and not energy. Ms McDaid said that Mr Gurzynski had raised an issue about the renewables and that there is not a mention about renewables for base load. She asked for references as to why there are huge increases in the amount of renewables in the energy mix globally, for example there are figures of 20 - 40% in Ireland, Spain is up to 20%. It is not a case of individual power station being able to supply base load, but a basket of renewables. This is a different way of looking at things and she would like to see the idea that 40,000 MW by 2025 is our demand and that it has to be done by coal, she would challenge that and ask for a review of that. She would also want to know why it has not happened to date as this is a question that has come up since the scoping phase. Ms McDaid said that Ms Ball had stated that this does not take away from Eskom's other programs, however, what Ms McDaid is talking	Mr Stott then said that Eskom had stated quite clearly in the Scoping Phase of this EIA that it is not a question of nuclear or renewables, or nuclear or coal. Eskom needs all of these sources. Eskom firmly believes that renewable energy is needed, as well a hydro-electrical power, nuclear, coal, all types of energy. Eskom have to provide power stations in order that the economy can grow. A nuclear power station is also part of the DEA's long-term mitigation scenarios against climate change, they have factored into a study on climate change that there will be nuclear power in South Africa. **Post-meeting note: The legislative requirements for nuclear facilities in South Africa are extensive. In the case of the Nuclear Power Station, two key authorisations are needed from two different regulatory authorities namely the Department of Environmental Affairs (DEA) and the National Nuclear Regulator (NNR). These authorisations are needed prior to construction activities commencing on the site.** **In terms of the National Nuclear Regulator Act 1999 (Act No. 47 of 1999, "the NNRA"), the NNR is responsible for managing radiation hazards from nuclear facilities. The National Nuclear Regulator Act therefore regulates nuclear activities. However, in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) [NEMA], the DEA has a responsibility for assessing the impacts of the NPS on the environment, impacts which are likely to include those relating to certain aspects of the radiological hazards of the facility.** **Eskom has had preliminary discussions with the NNR regarding the acceptance of the specifications of the European Utility Requirements (EUR) standards for Light Water Reactors (LWR) plants and it is a key assumption of this EIA that these specifications will be accepted in principle as they are international standards. No formal application has however been submitted by Eskom to the NNR in terms of the NNRA.**

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		about is that this EIA is premised, its need and desirability is on the basis that renewable energy cannot meet the base load. She wanted to fully understand the need and desirability.	
3	Dr Christian Bremme	He requested clarity on why renewables have been capped if they are part of the energy mix.	Mr Stott stated that the cap that had been mentioned has arisen from the guideline document issued by the National Energy Regulator. Mr Stott feels that this is premised on the IRP that was gazetted in December 2009, which was only up to 2013. This was therefore a short-term Integrate Resource Plan and the next revision of this plan that is currently being produced (by Government) is a 20-year plan, so hopefully there will be a lot more renewables in this plan.
4	Mr Peter Becker Koeberg Alert Alliance	Mr Becker commented that Mr Stott had defined baseload as 70% or more, and therefore Koeberg Nuclear Power Station is not baseload as it averages at 67%. Mr Becker added that in the seismology study, the figure for Duynefontein is ~0.3g Peak Ground Acceleration. No error bar is given on that figure and yet it is stated that the limit is ~0.3g. In another place in the report it is stated that there are no disqualifying factors for any of the sites, but surely this is a disqualifying factor. There seems to be great inconsistency between what has been presented in the summary and what is in the main body of the report.	Mr Stott responded by saying that the Koeberg Nuclear Power Station is more than 70%, and this figure has been released by the International Energy Agency. He admitted that there have been times when because of the surplus capacity in South Africa when Koeberg was deliberately operated at a lower capacity. This was not Koeberg's choice but was Eskom's choice on the system to deliberately operate at 65 - 68%. Since this situation has changed, Koeberg has operated at a figure above 70%. The facilitator asked if the baseload throughout the country changes throughout the year. Mr Stott said that there is a constant requirement for approximately 24 000 – 28 000 MW all the time throughout the year at the moment. In previous years South Africa had a huge surplus of electricity capacity and therefore some of the power stations had to be operated at a figure below their capabilities. Ms Ball referred to the slide and said Mr Becker was correct in that the figure shown was ~0.3g Peak Ground Acceleration (PGA). Koeberg Nuclear Power Station (Koeberg) is not an off the shelf conventional nuclear power station. It is built on a nuclear raft and there was extensive redesign. What Eskom is now investigating for

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		Mr Becker also wanted to know about the Geohydrology Report in Appendix 3.7, which deals with the movement of water through the ground, this study uses a model, which is called Mace Transport 3D, and the equations that have been used are a Zero Residual Equation. In other words the fact that radioactivity might accumulate in the ground that the water moves through has not been investigated. It assumes that there is a single contamination and that this will move straight through. Radioactive pollutants are not like this, the radioactivity causes the ground potentially to become radioactive and further clean water moving into that ground might become radioactive. This means that this specialist study is based on an assumption that is entirely invalid. Based on that assumption, the specialist reports needs to be redone.	Nuclear-1 is an off the shelf design. She told Mr Becker to study the specialist report, as there is a recommendation contained therein that there be on-going studies in terms of all three alternative sites in terms of seismic risk. Mr Stott added that the nuclear industry does not work on error bars. The value is taken and uncertainties are added until a top value is reached. In the case of Koeberg, at an extreme value it was ~0.3g but Koeberg was specially designed and was licensed to a PGA value of ~0.36g. Ms Ball said that Mr Becker's comment had been noted in terms of the geo-hydrological studies, and his specific comment will be forwarded to the specialist concerned.
5	Mr Ivan Copeland I&AP	Mr Copeland asked if there had been any renewable energy plans formulated in South Africa. He also asked what types of renewables were being proposed.	Mr Stott replied that there is a Renewable Energy Policy, which requires 10 000 gigawatt hours by 2013. This has not yet been formulated into a firm plan. The Integrated Resource Plan No 1, which was issued in December 2009, only goes up to 2013 and only has approximately 200 MW of renewable energy. The current plan, which will have a 20-year timeframe, is expected to have a lot more renewable energy in the report.

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			Mr Stott said that solar, biomass and a small amount of hydro would be used.
6	Mr Pieter Wesselink Carbon Programmes	Mr Wesselink said that he had a question regarding Arcus GIBB's role as the independent environmental consultant. He asked if it was part of their job to interrogate Eskom in terms of their commitment to renewable energy to then to decide whether the assumptions around what is available and what is possible in renewable energy is realistic. He also stated that he could not understand why people in the power industry do not have figures available when attending meetings. Denmark's economy has grown by 70% during the past 15 -20 years. Their energy use has grown 5%. They have completely de-linked their energy usage from their growth. The base assumptions in this study are therefore questionable, he feels that the EIA is a waste of time.	Ms Ball replied that Arcus GIBB would not be interrogating Eskom, it would be the government she would interrogate. She has registered as a stakeholder as part of the IRP. She said everyone needs to comment on this plan in terms of the energy mix. Facts are interrogated in this EIA in terms of what Eskom currently can supply and also, what other independent suppliers can supply. The comment regarding de-linking is noted. Whilst it is recognised that countries such as Denmark are effectively managing energy consumption with sustained economic growth, they may not be faced with the same unique demand for base energy as is faced by certain areas of South Africa.
7	Ms ML Roux Habitat Council & CAPTRUST	Ms Roux asked if the specialist studies have been peer reviewed. She also stated that in the flow chart it was indicated that after the decision there was an arrow down to approval or disapproval, but she said that	Ms Ball replied that all the specialist studies were peer reviewed. Firstly Arcus GIBB reviewed the reports as independent consultants, then technical experts were appointed to review them from a quality control point of view. All of the reviewers had to sign a declaration of independence. There is another level of review, which is the public review of the assessments. For example at Thyspunt the public have sent the specialist reports to other technical experts for review. The third review mechanism is the DEA who have got selected technical experts (Ecology, Social, Nuclear, Legal) on

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		surely the approval or disapproval was the decision. However her main concern was that in the first list of issues that were dealt with and were highlighted in yellow, the issue of waste was not highlighted. Later on when waste was mentioned it was highlighted but very little information was given about waste. She feels that waste is the crux of the matter. The long-term future of the world is being jeopardised by caches of high-level waste in so many nuclear installations throughout the world. She is also concerned that the only waste area is Vaalputs where the low- and medium-level waste is stored. The community around Vaalputs are already at risk and this has been reported in parliament. If more waste is going to be transported to this area, even maybe the high-level waste, this should not be allowed. The facilitator explained that waste did not fall within the EIA process and	their peer review panel. The list of Arcus GIBB's technical experts are available on the EIA website. CVs of the independent specialists are also available on the website and in the Draft EIR. Ms Ball said that there was a waste assessment conducted as part of the EIA, which went as far as investigating the potential transport routes for waste disposal. They did not, however, do an EIA of the Vaalputs Waste Site itself. Waste is a huge issue and has been raised throughout the EIA, there is also a huge issue of high-level radioactive waste all around the world. Currently there is only one high-level radioactive waste site in the world, which is for military waste in the United States of America. Mr Stott added that the management of radioactive waste is under the jurisdiction of the Minister of Energy in terms of the Nuclear Energy Act. Last year government promulgated that National Radioactive Waste Disposal Institute Act which created an institute and the Minister can delegate to that institute and has done so and this will control all radioactive waste in South Africa. This includes waste from power stations and medical waste as well as industrial radiography, high-pressure pipelines used in the oil industry. Mr Stott does believe that the waste can be managed. Mr Stott explained that waste is dealt with to a certain extent in the EIA process, however, the DEA does not have the long-term mandate for the disposal of radioactive waste, this is with the Department of Energy and the Minister of Energy. For example government legislation states that all intermediate and low-level waste will be disposed of at Vaalputs, the EIA process has investigated how this will be done. Although this is under the jurisdiction of the Department of Energy, the licensing is issued by the NNR. They NNR ensures that the way in which radioactive waste is handled is safe for the workers and the public. The high-level waste is retained on-site, which is the current waste management policy as issued by Government in 2005. Until such time as South Africa has developed a final repository, all high-level radioactive waste will be retained on the site where it is produced.

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		will be dealt with during the NNR process. Ms Roux said that waste may be managed but it can never be disposed of, it remains a danger.	Ms Ball said that in the Draft EIR, Chapter 6 discusses the legislation pertaining to waste and disposal of radioactive waste, it provides a framework within which the EIA investigates waste. In Chapter 8 there is a discussion provided on waste and in Chapter 9 there is an assessment provided by a waste specialist. She added that overseas examples had been taken into account and also the one case that is available in South Africa, which is the Koeberg Nuclear Power Station and how they currently are dealing with waste and the alternatives around waste. She asked if there were specific comments, to please submit these and they will be handed on to the waste specialist. Mr Stott said that the licensing of any nuclear facility in South Africa is under the jurisdiction of the National Nuclear Regulator (NNR) in terms of an act of parliament. The management of radioactive waste is part of this process. They will not grant a license for any nuclear facility unless they are satisfied that radioactive waste that is created in the power station is managed safely. Eskom will only be granted a license if they can demonstrate that the intermediate and low-level waste can be adequately packaged and transported to Vaalputs and disposed of safely. The spent fuel has to be adequately kept in the spent-fuel pools on site safely for the life-time of the power station or until such time as the government says that there is a final repository and the waste must be moved to that site. Mr Stott added that the NNR Act has a specific provision that when an applicant applies for a nuclear license, the public are notified. The NNR evaluate the application and license submissions. In terms of the Act, The NNR Board may decide to convene public hearings prior to a decision being taken by the NNR.
8	Mr Norbert Furnon-Roberts City of Cape Town Ward Forum 77	Mr Furnon-Roberts said that this is being looked at in the South African context. He is sure there are best practises in terms of the location of a plant as well in storage of waste, internationally. He asked if this has	**Post meeting note:** **There are various international guidelines as well as regulations that provide best practice for evaluating waste and nuclear sites. A very thorough, independent process was used to identify alternative nuclear sites in South Africa. This process included stakeholder consultation and decisions were**

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		been taken into consideration, he was speaking regarding the German experience, where he was involved for more than 30 years. Problems are not so much on the operational side, but are rather in the storage and disposal of waste, this is so highly contentious and so political in Germany – 30 years on.	**ratified by Parliament. A further process to identify future sites will be initiated pending the amount of Nuclear required in the Integrated Resource Plan (IRP) 2. This process will use best practice.** **The recently created National Radioactive Waste Management Institute is currently accountable for the identification of future high level radioactive waste sites.**
9	Ms Samantha Jenne UCT Student and CPT Resident	Ms Jenne said she is concerned that although there are comments about renewables and how much they can contribute towards the energy needs, this is not being fully investigated. She feels that the country is being pushed towards nuclear. She also added that the scope of the report does not cover the manner in which waste will be disposed of. She therefore questioned the validity of the report. She said that when the EIA Report is examined, in the letter of approval on the Final Scoping Report from DEA, there was a condition regarding the Human Health that the information from the existing Koeberg Nuclear Power Station should be used in modelling. She asked why this had not been done.	The facilitator said that Ms Jenne's comments on renewables and waste are noted. Mr Heydenrych said that he did not agree that human health was not taken into account as there was a Human Health Risk Assessment, which actually forms part of the NNR process but was included in the EIR for information purposes. Ms Ball said that none of the specialists had included the raw data that they had used in their studies. That data is available in the public domain. She suggested that Ms Jenne contact Ms Carin de Villiers of Eskom to arrange to examine the data. Mr Heydenrych added that all data relating to the Koeberg Nuclear Power Station is published on an annual basis in the NNR Annual Report that is publicly available and is also posted on the NNR website. **Post-meeting note: The Air Quality Impact Assessment (Appendix E10 of the Draft Environmental Impact Report) has taken into account the existing background air concentration levels in the area. This has been based on publicly available air quality monitoring data and the calculation of atmospheric concentrations from current operations, including the Koeberg Nuclear Power Station at Duynefontein. The findings of the Human Health Risk Assessment (Appendix E24) are based on those of the Air Quality Impact Assessment.**

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No	**Name**	**Comment**	**Response**
		Ms Jenne said that the DEA had stipulated this as a condition of approval and it has not been complied with. There was no raw data or conclusion of findings in the report.	
10	Ms Janda McDonald Koeberg Alert Alliance	Ms McDonald referred to the emissions, she said that radioactive emissions of Strontium 90 and Cesium 137 are routinely emitted as part of normal operations from nuclear power stations. These are supposedly regulated by the NNR. She quoted from the Health Report, section 2.2.1 ▪ Ionising radiation has sufficient energy to change the structure of molecules including DNA within the cells of the human body' ▪ that abnormal somatic cell function arising from damage to DNA may lead to cancer in the tissue or organ of the exposed individual ▪ the hearing cell division in which the genetic code is transferred from one cell to the next with remarkable fidelity." She said that DNA is the blueprint for	The facilitator requested Ms McDonald to send her submission to the consultants in writing. Ms Ball replied that Arcus GIBB had not 'placed' any of the issues in the NNR's domain, they are merely following the two applicable Acts of the country. Also there was a Memorandum of Understanding and a letter from the Director General of the DEA with instructions to Arcus GIBB and Eskom in this regard. The EIA process is administrated by the Department of Environmental Affairs (DEA). In July 2008, the original Plan of Study, together with the Final Scoping Report for the Nuclear-1 EIA, was submitted to the DEA (then the Department of Environmental Affairs and Tourism - DEAT) for review and approval. In a letter dated 19 November 2008, the Department approved the Final Scoping Report in accordance with EIA Regulations. Subsequently, a co-operative agreement was reached between the DEA and the National Nuclear Regulator (NNR), in which it was agreed that the NNR will be the responsible authority regarding the assessment of all matters relating to impacts of ionising radiation on human health. Reference is made to a document titled 'Notification of statement issued by the Department of Environmental Affairs and Tourism regarding the consideration of matters pertaining to nuclear safety in environmental impact assessment processes on nuclear installations', dated 10 February 2009. The document serves to communicate consensus reached between the DEA and the National Nuclear Regulator (NNR) in terms of management of issues relating to radiological matters. One of the main purposes of the engagement between DEA and the NNR was to 'prevent unnecessary and unavoidable duplication of effort'.

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		the future of the human species. Should other forms of energy, which do not damage humans and other biological DNA not take preference to an energy production which has accepted to produce radioactive and harmful emissions. When Mr Stott said that they need all forms of energy, they as the public would like to disagree and do not need harmful, dangerous radioactive forms of energy. They would like to find more intelligent, more sustainable, cleaner and renewable forms of energy. She then pointed out that in the Air Quality Assessment, there is some data from Koeberg, but this data which appears on Page 192 of Appendix 10, emissions of radionuclides from Koeberg Nuclear Power Station are shown. In 2001 the amount of Caesium 137 as emitted was shown as 4E+04 (this is 4 to the power of 4 which is 4,000 becquerels of Cesium 137). She has the original report from 2010 and as signed off by the NNR in 2001, which shows the amount of Caesium 137 to be emitted as 4.49E+10 (which is 4 billion becquerels). The amount in the	Mr Heydenrych referred to a model (Slides 114 and 115), which was included in the Air Quality Study and which gives predicted levels of inhalation in terms of radiation and regarding microSieverts. These figures were based on a number of meteorological conditions. This indicates levels of radiation starting at Duynefontein and then going in increasing circles from the power station. The levels closest to the power station is 0.5 microSieverts per year. The conclusion of the Air Quality Study is with regards to the levels, is that there are certain limits which are prescribed by legislation which is 1 000 microSieverts and 250 microSieverts. Therefore the predicted impact on the area is low. Ms Ball said that Ms McDonald's concerns are noted. The points raised will be taken back to the independent specialists and the figures will be verified and answers will be provided in the Issues and Response Report for all members of the public to read. Mr Stott said that he was interested in the statement that low levels of radiation are dangerous. He asked for a copy of this scientific report and that this report also be given to the specialist (**to date Eskom nor Arcus GIBB have been sent the report promised by Ms McDaid**). **Post-meeting note from Dr. Lucian Burger, appointed Air Quality Specialist from Airshed Palanning Professionals (01 June 2010): The emissions in the NNR report referred to includes *liquid* and *gaseous*. The value in Ms McDonald's enquiry refers to the annual liquid release, which was 1.26E+10 Bq/a. The gaseous release was 4.49E4 Bq/a. To compare, other years' ^{137}Cs emissions (Bq/a) were:** **Year Gaseous Liquid** **2001 4.49E+4 1.26E+10** **2002 3.54E+6 8.44E+9** **2003 1.12E+6 1.83E+9** **2004 8.65E+5 2.89E+9** **. . .** **. . .**

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No	**Name**	**Comment**	**Response**
		original table was signed off by the regulator and published. This is quite a massive discrepancy: ▪ She asked if the public were aware of the discharge and were they warned. ▪ How can it be ensured that these minor errors have not happened many times in the data sheet of Koeberg Nuclear Power Station Report? ▪ How can the public be sure that this will not happen again in the new 'carefully monitored' power station. She said that it must be taken into account that there will be 2 nuclear power stations directly alongside each other with cumulative impacts. She also asked if the individual loads will be halved. Ms McDonald stated that this brings to mind the NNR as a body, which is the monitoring body, as all difficult questions have been passed into different environmental and governmental departments and taken out of the EIA, which turns the Health Assessment into pure background waffle.	**. . .** **2008 1.56E+5 2.42E+10** **Airshed's simulations only include the emissions released into the atmosphere via the vents, i.e. the gaseous amounts. These were provided in the table in the Air Quality Report.** **There is therefore no discrepancy.** **All radionuclide discharges are measured and reported to the NNR. The emissions must be below an allowable emission, which is also provided by the NNR and given in each annual report.** **There are no errors in the data provided. It is suspected that Ms McDonald referred to the liquid discharge rather than the gaseous discharge values.** **In answering "how can the public be sure that this will not happen again in the new 'carefully monitored' power station?" Ms. McDaid is referred to the responses provided above.** **The Air Quality Assessment took into account the potential cumulative impacts of radionuclide emissions at the Duynefontein site. The NNR will still have to issue maximum allowable emission rates for each radionuclide should Nuclear-1 be constructed and licensed. There may be a reduction in the allowable emission rate from new nuclear installations compared to that of the Koeberg Nuclear Power Station.**

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		She questioned the validity and ethicality of putting all the difficult questions into the NNR's domain. They have to deal with the emergency plans and draft disaster management data with regard to cumulative impacts of the nuclear installation. All assessments of compliance with regulatory limits, they also set the regulatory limits. The public know that the NNR has a long affiliation with the nuclear industry and that they are a small body and also very secretive. She also asked on what basis the public can assume that compliance with NNR levels will protect the health of nearby residents. Ms McDonald then stated that the dose limits are apparently related to the ICRP Risk Model, which is apparently outdated now. As per the recent edition of the European Committee on Radiation's Report, which is dated 2010, they found that the ICRP is no longer valid. For these dosages of radiation, it is now known that even low-level doses can have massive impacts and be	

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		carcinogenic. There is in fact no safe limit of exposure to radiation. She said that therefore they do not accept that any emission of radioactive material into the atmosphere or environment can be called safe.	
11	Dr Sabine Raab Koeberg Alert Alliance	Dr Raab said she would like to readdress renewable energy. They do understand that the energy mix for the country will be dealt with by DOE through the IRP 2 and that this will have to be addressed in that process. However, part of the EIA has to examine alternatives. It was mentioned in the presentation that all forms of generation should be considered as alternatives. All of the three sites are in windy areas and wind generation would therefore be a feasible alternative. She asked if studies had been done of alternative and particularly on wind energy.	Ms Ball explained that they had examined the data of the megawatts and the reliability of supply. Peer reviewed reports on alternatives, including wind have been investigated and in the opinion of the consultant it is not a feasible and reasonable alternative for the 4 000 MW nuclear power station.
12	Ms Joanna Marx	Ms Marx asked for information on heritage in the EIA study. She said there is the National Heritage Resources Act, which mentions palaeontology and archaeology. Heritage does not stop there, people are living in the world where heritage continues to be created. She asked from the original studies, what was	Ms Ball said that as part of the Heritage and Archaeology Assessment a specialist had examined the built environment as well as the palaeontology and archaeological environment. This was a team from UCT with various specialists as well as local specialists, **<u>Post-meeting Note:</u> Mr. Tim Hart of the University of Cape Town is the specialist who assessed the impact of the proposed Nuclear Power Station on all aspects related to Heritage Resources. His qualifications are as follows:**

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		done to identify heritage objects, heritage sites, places of interest to people, specifically in the three chosen areas.	o **Bachelor of Arts in Archaeology and Psychology** o **BA Honours in Archaeology** o **MA in Archaeology** o **Professional member (no 50) Association of Southern African** o **Professional Archaeologists (ASAPA)** o **Principal Investigator, cultural resources management section (ASAPA)** o **Professional member in specialist and generalist categories (including built environment) of the Association of Heritage Assessment Professionals** **The Heritage impact Assessment attached as Appendix E20 to the Draft EIR. The Heritage Assessment involved both desktop and field assessments.** **Sources of data have been derived from three main sources - extensive background reading and some primary archival research, specialist studies commissioned for this project and primary data collection in the field.** • **Consultation with Dr Johan Binneman of Albany Museum, Grahamstown.** • **Consultation with Prof Richard Klein of Stanford University, California.** • **Communications with Dr Graham Avery, Iziko Museums of Cape Town.** • **Communications with Sarah Winter and Harriet Clift (Overstrand Spatial Development)** • **An extensive background literature review with respect to all three sites.** • **Specialist palaeontological sub-studies by Dr John Almond reviewed internally by Mr John Pether (independent palaeontologists). This work is based on published sources and primary data held by the Council for Geo-science.** • **The specialist palaeontological report for the Duynefontein PBMR**

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			site by John Pether. • **Specialist archival and historical internal sub-studies by ACO staff based on written records and primary research at Cape Archives and Deeds Office.** • **Physical heritage surveys conducted at all three sites, and the analysis of data collected.** **Method** **The study commenced with a desktop review of published sources to establish the existing state of heritage information. This was followed by desktop palaeontological assessments based on published sources as well as analysis of recent primary data held at the Council for Geo-science. For the Duynefontein site, the palaeontological report commissioned by this office for the PBMR heritage study (Hart & Pether, 2007) is directly relevant to the proposed NPS sites.** **The bulk of information has been derived from the physical survey of the three sites. The methods used in the field are briefly described below.** **<u>Duynefontein:</u> Being relatively open country, the study area (the northern bulk of the Koeberg Nature Reserve) was searched by four team members. Large expanses of open land were covered with the use of light-weight agricultural motorcycles and an off-road vehicle so that maximum coverage could be economically achieved, while more thickly vegetated areas had to be searched on foot. Locations of heritage aterial were recorded, photographed and evaluated. A Garmin hand held GPS receiver was used to record positions of sites. Track logs were recorded should it become necessary to review landscape coverage. The duration of the study was six days.**

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			<u>Bantamsklip</u>: The study area was physically searched by four team members making up two paired teams, each equipped with a Garmin GPS. The coastal area was intensively searched on foot, each person spaced themselves 50 – 100 m from the next depending on vegetation density. Numerous transects were walked on foot, all tracks and drill roads in the study area were driven using an off-road vehicle. The areas inland of the coastal dune cordon were searched with the use of a light agricultural motorcycle so that tracts of open land could be covered as economically as possible. Locations of heritage material were recorded, photographed and evaluated. A Garmin hand held GPS was used to record positions of sites and features. Follow-up visits were carried out to evaluate any further areas to be used for access roads, sand stockpiles or possible future land acquisitions. Track logs were recorded should it become necessary to review landscape coverage. The duration of the study was six and a half days. **<u>Thyspunt</u>: The study area was physically searched by four team members making up two paired teams, each equipped with a Garmin GPS. The coastal area was intensively searched on foot, each person spaced themselves 50 – 100 m from the next depending on vegetation density. Numerous transects were walked on foot, all tracks and drill roads in the study area were driven using an off-road vehicle. A Garmin hand held GPS was used to record positions of sites and features. Track logs were recorded to review landscape coverage. The duration of the study was five and a half days with an additional four days being used to assess proposed road alignments and additional land required for infrastructure, sand and rock stockpiles.** She then gave an example where at the Bantamsklip site historical buildings were investigated as there are a number of old farmhouses on the northern portion of the site above the R14, shipwrecks and fish traps were also investigated.

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13	Mr Peter Grey City of Cape Town - Spatial Planning	Mr Grey said that he noted that the no-go option was removed from the EIA and he asked if this was an agreement with the DEA or is that challengeable by the public. He also asked if each specialist had assessed the no-go option. He also asked about the spatial planning policy of the City of Cape Town. He said that in the EIA Report there was no reference to any assessment of any planning policy for any of the sites. If the planning policy had been assessed, which he said was a requirement of NEMA, the Koeberg site is located in an area of expanded growth path. This is in planning documents that the City of Cape Town have been preparing for the last two decades. He wanted to know about the land-use restrictions that will result from an additional nuclear site over the long-term and why this has not been included in the EIA Report. He said that the City of Cape Town had commented previously on this issue and had requested that this issue be included in the EIA. He had seen a few paragraphs stating that the exclusion zone would likely be reduced to 800m	Ms Ball said that the no-go option or alternative was not removed, it was assessed as part of the EIA in terms of the EIA Regulations and NEMA requirements, but the consultants did not see this alternative as a feasible alternative. Ms Ball said that each specialist had assessed the no-go alternative from the perspective of their specific discipline. Ms Ball confirmed that land-use planning had been investigated and they had received comment from a land-use planning specialist, Mr. Nico Kriek of APS. Mr. Kriek's input can be found in Chapter 3 of the report. She went on to explain that in terms of the exclusion zones, the NNR would have to make a decision on the exclusion zone for the new nuclear power station. Mr Heydenrych said that international practice based on Generation 3 design have been formalised in Europe and there is a European Utilities Requirements document, which specifies the internationally accepted emergency zones. Based on this requirements document, internationally, the current radius of the urgent protected zone directly around the power station is 800 m. This is a much smaller area than the zone around the Koeberg Nuclear Power Station. There is a larger long term action protection planning zone outside which is 3 km. Ms Ball said that she disagreed with Mr Grey as a number of nuclear power stations around the world are built very close to residential areas. Ms Ball said that Arcus GIBB could not make a decision on behalf of the NNR as they will assess the site safety and plant safety for this particular application. Mr Stott explained that when Eskom had developed their specifications for the design for the type of nuclear power station, they had specified that it must be Generation 3 type technology. This is the modern type of power station and Eskom had based their requirements on European Utility requirements, which has a 800 m and 3 km exclusion zone.

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		and 2 km. Mr Grey said that national practice also states that reactors should not be located near residential populations therefore he feels that the existing regulatory framework in South Africa needs to be assessed. He feels that the worst-case scenario should also be assessed. The precautionary approach should be used.	
14	Mr Pieter Jolly	Mr Jolly asked what the overall cost of the project is, including the decommissioning of the plant at the end of its lifespan. He also asked if a realistic study has been done of this cost. He then wanted to know if it has been worked out that if this money had been spent on putting solar power into every household in the whole country and every other possible renewable energy, would a nuclear power station still be necessary. Mr Jolly then asked if it would be possible to investigate what this costs in other countries. If a specific figure cannot be given currently, it is an enormously high figure, has a similar high figure been used to consider	Ms Ball said that an amount of R150 billion construction costs was used in the assessment. Mr Stott said that Eskom examines all the costs associated with building power stations. Eskom are not only building nuclear, but coal power stations and a pumped storage scheme, they will also be building a solar thermal plant in the future. The solar thermal plant and wind energy facility which Eskom hoped to build formed part of the World Bank loan application. The final decision on whether to build or not is not Eskom's. Eskom have to apply for a license from the NNR and NERSA. The costs have to be kept as low as possible and have to be acceptable to NERSA who will evaluate the project on behalf of South Africa. **The NERSA licensing process also provides an opportunity for public participation.** The actual cost of any power station depends on what type of PWR model is used. Whether technology with the particular project is transferred or whether an equity partner is used. It is therefore impossible to state upfront exactly what the cost will be, as it depends on negotiations held with the suppliers and what type of contract is entered into. This forms part of the Integrated Resource Plan (IRP) as well as the

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		how much renewable energy could be constructed with this amount of money. Mr Jolly asked for clarification if the amount of R150b (for construction) is in today's money or was it future money.	Industrial Policy Action Plan. It is a complicated and complex issue. Until Eskom get the go-ahead from Government, they cannot say exactly what the costs will be.
15	Mr Pieter Jolly Koeberg Alert Alliance	Mr Jolly then asked if the nuclear power station is eventually constructed, he wanted to know why the sites up the coast had been discounted. There are two major problems that people have with nuclear power. One is exposure to high-level waste and the second is a melt down. There is the potential for a dreadful scenario if one of the power stations does melt down, it would mean an entire city would be wiped out. He understands that it would be more expensive to build them up the coast, but why not build them where there are far fewer people. Mr Jolly asked for clarification and asked is there a zero chance of an accident affecting people outside the 800 m.	Ms Ball replied that she would like to refer Mr Jolly to the Final Scoping Report and its appendices, for discussion on the integration of the proposed Nuclear-1 power station into the grid. The integration of the two Northern Cape alternative sites referred to is highly problematic, from both a time perspective and a cost perspective for Nuclear-1. There is also the aspect of electricity losses as the Northern Cape sites would require transmission lines of many thousands of kilometres to integrate them into the grid. The long transmission lines would also require new power line corridors to be developed which would have large negative potential environmental impacts. Social, economic, and biophysical aspects were investigated in order for Arcus GIBB to come up with the recommendations it did in the Final Scoping Report. **Post-meeting note taken from the Final Scoping Report compiled by Arcus GIBB:** **The alternative locations of the Nuclear Power Station were considered given the technical requirements associated with the strategic integration of the power through optimal utilisation of existing power corridors and transmission networks in conjunction with the existing baseline data obtained to date for five sites, namely Brazil; Schulpfontein; Duynefontein; Bantamsklip and Thyspunt** **The power generated by any technology must be integrated into the existing networks in an efficient and strategic manner. Thus, the EA must consider the impact of the actual Nuclear Power Station as well as the impacts associated with the infrastructure required to integrate and export the power as required.**

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			There are two primary aspects pertaining to the integration of power i.e. integration into the local area network and exportation of the excess power to areas outside of the local network. Integration of the power on a local level, to supply the local area network requires a number of transmission lines, mainly 400 kV, linking into the main load substations or transmission nodes. The export of power requires either the construction of new power corridors or the utilisation of existing corridors through the necessary reinforcements. **At the Duynefontein, Bantamsklip and Thyspunt sites there is a need for local integration of the generated power, which will consist of 400 kV lines to the major sites in the respective areas. The cost associated with local integration is considered 'common' for all three sites, although the actual distances will result in variations to the anticipated costs. In addition, it will also be necessary to link major power corridors to export the power to other areas of demand. The major power corridors consist primarily of 400 kV and possibly 765 kV lines. The main issue will be the distance to the nearest major corridor point and the access difficulty.** **Brazil and Schulpfontein sites were deemed unfeasible for the proposed Nuclear Power Station based on the following reasoning:** • **Optimal, strategic and cost effective utilisation of existing infrastructure associated with the Duynefontien, Bantamsklip and Thyspunt sites, with respect to local integration and exportation of power via existing power corridors;** • **Prevention of lengthy time delays associated with the authorisation and construction of the new power corridors applicable to the Brazil and Schulpfontein sites, which will prevent Eskom from providing the power within the required timeframes;** • **Unnecessary environmental impacts associated with the construction of new power corridors given that there is existing infrastructure; and** • **Cost implications associated with the development of new power**

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			corridors.
16	The Facilitator	The Facilitator asked if there was any documentation available which explains Generation 3 technology in detail.	Mr Stott said that Generation 3 technology states that there will never be an accident that will require evacuation outside of the 800 m. If there is any melting of fuel, it gets contained inside the reactor complex. The majority of the independent regulating bodies throughout the world state these facts. Mr Stott said it is the intention of Generation 3 that outside of the 800 m there will never be the need for evacuation. **<u>Post-meeting note:</u> Generation III reactor is a development of any of the generation II nuclear reactor designs incorporating evolutionary improvements in design which have been developed during the lifetime of the generation II reactor designs. These include improved fuel technology, superior thermal efficiency, passive safety systems and standardized design for reduced maintenance and capital costs.** **The Gen III overall objectives are :** • **have a standardised design for each type to expedite licensing, reduce capital cost and reduce construction time,** • **be simpler and more rugged in design, easier to operate and less vulnerable to operation upsets,** • **have higher availability and longer operating life,** • **be economically competitive in a range of sizes,** • **further reduce the possibility of core melt accidents,** • **have minimal effect on the environment,** • **have higher burn-up to reduce fuel use and the amount of waste** **In terms of the reduction of the possibility of core melts the IAEA has issued guidance that while a Core Damage Frequency (CDF) of 10^{-4}/yr is acceptable for current reactors, new construction should achieve 10^{-5}/yr .** **The first generation III reactors were built in Japan, while several others have been approved for construction in Europe, China, Taiwan, Russia, India, Iran,**

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			Bulgaria, Korea & UAE.
17	Dr Christian Bremm	Dr Bremm noted that something is going to be built with an unsolvable problem, waste. No-one seems to be taking full responsibility for this. Using examples from other parts of the world just highlights how big this problem is, as no-one seems to have the answer to this problem. He went on to ask about the direct impact on the low-grade radiation on human health, also what about other living creatures that do not stick to the buffer zones such as cattle or wild life. Animals such as cattle, which might get 'modified' and might end up in the human consumption chain. Has this issue been addressed and are there any studies showing this? He asked what is going to be the affect of this. Dr Bremm said that he is a medical doctor and people who live around these areas, especially around Ilanga, area there is a significant rise in the rates of all types of cancer.	Ms Ball replied that Arcus GIBB notes your concern but that in other parts of the world there are places where the process of licensing high-level waste has begun. She went on to say that regarding radiation, this has been discussed in both the Air Quality Study and the Marine Specialist who looked at the potential impact on marine life. The Agricultural Study also examined aspects around radiation as all of the sites have agriculture in the vicinity. The Koeberg Nuclear Power Station example and tests conducted around this site was supplied to the specialists. The specialist had found that there was a very low significance of probability of agricultural products being contaminated by radiation and getting into the food chain. Ms Ball explained that the Human Health Risk Assessment does address this based on the studies around the Koeberg Nuclear Power Station. Mr Stott asked Dr Bremm to supply him with any scientific studies that show any increase in the risk of cancer around nuclear facilities. All the studies that Mr Stott has researched show there is no increase. Ms Ball suggested that Dr Bremm go onto the EIA websites and look at the Scoping Report which contained a graph explaining this. By 2025, 40 000 MW, the current capacity in South Africa, comes to the end of its life. Those coal fired power stations were built in approximately the 1960s. Even if the country's demand grows at 1% or 0.5%, there is a need to replace the 40 000 MW of generation capacity by 2025. The fact of the matter is that South Africa is in the middle of an electricity generation crises. Ms Ball said that it was her understanding that the largest users of electricity are not domestic users, it is mining and industry. Mr Stott said that two issues were being confused. The EIA is being confused with the Integrated Resource Plan (IRP). The IRP process is the process that is supposed to

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		Dr Bremm then said that the consultants were unable to answer the question regarding funding and comparing building a nuclear facility to a renewable facility. This should be a priority investigation, to see if it is viable to have a clean source that could be erected in the near future and which would require about the same space as the nuclear facility. Dr Bremm also said that it was mentioned initially that projected growth and need to build involved the capacity of 4% per annum, which is based on the projected GDP. It was then mentioned that this is de-linked from the future improvement in efficiency. However, he feels that it is not de-linked, and it should be inversely linked because globally throughout the world a lot of economies are derived from investing into alternative sources of energy. This raises the GDP but on the other side it lowers the actual electricity consumption. In order to justify building a power station there has to be significant numbers have to be created. If not all measures of efficiency have been seriously	provide the answers on how much energy efficiency has been taken into account. Eskom has heard that if you take 5 000 MW of demand side management into government's plan. Until Eskom see this plan, they do not know how much is efficiency, how much is renewables and how much is base load. When the plan is released in June, then this debate can be held. He asked that it be borne in mind that this EIA is going ahead and until the plan is actually published, only then will Eskom know whether nuclear is to be constructed and also how much nuclear is included in the plan. If the plan is released with no nuclear, then Eskom do not go ahead.

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		investigated, and he would like to see how this was factored into the calculations, he challenges the growth of 4%. Dr Bremm said that he struggles to see the aggressiveness to address the electricity crisis problem from an energy efficiency point of view. The electricity crises is phenomenally low, the new tariff that will be implemented in April 2010 where staggered range of tariffs will be introduced is the one driver that would change the whole picture. If it is more expensive, people spend less.	
18	I&AP	The amount that is proposed to be spent on a nuclear facility could build many more renewable energy plants. Has hydro power been assessed, in fact have alternatives been adequately addressed and if not this is a fatal flaw. For example, heating of domestic water takes up 30% of the domestic market consumption. On the basis of this figure 4,000 MW in domestic consumption alone.	Ms Ball said that it appears that a comparative table of costs is needed in the report. **Post-meeting note: Although it is not the intention of the EIA process to provide a detailed evaluation of the costs of various alternative forms of electricity generation, the following table of comparative costs for a number of different generation technologies are reviewed in a joint report by the International Energy Agency (IEA) and the OECD Nuclear Energy Agency (NEA)[1]. This report provides levelised costs of electricity (LCOE) per MWh for almost 200 plants, based on data covering 21 countries (including four major non-OECD countries), and several industrial companies and organisations. The study was carried out with the guidance and support of an ad hoc expert group of officially appointed national experts, industry experts and academics.**

[1] International Energy Agency and OECD Nuclear Energy Agency. 2010. *Projected costs of generating electricity – 2010 edition.* International Energy Agency and OECD Nuclear Energy Agency. Accessed from http://www.nea.fr/pub/egc/ on 23 May 2010.

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			The study reaches two important conclusions: o **First, in a low discount rate (5%) scenario, more capital-intensive, low-carbon technologies such as nuclear energy are the most competitive solution compared with coal-fired plants without carbon capture and natural gas-fired combined cycle plants for baseload generation. Based on the data available for this study, where coal has a low cost (such as in Australia or certain regions of the United States), both coal plants with and without carbon capture [but not transport or storage] are also globally competitive in the low discount rate case (See Figure 1); and** o **Secondly, in a high discount rate (10%) scenario, coal without carbon capture equipment, followed by coal with carbon capture equipment, and gas-fired combined cycle turbines (CCGTs[2]), are the cheapest sources of electricity. In the high discount rate case, coal without CC(S) is always cheaper than coal with CC(S), even in low-cost coal regions, at a carbon price of US$ 30 per tonne. The results highlight the paramount importance of discount rates and, to a lesser extent, carbon and fuel prices when comparing different technologies.**

[2] In South Africa, gas turbines are generally used only for peak generation, due to the high cost of fuel.

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			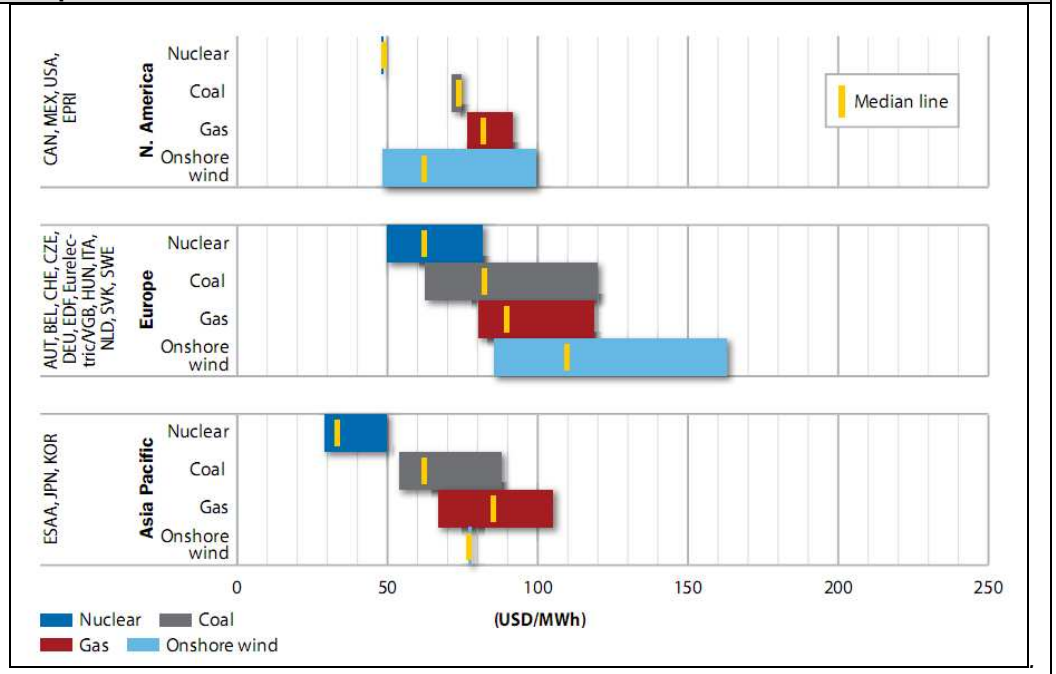 ***Figure 1:*** *Regional ranges of LCOE for nuclear, coal, gas and onshore wind power plants (at 5% discount rate)*

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			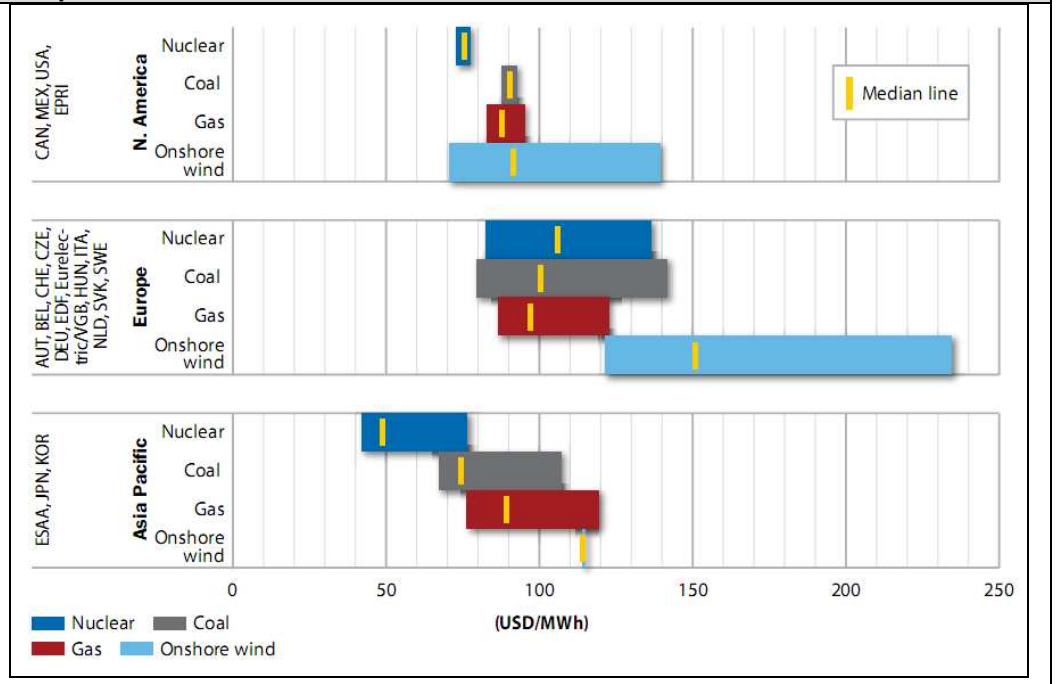 ***Figure 2:*** *Regional ranges of LCOE for nuclear, coal, gas and onshore wind power plants (at 10% discount rate)*
19	Mr Theo Engels	How much has Demand Side Management done in terms of efficiency?	Mr Stott said that demand side management has had an impact but he did not have the exact figures with him. In 2008 the demand side management program saved about 500 MW, whether this figure still remains, he is unsure. **<u>Post-Meeting note:</u> The 2009/2010 saving was 372.3MW, against the target of 432MW.**
20	Ms Liziwe McDaid	Ms McDaid asked Mr Stott if Eskom was involved in the compilation of the Integrated Resource Plan 2.	Mr Stott replied that Eskom was requested to provide input to the Department of Energy (DoE). There are other consultants that then examine all of the information and they are compiling the final report. Eskom did provide input as do other organisations.

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		Ms McDaid then stated that she has been involved in this EIA for many years, both this EIA and the PBMR EIA. She asked why the consultants do not have answers to the majority of the questions. The implication is that after so many months, this 'final stage of report', is not final at all. She agreed that it was a draft but that it was in its final stages. She feels that many of the questions have already been asked, and yet they have not been answered in the documents. It is stated so often that there will be a need for additional studies. On one of the slides, there was a statement that there was <u>some</u> lack of trust in the EIA process. She asked the audience who did trust the EIA process. She then requested that it be recorded that there is a lack of trust in the EIA process. She sees a clear bias in the presentation. There is a lack of trust. Her other issue concerned risk. Mr Heydenrych had stated that there is always a risk, and yet in the slide it states that there is a 'perceived' risk.	Ms Ball replied that she strongly disagreed with Ms McDaid when she states that Arcus GIBB has not been objective and have not done their work thoroughly as well as the specialists. She stated that the specialist studies have been peer reviewed by other technical specialists. <u>**Post-meeting note:**</u> **Subsequent to this meeting, a lack of specific information in some specialist studies has been acknowledged. These reports will be revised. The Draft EIR will be revised and released for a further 45 day comment period.** In terms of Arcus GIBB's independence, there will be a declaration of independence in the revised version of the EIR. Regarding the specialist studies it is quite typical in many EIAs for specialists to recommend further studies. That does not mean that the information that they have is not sufficient to make recommendations and conclusions in their assessments. The impact assessment tables have confidence limits that they have in terms of making the assessment and they can all be interrogated by the public. There are areas where the specialists have recommended that there is on-going work required. Throughout this process, even in the public meetings, for example at the Bantamsklip Public Meeting, the Botanical Society of South Africa from that area have volunteered to do on-going plant surveys for Eskom. This has been taken up positively by the Applicant. Arcus GIBB feels that there is enough information in this EIA at present to make the recommendations contained in the Draft EIR. Mr Stott said that there were Generation 3 type plants under construction at the moment in Finland, China and France. There are presently none operating.

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		She therefore stated that she believes that the consultants are no longer fulfilling their task in terms of the regulations, which state that they must be objective and not biased. She then asked where the Generation 3 nuclear reactors are commercially run presently and for how many years have they been operating without any problems. Ms McDaid then raised the point that the no-go alternative puts forward that coal is the only alternative. She asked what expert had said that renewable energy was not possible as a base load, where was that study and where was the peer review of that study. There are many opinions being put forward into the substance of the report with no facts to back them and where there are negatives against nuclear what they are hearing is that it is 'perceived' or 'some' and that 'additional studies are needed'. The fundamental economics are not available.	
21	Mr Norbert Furnon-Roberts City of Cape Town –	Mr Furnon-Roberts said that he was puzzled that Arcus GIBB would accept the terms of reference from	The facilitator asked if this was not going back to the issue in which the law has been quite specific to the environmental consultants in terms of saying this is the NNR process and DEA lays down their competency and state what the consultants shall

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	Ward Forum 77	Eskom if the location and the waste and storage are linked. He has never come across something like this before. He asked why, when they knew this, did they accept the terms of reference.	assess. The consultant is then hamstrung and is the process maybe deficient.
22	Ms Candice Pelser Commonsense Everywhere	Ms Pelser stated that in the letter accepting the final Scoping Report there are two statements, waste disposal and transportation must be described in detail and also long-term storage of high-level nuclear waste must be addressed. It is therefore clear that it is in the scope. She went on to say even though it was mentioned in the report, there are no definite plans about what will be done with this waste for 250,000 years.	Ms Ball explained that it had been included in the study. It is in Chapters 6, 7, 8 and 9 of the Draft EIR. Ms Ball said she noted the comment. The facilitator said that the point is made that there is huge discomfort within the public regarding the two processes, the NNR and the EIA processes.
23	Ms Liziwe McDaid	Ms McDaid then said that even outside of the ridiculous state where the NNR take many of the decisions, even within the EIA, issues such as the no-go alternative, need and desirability are premised on the basis that only coal and nuclear are available. The role of the independent consultant, should be to find other information and put it on the table. From her perspective, Arcus GIBB have not done their job.	Comment noted.

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24	Ms Liziwe McDaid	Ms McDaid noted that in the need and desirability section the carbon footprint was mentioned. It states that the carbon footprint of a nuclear power station is the equivalent to solar and wind. However, in the figures quoted for carbon dioxide construction on the so-called life-cycle of a nuclear power plant the final waste disposal is not included. Logically, this should have been pointed out by saying that, therefore, nuclear is worse when it comes to the carbon footprint when compared to solar etc. simply because there is an unknown.	Ms Ball acknowledged this comment.
25	Mr Peter Becker Koeberg Alert Alliance	Mr Becker said he wanted to mention to Mr Stott that there is KiKK study, which shows a doubling in leukaemia cases. He asked Mr Stott if he had read any research which states that there are positive effects or if he had only read research that stated there was no effects from radiation emissions of a nuclear plant. He wanted to place on record that he feels many people had not understood Mr Stott's answer to his question.	Mr Stott said he has seen research, which has not got a true statistical basis where the statistics are too low for it to show that there is any actual effect. He has also seen research that shows no effect. There is a great deal of research that statistically does not have information to draw conclusions either yes or no. An I&AP, Peter Bekker, replied that Mr Stott said that he had seen research which has indicated that there are cancers that result from being in the proximity of a nuclear power station. But that he has seen other research that discredits that research in terms of its statistical relevance from which you can then draw conclusion. He has seen research from both sides but scientists have discredited the research showing there are effects. Ms Ball said that the company names are displayed as these reports were undertaken by companies under the expertise of scientists. There is also a summary table in Chapter 7 of the Draft EIR where each one of the specialist studies is listed, the company that undertook the study and the key consultant. As part of the appendices

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		He noticed that the authors and reviewers are not given on the specialist reports, this he finds quite strange. He has put a request in via Ms Shinga to ask about the author and reviewer of one of the reports, the seismology report. He has not had a reply as yet.	they have also included all the CVs of key specialists in each team. This information is also available on the EIA websites. She said he would receive a reply to his request shortly. There is also a table in the report of reviewers.
26	Ms Anne van Huyssteen	Ms Huyssteen said that she is both a mother of young children and a pregnant woman. She said that no matter what the regulations state in terms of which bodies cover certain elements whether it is to do with waste or emergency plans, or human health impacts, she thinks that any EIA that does not cover these very important issues is not an EIA. She feels that human beings are part of the environment and that they deserve as much time on the slide show as marine molluscs, who are also important. The levels of Strontium 90 which are found in marine life are very interesting and very important and very worrying. Strontium 90 for example, is concentrated through the food chain and it might occur in very low levels	Ms Ball replied that this has been assessed in this EIA. Ms Huyssteen will see a number of specialist studies that strictly speaking fall under the ambit of the NNR but they have been included in this EIA and there have been independent specialists examining these issues. For example INFOTOX undertook the Human Health Risk Assessment. She suggested that Ms Huyssteen go to Appendix E of the specialist reports she would find specialist reports concerning Human Health Risk Assessment and Emergency Response Assessment, and Site Control Report. They were taken and the results integrated amongst all the specialists, for example, the marine study examined the radiological affects on the marine environment. The agricultural study examined exactly what she had mentioned, the food chain and possible radiological effects on milk production etc. The economic study investigated potential marketing and effects on products and service lines within the agricultural sector. These were assessed in the EIA, but the DEA does not have the competency or the expertise to assess and make a decision on radiological and health and safety aspects and they will be assessed by the NNR. These have been included for information purposed in the EIA. Ms Ball said she wanted to correct the statement as Arcus GIBB had investigated potential impacts across all of the specialist studies. Some of the specialists had looked at a range of potential impacts. The specialists have stated quite clearly that

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		that have not caused the consultants much concern, but it is known by science that these things get taken up, fall down as rain, then as groundwater plants mistake them for calcium, they get taken up and eaten by cattle. There are diary farms around all of the proposed sites. That is then concentrated into the milk that is fed to babies, children and in fact all humans. This then lands up in our bone marrow, especially into the bone marrow of people and animals. It is well known the KiKK report is one, levels of leukaemia do increase around sites where there are nuclear power stations. If those effects are not contained because milk is transported. On behalf of mothers and children, this is not a satisfactory EIA. She then spoke about bio-switch and said that there was a point of bias that this whole EIA seems to be confused about whether it is investigating whether this is too dangerous for the environment or which of the three sites is the least dangerous. These two issues are entirely separate, but conveniently impacts are being examined and then	there are no fatal flaws in any of the alternative sites assessed. For example, the seismic risk at each site is within the internationally acceptable limit for a conventional nuclear power station. She invited anyone who wished to challenge any of the specialist reports, as well as the integration of the studies and Arcus GIBB's environmental assessment, they should please submit these in writing, as this was a Draft EIR for public comment.

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		which impact is not quite as severe as other impacts. Ms van Huyssteen added that when examining carbon emissions, it is not impossible to ignore the effects of mining and the transport of uranium and the decommissioning of the plant. These would all add up to the fact that it is not comparable to renewables in terms of carbon emissions. Ms Huyssteen then stated that the section on risk was about managing people's perception of risk. That is not what risk is about. It is what are the risks and managing those risks.	
27	Ms Janda McDonald Koeberg Alert Alliance	Ms McDonald stated that in the Human Health Risk Assessment there is no data showing anything about the levels, which Ms Anne Huyssteen mentioned, there is nothing that has actually been assessed. All the responsibility has been placed in the NNR domain. To say that it has been assessed is misleading. She went on to say that this is called an EIA, assessment can only be	Ms Ball replied that the specialists do have the data. The delineation between the NNR and DEA has been explained previously in the meeting and other public meetings as part of this EIA. She invited everyone to look at the Memorandum of Agreement between these two organisations, which is available on the EIA websites and in the Draft EIR. The facilitator explained that if the public has a problem with the Acts themselves, the environmental consultants cannot do anything about re-writing acts of parliament. This would have to be taken up with national Government. If, however, the public are challenging the substance of the reports, because they are concerned that there is insufficient data or available data has not been taken into consideration and evaluated, then the interested party should make a submission in writing as part of this EIA process via ACER Africa.

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		made on data and evidence and analysing this evidence to come up with recommendations. Arcus GIBB cannot say they have performed an EIA if they have no data and if there has been no analysis.	
28	Ms Liziwe McDaid EarthLife Africa	Ms McDaid asked for a point of order. There was a response earlier that the specialist studies all have authors names on them and that there is a list of reviewers. She said that she had a copy of the CD on her laptop and the studies did not have names on them. She had opened Appendix which was Technical Specialists and Specialist Reports CVs and this is a list of CVs but there is no indication of which report links to which CV. This would mean that someone would have to open each CV of all 24 specialists to see which specialist had written which report. She asked for the specialist reports to be listed with the author alongside this. She then asked why is it not possible to have for example Seismology Report with the author next to it.	Ms Ball said that Table 7.8 on page 724 of the Draft EIR contains a table, the first column is task/discipline/local involvement, the second column is team leader' name and the third column is organisation. Ms Ball said that sub-folders could be placed on the website and then CVs of the specialist for each report could be placed with their specific report. **<u>Post-meeting note:</u> Subsequent to the meeting the EIA websites have been made more user friendly with respect to the public being able to easily locate a particular specialist's CV**.
29	Dr Christian Bremm	Dr Bremm asked is the NNR the organisation that is most interested in building a nuclear power plant. Why	The facilitator said that this is the way the country's legislation has been written and if we want to challenge that, it has to be done through the correct channels.

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		therefore are all the difficult questions put in the hands of the organisation that has a vested interest in the project?	
30	Donna	Donna said that it has been mentioned that there were no fatal flaws as everything can be mitigated. There is mention of how conservation would be improved, agriculture would increase and all the benefits are mentioned. She asked what will be done about the people who work with this report, whose responsibility is it going to be.	The facilitator explained that for example, if the report has been based on a great deal of substance, it will then be submitted to the authorities who then examine the report and if they are satisfied with the context, they will grant authorisation. However, what happens in terms of making sure that all of the issues are properly mitigated. Who carries this responsibility for this and are there proper processes in place to actually manage these flaws. Ms Ball said that the recommendations from the specialists studies have been taken (in all of the phases) and Arcus GIBB have built these into the draft Environmental Management Plan (EMP), this is part of Appendix D. Should the authority authorise this project with conditions, what usually happens is that the EMP is unpacked into the authorisation. Also the EMP needs to be implemented by the Applicant, Eskom Holdings Limited. Typically the DEA would undertake audits of the implementation of the EMP. Eskom has also got their own internal audits and furthermore what has also been recommended for this project that a Monitoring Committee be established that will encompass various key stakeholders and I&APs around the site. There are also members of the public who through that committee can raise concerns.
31	Ms ML Roux Habitat Council & CAPTRUST	Ms Roux said she would like to respond to the Eskom spokesman where he said that the safety of the people working in the facility was ensured for the lifetime of the plant. That is ridiculous, as people are not worried about the lifetime of the plant, which is 40 or 50 years, they are worried about the long-term future of the whole of the country and the	The facilitator said that a further mechanism given to members of the public, this is the process of Promotion of Access to Administrative Justice Act.

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		world. Ms Roux also commented on the splitting of the decision-making authority. There is a terrible situation that many people have been fighting against in parliament. This is what happened with the mining legislation where decisions are taken by the DME that are totally environmentally unsuitable, where even DEA has allowed itself to be emasculated. People have lost total faith in the situation of the country's legislation. Ms Roux continued that in Mpumalanga where DEA has been taken to court, DEA do not oppose the motion so that there is no final judgement and then this cannot be used in the next case. That single case is then dealt with but there is no legal precedent. The mining issues where the old Energy Commission which is now the African Exploration and Mining House, which has special privileges that they can ignore certain things from the EIA such as exemptions granted in terms of the law. DEA allowed this to happen and this confirms that the public are now in a terrible situation in this country.	

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32	Mr Rodney Gurzynski EarthLife Africa CANE Independent Researcher	Mr Gurzynski wanted to interrogate the economic impact specialist study. They gave some figures for the price of nuclear power as being cheaper than coal or gas and they base this on the UK Government's White Paper. If nuclear power was cheaper than coal or gas, why are independent power producers not getting involved in nuclear. He added that the economic impact assessment confined itself to the 20 km area around the nuclear power station. Although it discusses the larger issues, it confines itself to this 20 km area. That 20 km radius includes the 16 km evacuation zone, this is not the emergency zone of 800 m. Housing and population within this zone have to be kept to a low density. There is no description in this impact assessment of what this low density implies for the City's strategic densification or northward movement because below the Strand and Melkbosstrand are within this zone. There is therefore a limit to the allowable population based on the time it takes to remove people under an evacuation scenario. That has not been costed at all, what does it mean	Mr Heydenrych explained that the current indication in terms of zoning and in terms of low density is a result of the Koeberg Nuclear Power Station, which is already there. This is a given. The emergency planning zones (EPZs) for the new Generation 3 type nuclear power station are much smaller. The EPZs for the proposed new nuclear power station will be determined by the NNR and are likely to be much smaller than that of the Koeberg Nuclear Power Station. Mr Stott explained that the current zones for Koeberg are 5 km and 16 km. Within the 5 km zone there can be no new developments and within the 16 km zone there is a limitation on development to ensure that the emergency plan is viable. However, for the new technology, the same radii are 800 m and 3 km.

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		to the city, the loss of this land, or the limitation on the density. He feels that this is a fatal flaw. Mr Gurzynski said that it would appear as if the specialist report is incorrect, as they have described the 16 km evacuation zone.	
33	Ms Bronwen Lankers Zero Waste Hout Bay	Ms Lankers said that her question and concern is nuclear terrorism. Has this been investigated as this is the biggest threat to global security.	Ms Ball said that the EIA did assess site control and security, there is a specialist study (Appendix E) on this subject. The operator of the plant would have to comply with the NNR standards set. Mr Stott added that all power stations are National Key Points and they are also assessed in terms of the risk by the National Intelligence Agency.
34	Mr Peter [Surname]	Peter said that safety excludes transport of nuclear material because transport is outside the nuclear plant.	Ms Ball said that transport routes of nuclear waste and the fuel supply were examined. This was examined in terms of safety risks, but once again this will fall under the NNR.
35	Dr Sabine Raab Koeberg Alert Alliance	Dr Raab stated that she is worried and concerned and strongly oppose that the no-go alternative is excluded from this study. Seeing as though there is a lack of, for example, studies that should be included such as the economic comparable study.	Comment noted. **As stated twice during this meeting, the No-Go option/ alternative has been assessed in the EIA.**

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1	Mr Daniel Reinecke Koeberg Alert Alliance	Mr Reinecke asked a question about the 200 metre coastal reserve. He presumes that the nuclear power station will be fenced off to prevent people from working along the reserve area. He also asked about the inlet and outlet tunnels, would they be constructed on a cut and fill basis or are they going to be tunnelled. He asked about the inlet and outlet structures on the coast, and he wanted to know if these would also be fenced off.	Mr Heydenrych replied that the tunnels would be below ground level. Obviously they need to go out to the ocean for quite a distance (at Thyspunt 1.8 km). Therefore it would not be necessary to fence the area off. **At the Koeberg Nuclear Power Station there is access to the public along a portion of the beach very close to the nuclear plant. In the reserve area the public have access to the beach.** The Sea Shore Act determines that everything from the high shore is public land but there are also other security considerations. The National Intelligence Agency will determine if there needs to be a security zone off shore as is the case with the Koeberg Nuclear Power Station where there is a 2 km security zone of limited access. Preliminary indications are that there will most likely be a 1 km zone around the power station.
2	Mr Kevin Thorpe Milnerton Residents Association	Mr Thorpe asked if a site is determined for Nuclear-1 would Nuclear -2 and –3 be on the other sites or would a complete new investigation to find suitable sites in South Africa be started. Mr Thorpe asked if apart from the five sites that are presently being investigated and the sites that have been discarded on the west coast, are there any other properties available in South Africa that are	Mr Stott replied that Government is developing the Integrated Resource Plan (IRP), which is a 20-year plan where it will be determined what the demand for electricity should be and what technology should be used to meet this demand. Assuming that nuclear is included in the plan and authorisation is granted for Nuclear-1, then new EIAs will begin for Nuclear-2 and -3. Whichever of the alternative sites is being used for Nuclear-1, the other two sites would be investigated as well as the possibility of other new sites. Mr Stott replied that Eskom do not own any other properties which has been earmarked for nuclear power generation. He went on to explain that if the Government decide that a fleet of nuclear power stations are needed,

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		owned by Eskom and which could be used.	a new program will be started by Eskom/ Government for the identification of new sites.
3	Mr Danie Schoeman	Mr Schoeman said he has noticed that the EIA was undertaken on the proposed power station, surely consideration should be given to the overhead powerlines from the power station to the grid. The two studies should be combined as the visual impact of powerlines is severe. For example at Thyspunt there are no powerlines whereas at Koeberg there are existing powerlines. Mr Schoeman stated that before a decision is made on Nuclear-1, the EIAs for the powerlines must be completed. The influence of the powerline might be greater than the power station itself.	Ms Ball replied that from this EIA's perspective this has been a comment raised from as far back as the Scoping Phase. Using the slide from the presentation Ms Ball explained where the various EIAs are within the process at present. For the Bantamsklip transmission lines, Arcus GIBB is currently undertaking the EIA and it is in the Scoping Phase. Thyspunt and Duynefontein studies are in the EIA Phase of the studies. There have been integration meetings held with the various consultants that are undertaking these various studies for the transmission lines, there have also been meetings held with the DEA, during which integration issues have been discussed. Mr Stott explained that if the Government does give approval for a nuclear program, Eskom would have to investigate Nuclear-2 and -3. Therefore, it is crucial for Eskom to complete the transmission line EIAs. Even though the specialists have recommended Thyspunt as the preferred site for Nuclear-1, the transmission line EIAs need to be completed. It is important for all transmission line EIAs to be completed so that in the event of Nuclear-2 and -3 being authorised, information on transmission lines is available for longer term planning. Mr Stott responded by explaining that if the transmission line EIA produced a fatal flaw that could not be mitigated by choosing a different route, then the site would be declared unsuitable. To date none of the transmission

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		He then asked if there was any possibility that some of these lines could be underground so that the visual impact of the massive overhead lines could be lessened.	line EIAs have experienced a fatal flaw. There are difficulties with the Bantamsklip EIA. Eskom believes that before final approval is given for Nuclear-1, all the EIAs would have progressed far enough to be able to make a decision on the site. There should be sufficient time for this as apart from environmental authorisation there are many other authorisations that Eskom has to acquire, in particular a nuclear licence. A nuclear licence, which is granted by the NNR is based upon their assessment of the safety analysis report for the particular design that Eskom have chosen. This phase has not even started yet as Eskom has not begun negotiations with potential supplier(s) as yet. Mr Stott then explained that the voltages would be either 400 or 765 kV lines. There is nowhere in the world that a type of technology exists that would enable this type of transmission line to be buried. Lower voltages transmission lines can be buried but not the high voltage lines. Ms Ball said that during the EIA for the Bantamsklip transmission lines this is one of the alternatives that has been raised by the public and Arcus GIBB are obtaining an independent study to investigate this. However, all indications are that the technology does not exist to enable the 765 kV transmission lines to be buried.
4	Mr Mike Meyrick I&AP	Mr Meyrick said that the here and now is being discussed. The nuclear power station is to go on stream in 2018. This has probably got a 60-year service life. He asked if the social implications for 2078 have been investigated. For example the	Mr Heydenrych stated that the proposed design of the nuclear power station is Generation 3 design, which is significantly different from the old Koeberg Nuclear Power Station. Koeberg, because it is based on old technology has a certain radius of emergency planning

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		NNR are being heavy handed on the local landowners, as no-one may undertake development within the exclusion zones. He said that Atlantis would be cut off from the rest of Cape Town and if there is a third power station, then there will be a sterile situation for the next 120 years. Mr Meyrick asked if this would take into account the fact that this old power station has another 26 years or even possibly 36 years to go. The NNR seems to not have the interests of the public in mind but rather the interests of Eskom seem to take priority. The NNR was set up to help the public against the utility but this does not seem to happen. The facilitator added that this was also a concern raised at the meeting held during the morning where the City of Cape are concerned about development in this area.	zones surrounding the power station. The radii of the zones for the new type power station are much smaller, the radius for this plant within which development is not allowed is 800 m. There is a larger zone of 3 km where restricted development is allowed. Mr Heydenrych said that this would be a decision that the NNR would have to make. Mr Stott said that he could not comment on behalf of the NNR. He would take note of what has been said. Eskom has been in discussions with the NNR for the Koeberg Nuclear Power Station to try and get the planning zones reduced and so far this has been unsuccessful.
5	Mr Daniel Reinecke Koeberg Alert Alliance	Mr Reinecke added that the NNR need to make a ruling about the proposed 800 m and 3 km zone. It is not only the question of the distances involved but it is also a question of the emergency response.	Ms Ball said that Mr Reinecke was correct in that the NNR makes that decision and Arcus GIBB have based the EIA on the assumption that these figures will be used.
6	Mr John Iosiphakis	Mr Iosiphakis asked if there was an environmental study done for the finances of this project.	Mr Heydenrych answered that there was an economic study undertaken as part of the EIA process. This study investigated the cost of the entire power station including construction and operation and all the activities that would be required including waste management.

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			Mr Stott said that any power station has to be financed and this would form part of the Integrated Resource Planning process. Government will investigate what technology would be feasible for South Africa. No matter which power station Eskom builds, they have to apply for a licence to the NNR and they will also investigate the cost of the electricity. They have the right to decline on grounds of cost. Eskom is investigating a funding model from the capital expansion program for the building of all the new power stations as well as the transmission lines. Eskom are also examining how much technology should be brought into South Africa and how much local manufacturing should be used. This is done for coal-fired power stations and nuclear. The funding issue is still a big question of how electricity generation will be funded. There are various models that can be used such as a straightforward loan. No specific model has been decided upon at this time.
		He also asked if the other sites have facilities for waste disposal. If there are no waste facilities at the sites that have been chosen would all the waste be transported to Vaalputs.	He explained that the high-level radiological waste would stay on the nuclear site (for all sites) and only the intermediate- and the low-level waste that would be transported to the Vaalputs waste site in the Northern Cape. Irrespective of which site is chosen, two forms of waste, the intermediate- and the low-level waste would need to be transported. The transportation study examined the transport routes and found them suitable.
		Mr Iosiphakis asked if every site would have a desalination plant. He said that this plant would also generate waste.	Mr Heydenrych said brine would be produced from a desalination plant which is a hyper-saline solution. The marine specialist and the oceanographic specialist

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			investigated the disposal of this waste and it was proposed that this be disposed of in the sea. This will be mixed with the cooling water that is taken back into the sea. It would be diluted and by the time it is released there should be no impact on the sea life. Ms Ball added that that is what would occur during the operational phase. During construction they proposed that it be mixed in the surf zone, a highly active zone to enable it to be mixed with the receiving sea water quickly.
7	Mr Peter Becker Koeberg Alert Alliance	Mr Becker said that it was reassuring to hear that the high-level waste was never going to be transported. He is confused about the process. There was a letter from DEA which accepted the scoping conditions: 2.10 Waste disposal and transportation must be described in detail in the EIR. 2.11 The long-term storage of high-level nuclear waste must be addressed. Mr Becker said he was curious to know if these conditions have been addressed or has that got to be decided by the NNR. Mr Becker then asked if the scenario of a waste disposal truck being involved in an accident been analysed.	Ms Ball said that she wished to correct Mr Becker's first statement, there is no licensed high-level waste site in South Africa, in fact there is only one licensed high-level waste site in the world which is for military waste in the United States of America. For the foreseeable future, until there is a licensed high-level waste site, the high-level radioactive waste will be stored on site. This does not mean that there will never be a high-level waste site in South Africa at some stage in the future. Ms Ball said that an accident during transport of waste has not been analysed. This should be carried out in the safety studies and assessed by the NNR. Ms Ball said that the DEA is the decision-making authority for the NEMA Act and the EIA Regulations fall under this Act. Decision-making for the NNR Act falls under the NNR. In terms of the cooperative agreement, the NNR makes all decisions regarding radiological issues and health and safety issues. In this EIA, Arcus GIBB has included a number of specialist studies that touch on radiological issues and health issues. An example is the Human

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			Health Risk Assessment and the Emergency Site Control, as well as the Emergency Planning, they have been included for information purposes. Mr Stott added that the NNR is also responsible for the licensing and regulation of transportation of all nuclear material in South Africa. They would undertake an assessment of the safety risk associated with transporting any form of waste. They would assess the transportation of new fuel coming to the power station or waste going from the power station. This is conducted according to international regulations. **Post-meeting note: The following excerpt describes waste disposal and is taken form Chapter 10 of the Draft EIR.** ***The only feasible and reasonable alternative for the disposal of Low-Level and Intermediate Level radioactive waste is disposal at the Vaalputs nuclear waste disposal site, as it is the only authorised facility for this form of waste in South Africa. Vaalputs has more than sufficient capacity for the waste that will be generated by Nuclear-1.*** ***With regards to High-Level Waste (spent fuel), the only alternative currently available in South Africa is long-term storage of the spent fuel in the nuclear power station. Vaalputs is being considered as a disposal site for High-Level Waste, but the required authorisation processes for this will take several years, so currently the disposal of spent fuel at this***

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			facility is not a feasible alternative.
8	Mr Kevin Thorpe Milnerton Residents Association	Mr Thorpe noted that every nuclear power station has a security access control, he wanted to know what the likelihood is of an attack or what would happen if someone attempted to steal high-level waste for terrorist purposes.	Mr Stott said that in South Africa all power stations, whether they are nuclear, coal or fossil are designated as National Key Points and therefore they fall under the National Key Points Act and the National Intelligence Agency and other security agency are responsible to ensure that they are protected against any form of terrorism. This is done in conjunction with Eskom.
9	Mr Mike Meyrick	Mr Meyrick asked what the legal life of an EIA is.	Mr Heydenrych said that there is no set timeframe in the legislation. The general rule is usually that it is valid for three to five years after authorisation has been issued. However, that does not mean that the applicant cannot apply for an extension. Ms Ball said that the DEA will state the period of validity in the Environmental Authorisation.
10	Mr John Iosiphakis	Mr Iosiphakis noted that the west coast water is colder than the east coast water. He wanted to know if this would cause any problems if the site is on the east coast as heated water would be discharged into the sea. He added that the cold water is more technical and appears to be more beneficial than the warmer	Mr Heydenrych replied that the change in ocean temperatures was studied by the marine specialist. He could not give details on the difference as to how it affects the East and West coast of South Africa. It was found that there would not be a significant impact on the temperature of the sea. Ms Ball said that the discharge rate was also important. At all three of the alternative sites, it was found that through effective engineering and design of the outward pipes, the potential negative impacts could be mitigated to a low significance. Mr Stott explained that the whole steam cycle depends on taking cold water and using it to cool the steam and

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		water. The steam needs to be cooled. Is there a difference in terms of operational efficiency whether you are using cooler water or warmer water?	then it gets discharged at a higher temperature level. This has been investigated to ascertain the impact and one of the thoughts was that the inlet from the water should be taken at lower depths, which would be colder. However the design specialist found that this would not cause a significant impact on the efficiency of the power station whether it is at Koeberg (**i.e. Duynefontein**) or on the East coast.
11	Mr Danie Schoeman	Mr Schoeman feels that Eskom should keep in mind the risk of the high-level waste, which is going to be stored on site when considering site choice. He wanted to know if Koeberg had been considered as a site as high-level waste is already stored on this site. It would be preferable to have a few sites that store this waste rather than many sites spread around the country.	Ms Ball replied that this was investigated in the waste assessment but the decision-making factors for the preferred site did not take this potential impact into account.
12	Mr Peter Becker Koeberg Alert Alliance	Mr Becker feels that all the studies are difficult to examine individually. He feels that the public are being asked to evaluate the proposal when large parts are being left out. He understands the mandate but he feels that this still does not make this valid. He feels that this should be presented to the public once all the aspects, including health and safety can be combined.	Ms Ball said that she sympathised with Mr Becker's frustrations and concerns. **The current legislation and government mandates provide for two separate processes. In this EIA many of the radiological aspects have been described, providing the public with sufficient information to understand the overlaps and the basis of the NNR process.**
13	Mr Kevin Thorpe Milnerton Residents Association	Mr Thorpe asked if issues and concerns raised at other meetings would be combined and would there be one EIA process.	Ms Ball said that from the beginning, as per the DEA's requirements and the EIA Regulations, Arcus GIBB have collated issues in an Issues and Response Report (IRR). These issues have been divided into the various phases of the study and the issues have also been classified according to the issue type. They have also denoted who raised the issue and from where it was raised. All of the issues have been placed in the various reports and have

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			been distributed throughout the study area, and throughout the country as it is a project of national importance. This IRR is also placed on the EIA websites. The minutes of the all the meetings will be posted on the websites, and minutes of this particular meeting will be sent to all attendees for verification.
		Mr Thorpe asked if the information collected for the Pebble Bed Study had been incorporated into this EIA.	Ms Ball replied that at the beginning of the Nuclear-1 EIA, the stakeholder database for Pebble Bed Modular Reactor Demonstration Plant Project EIA was filtered for use in the Nuclear-1 EIA. In terms of issues, they have been kept separate. The two projects have caused a bit of confusion in the public domain. There are many similarities in the EIA processes but there are many differences as well, especially site-specific differences. Social and Health issues are similar both being nuclear facilities.
14	Mr Peter Becker Koeberg Alert Alliance	Mr Becker said that there is one difference between the PBMR and Nuclear-1 and that is that for a maximum event the reading for PBMR is ~0.27 g and in this study the figure has changed to approximately ~0.3g.	Ms Ball said that she would look at this issue and thanked him for his observation. This relates to the Koeberg site which was in any case licenced for 0.36g through the introduction of seismic bearings below the Nuclear Island of Koeberg. **Post-meeting note: The figure of 0.30 has been confirmed as the correct figure.**
15	Mr John Iosiphakis	Mr Iosiphakis said that he had read in the paper that the people at St Francis Bay are objecting to the project. He asked for confirmation and information on this.	Ms Ball said that there is opposition to the project but there are also people who are pro the proposed project. However, it is not unique to St Francis Bay, there is opposition on all alternative sites and people who are for the project at all the sites.

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			Ms Ball said that issues raised are always important in any EIA.

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1	Mr Yandisa Mangaliso I&AP	Mr Mangaliso asked when the project would begin and when would it end.	Ms Ball replied that Eskom planned for construction to begin in 2011, but Arcus GIBB believes that it would most probably be 2013. The construction period would take approximately 8- 9 years. Mr Stott added that there are many different authorisations that have to be acquired by Eskom, apart from the environmental authorisation, the Government through the integrated resource planning process still have to decide whether they want to build any more nuclear power stations in South Africa. This is going to be clarified later this year. If the Government does give the go-ahead, Eskom will begin negotiations with various suppliers of nuclear power plants, and that could also take a few months. A nuclear license has to be obtained; this can only be done once Eskom has identified who is going to build the plants and which plant type is going to be used.
2	Mr Clarence Mentor Thusong Community Service Centre	Mr Mentor commented that when the original nuclear plant was built, many people had work and therefore this had a large impact on the local economy, not only the direct area but also the whole City of Cape Town. He is therefore hopeful that this project will have the same affect. His only problem he had with the last project, which was the gas power station in Ankerlig is that most of the contract workers were not from Cape Town. There were problems, not only with the employment of locals, but also with the execution of the training. For example, an external training provider.	Ms Ball replied that in terms of the potential economic impact, Arcus GIBB noted Mr Mentor's comments about the perceived impact that Koeberg Power Station and Ankerlig Open Cycle Gas Turbine (OCGT) Plant had on the local community. The economic specialist for this EIA had concluded that the Western Cape should benefit from the construction of a nuclear power station. Ms Ball then said that in terms of job creation, the preferred alternative is Thyspunt for Nuclear-1 which is located near a number of underprivileged communities such as the Sea Vista community. Those communities have also commented that local people must benefit from jobs. The social specialist has independently

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		He added that the environmentalist is against the building of coal power stations because it would emit green house gasses into the air. A nuclear power station does not do that, but nuclear has its own environmental problems such as the storage of the waste. He feels that a nuclear plant such as the proposed one would be beneficial to the economy and in comparison with coal would be beneficial to the environment. Mr Mentor said that there is insufficient power in South Africa so any power station would be beneficial. He asked that locals be considered for employment. Mr Mentor then added that the environmentalist were against the construction of the Pebble Bed Modular Reactor because of storage concerns. However, the government is now constructing coal-fired power stations and the environmentalists are also objecting to this, he cannot understand what their objectives are as the country needs power.	recommended that at least 25% of the employment opportunities during the construction phase be given to the local community. Mr Stott also commented that it would be Eskom's intention, if they are allowed to build the power station, there would be a requirement of the contractor to undertake localisation, as well as undertake training. Training would be for semi-skilled and skilled. As an example, Eskom is building a coal-fired power station at the moment in Lephalale. Around this site there are two training centres that are presently training more than 1 000 people. There are also training facilities in Gauteng and in Mpumalanga for the Kusile Power Station, so there is a total of more than 2 000 people being trained. The vast majority, approximately 80%, of unskilled labour comes from the Lephalale area. More of the semi-skilled and skilled are from the Limpopo Province and from the wider areas within South Africa. Contracts, where possible, are also given to local business and small- and medium-size enterprises. Mr Heydenrych agreed with Mr Mentor's assessment of nuclear versus coal in terms of greenhouse gasses, obviously this is a huge concern in terms of global warming. This is one of the reasons that Eskom is intending to build up to 20 000 MW of nuclear capacity by 2025. There is also a number of other impacts associated with coal power generation, such as water use, sulphur dioxide (SO^2) that is released into the atmosphere etc. The life-cycle impacts of the entire chain of coal-fired generation must be considered.

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			According to peer review of the national studies that Arcus GIBB have referenced, coal-fired generation is a much less desirable technology from an environmental perspective compared with nuclear.
3	Mrs Janda MacDonald Koeberg Alert Alliance	Ms MacDonald asked if it is true that radioactive material from nuclear power stations and which is harmful to humans is sent out into the air and into the water. She also asked if it is true that these last many years and accumulate in the food and the environment. She then said that Mr Heydenrych has stated that Strontium has never been found at Koeberg. She has studies which show that Strontium, which is one of the radioactive isotopes which lasts a life time, has been found in milk in the area. Ms MacDonald said that unfortunately there were no studies on Strontium but she does have reports, which were done in 2002, which show the milk figures particularly. She feels that one of the most important issues that should be assessed is if the food in the area surrounding Koeberg is contaminated. There is a table that has been produced by the NNR, which shows that in 2001, 4.49E+10 (which is 49 billion becquerels) of Cesium 137 were emitted into the air. The table which is in the EIA Report shows a quantity of 40,000 becquerels, which is a big mistake. She questioned if this huge error was	Mr Heydenrych then explained that there are amounts that are released into the atmosphere and was modelled by the Air Quality Specialist. The predicted maximum cumulative annual inhalation and external radiation dose (µSv) for Duynefontein, Bantamsklip and Thyspunt using 30 year equilibrium for deposition is illustrated in the Air Quality Impact Assessment. Mr heydenrych explained, using the figure in the Air Quality Report, that the radiation levels are represented by the roughly concentric rings around the proposed power station and these are expressed as microSieverts. There is an area around the power station, which would have the highest level, which is 0.5 microSieverts per annum and then up to the area further away would have 0.2 microSieverts per annum. If this is compared with legislated limits, which are based on international standards and which are already conservative, those limits are thousands of microSieverts and 250 microSieverts. At the highest level it is 4.5% and approximately 1% of the allowed dose limit. Ms Ball asked Ms McDonald to please submit any studies she has, that have been peer reviewed, in terms of Strontium. Ms Ball said that there was an agricultural specialist on the team and they have different conclusions to that

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		explained to the community and if they know that they were exposed to massive amounts of radiation. Ms McDonald contested the graph that was shown to explain emissions. She said that it is clear that this graph depicts an off-shore wind. In the EIA Report it states, "Duynefontein is characterised by on-shore flow, upwards, vertical motion and advection to the interior". The diagram does not depict this scenario. She also questioned the data which was used. She has examined the ICRR Report which was published in April 2010 (produced by International Committee for Radiation Risk) in Brussels and they show that even low levels of exposure to ionising radiation causes cancer.	stated by Ms MacDonald. Ms Ball said that she valued Ms McDonald's opinion and the opinion of her organisation. However, there is also the opinion of the independent specialist study. She suggested that Ms McDonald put the issue of becquerels in writing. Mr Stott responded by saying that Ms McDonald was partially correct in some of her statements but totally incorrect in other statements. Strontium has been found in milk but it was found in milk before the Koeberg Nuclear Power Station was ever built. This is a result of the testing program in the atmosphere that took place in the 1950s and 1960s. You will also find Cesium 137 in leafy vegetables. He said Ms McDonald had previously commented that radioactive material is getting into the food chain, this is correct, but they are at levels that have absolutely no impact on human health. Mr Stott said that humans would have to stop eating if they did not want to consume any radiation whatsoever. Everything on the planet is radioactive and has been radioactive for millions of years. Life has evolved from much higher levels of radiation. There are not massive amounts of radiation released from the Koeberg Nuclear Power Station. Studies are undertaken on a regular basis and samples are taken, the results are all provided to the NNR on a regular basis. These results are also peer-reviewed by the International Atomic Energy Agency and the methodology that is used to determine what is the

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			impact on humans. It is well below the figure that would affect humans. Ms Ball explained that there is a separate plant and site safety process, which has detailed specialist studies. Mr Stott confirmed that the process would be run by the NNR and studies have to prove that the plant would be safe. Eskom will not be able to construct an unsafe plant.
4	Mr Muna Lakhani Earthlife Africa	Mr Lakhani asked how many of the audience either worked for Eskom, were paid consultants for the process. He asked for a show of hands. He said he was addressing the people who were not paid by Eskom. He explained that he was one of the environmentalists that had stopped the pebble bed reactor. He commented that there is no electricity crisis in South Africa. He said that a report had been illegally released that showed that BHP Billiton, the owners of the smelters in Mozambique and KwaZulu-Natal, were getting electricity at 12c. Pre-paid meter users paid between 60 and 80c. The general public have therefore been subsidising the rich people, this comes from the apartheid days as they confirmed that the contract was signed before Nelson Mandela was President of South Africa. If industry would pay the correct price, they would change their system very quickly to save thousands of megawatts.	Ms Ball asked Mr Lakhani for a copy of the reports he has concerning alternatives. Ms Ball said that the Draft EIR has been placed in public venues and there is also a full report in the Civic Centre Library in Atlantis. It is also in a number of other venues all around Cape Town. Earthlife Africa has asked for a copy as have other key stakeholders who have access to computers. In fact the particular request came via email so we assume they do have a computer and access to the Internet. The report is available on two websites (www.gibb.co.za and www.eskom.co.za). Ms Ball also said that alternatives were investigated in the report, she therefore contests Mr Lakhani's allegations that alternatives were not investigated in the EIA. Ms Ball explained that there were a number of specialists, Air Quality Specialists, who have examined these aspects. The Marine Specialist and the Agricultural Specialist have all examined the impacts. Ms Ball has to

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		1. The union that is NUMSA which is working at the aluminium smelters in KwaZulu-Natal are on record as saying that they are prepared to loose their jobs to shut the smelter down, to solve this so-called crisis and to release 2,000 MW back into the grid. Therefore, there is no crisis, there is cheap electricity for the rich. 2. The person they quoted was Mr Sievert – 1,000 sieverts, 4,000 sieverts, he said he had never seen a sievert in his life. The person who raised the radiation measure is RM Sievert and he says, in writing, that there is no such thing as a safe dose of radiation. 3. The greenhouse gasses that people are concerned about, he agreed that the world is in trouble. The public is not just fighting coal and fighting nuclear, they are fighting for what is just. Give the people the electricity that they need and give people jobs. For example the nuclear power station will create about ½ a job for every megawatt that is generated. Wind power will generate 4-7 jobs for every megawatt that is generated. It goes as high as 35 jobs for solar power. No-one discusses this aspect in this EIA, by law they are supposed to investigate and compare alternative. 4. R16b has been wasted on the pebble bed and not one was constructed. More than a million households in South Africa could have had free	use this information and she has never denied that the radioactive elements are emitted from a nuclear power station but in extremely low levels. There is however, a separate site and plant safety process. Mr Stott said that a secret dossier had been mentioned that the Democratic Alliance (DA) had published (referred to in recent newspaper articles). It was not a secret dossier, even though the DA had called it a secret dossier. It is a normal monthly internal business report that is issued every month. The DA managed to get a copy of it and they call it a secret dossier. Eskom will formally respond to the DA on this. Mr Stott added that statements had been made concerning jobs. Eskom has different figures to the ones given by Mr Lakhani. For example for nuclear Eskom's figures show for both construction and operation between 4 and 10 jobs are created for every megawatt generated. He did not have exact details available with him at the meeting but this data is available. Mr Stott said that there are a few Generation 3 – 4,000 MW power stations in operation. The advanced boiling water reactor which is Generation 3 reactor is in operation in Japan. There are a number of PWRs in design, but are not yet in operation they are busy being constructed in China. There is the French EPR also not yet in operation but in construction is Finland, France and in China. There is also the Russian EPR 1200 which is also recognised as Generation 3 which is also in construction.

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		hot water every day for 30 years if this money had been spent more wisely. People do not mention this because people are paid to do studies. 5. There is a host of information that is not in this report. They have selected very carefully, what to put into the report. There is no solution for the waste. When they made nuclear power in 1940s, they promised a solution to the waste by the end of the power station's life. They do not have a solution. 6. The greenhouse gases from the wind is lower, the strontium and caesium that has been mentioned is measured from Koeberg. These are Koeberg's reports. The point is that one more bit of Cesium, one more bit of Strontium, one more bit of iodine, one drop of nuclear is one drop too much because it is imposed on them. They did not say they want to get sick, they did not say they want their babies to be deformed. Additional radiation is the problem, not radiation itself. People are selecting the truth. Colonialism was bad, apartheid was worse, both are wrong. 7. He said that the public have 90 days to review a report that took months to compose. This was done full time whereas the public have to try and review this in their spare time. The	Mr Stott said that Mr Lakhani's question about funding was a relevant and good question. The Government is working together with Eskom on funding models as there is different ways that this can be done. They are also working on the Integrated Resource Plan which is the plan of how much electricity they estimate South Africa will need for the next 20 years and what technology could be used. As part of those studies, they have to investigate the cost of electricity from the different technologies and how they make up the mix. It is not just the cost of electricity it is what resources are available to South Africa and what the impact of for example climate change of those different technologies would be. Mr Stott said that he hopes that those studies will be made public in June or July 2010. There is supposed to be stakeholder consultation on these studies as well. Towards the end of the year, a plan will be approved. Once Eskom or any independent power producer wants to build an electricity generating power station they also have to obtain an electricity generation license from the NERSA. NERSA also looks at the business case for the particular power station and they investigate how much the electricity will cost from that particular power station. They then make the determination of whether or not the license will be issued. There are many checks and balances in place before any decision or authorisation is granted to build a power station. Part of this involves examining the economic impact on South Africa.

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		consultants had refused to give them hard copies of the reports. Therefore anyone without a computer does not have access to the information unless you go to the library. If you do not have R12,000 to print out a hard copy, you may not take it home to study. If you cannot understand English you cannot understand the report. If you do not have taxi money to attend the meeting, you cannot access the information. The process is therefore undemocratic. 8. The report states that there is no impact from radiation. They disagree. The statements about jobs is also misleading. They think that a French Company, Areva, will construct the power station, or maybe Westinghouse from the USA, it will not be a South African Company. If wind power is used South Africans can build 70% of the plant, with skills that unemployed people in the country have. We have people with manufacturing skills that are unemployed. In less than 5 years the technology can be transferred from overseas to South Africa so that eventually the entire plant can be built locally. 9. They also say that it is impossible to generate 4,000 MW without coal or nuclear. That is not true. There is no scientific evidence in their document that says this. They also state that it will cost R170b for the nuclear power station.	

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		He wanted to know how many of these Generation 3 - 4,000 MW PWR exist in the world today. He said he knows the answer and there is not one. They are busy constructing one in Finland, presently it is half built and is 50% over budget. They are playing with our lives. 10. There is no crisis, they need jobs, if they thought paying 25% extra per year for three years was because of Medupi and Kusile the coal-fired power stations, wait until people have to pay for nuclear. Not anywhere in the world have reactors been constructed on budget not have they been completed on time. Every place in the world that has nuclear power charges more for electricity. He said that they need to be very clear exactly what they are fighting. 11. 36 companies use 40% of the energy in South Africa. The poorest of the people use 1% of energy, one business should rather be shut down and make sure the free basic electricity for all people is doubled. He went on to say that the people must be sure about what they are fighting. Electricity prices now are nothing compared to what will happen if there is nuclear. Local communities will never own the means of production if the centralised giant mega-projects to go ahead. They will continue to pay by	

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		their health and their jobs, all the things that people want for each other. It is imposed on the people. He said he is sick and tired of being told by others what to do and how to think. He said he might be black and he might be poor but he is not stupid. He said that his organisation is not the type that are only concerned about the birds and the bees, they are concerned about justice. They want the projects that give the highest number of jobs for South Africans. 25% of the jobs - does this mean 25% of the least paid jobs, to dig holes or 25% of the jobs that pay R500 per hour. This information is never explained to the public. The nuclear scientists, the physicists, the designers will come from Areva in France but the welders will come from South Africa. If this was going to be good for the people, why do they not give it to us. Show us wind power is built by the Danes and will cost x amount to generate 4,000 MW, Solar power, nuclear power, coal power by the different countries, by the different companies, this will be the staff complement for A grade, B grade at what salary per month. Why are details not in the report? It is because the benefit for the people is minimal. To summarise: ❑ How many Generation 3 - 4,000 MW PWR units are there in the world? ❑ Is the specialist study saying that there are no radiation such as Cesium, Strontium impacts additional to what the planet has today.	

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		❑ When the macro-economic study was examined, did they investigate if the country can afford this plant and where will the money be obtained? ❑ What will it do to electricity prices? ❑ What will it do to taxes? These questions should be addressed in the Macro-economic study. The opinion of the specialists is that renewable energy will not deliver this power. He said that he has also studied and his numbers show something different. It is their opinion that nuclear is not good for health and it is not good for the economy and it is certainly not good for employment.	
5	Mr Clarence Mentor Thusong Community Service Centre	Through the Facilitator, Mr Mentor requested Mr Lakhani to give them the information that he spoke about regarding renewable energy, which indicates that renewable energy has the capacity to deliver the same amount of power.	Mr Lakhani replied that there were two studies, both of them undertaken by Eskom, one is on solar and one is on wind power. Roseanne Diab from Durban undertook one of the wind atlases in South Africa. She made a mistake as they measured the wind at 25 metres above ground and a few weather stations at 10 metres. In this study they concluded that there can be 5 000 MW generated by wind. 1. The wind is supposed to be measured at 50 or 60 metres above the ground. 2. They also never investigated off shore wind. The confirmed studies, peer reviewed by scientists, have confirmed that more than double the energy can be

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			produced by wind. People who get paid by the industry say that there is a lot of land required. The truth is 98 – 99% of the land could still be used as a farm, etc. No-one is talking about reducing the wastage of Anglo American, De Beers, BHP Billiton, the organisations who are wasting energy. They are in this country for cheap electricity. He said he has a map available on how much land is needed to replace Eskom's total generation capacity, this is 2% of the deserts if one were to take the Karoo and Kalahari, using today's technology. There are many technologies such as Otech Ocean Current Generation, there is Tidal Race, there is Tidal Wave, wave power, etc. If there are many small plants and if the Koeberg Nuclear Power Station falls down people will not suffer. He is suggesting democratic alternatives to power generation and not centralised.
7	Mrs Janda MacDonald Koeberg Alert Alliance	Ms McDonald commented that the current CEO of Eskom had said under oath and that was on 22 January 2010, he told the NNR that in four years South Africa could have 7,000 MW of renewable energy capacity including 2,000 MW of solar base load at a price of R200b. Ms Bowler requested Eskom to respond to the quote that Ms McDonald referred to that the CEO had made.	Mr Stott and Ms Herbst indicated that they were not aware of this exact statement. Eskom believes that wind and solar are part of the energy mix. They do not say it is nuclear and nothing else, Eskom's stance is to use all power generation facilities available. **Post-meeting note: Ms Mc Donald is not correct the CEO did not make this statement a transcript of his speech will be included on the Eskom website and it appended to the minutes.**
8	Mr Muna Lakhani EarthLife Africa	Mr Lakhani said that the CEO of Eskom had also suggested what could be done for R100b.	

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		There is a comprehensive study with facts and figures and he is going to be outside parliament on Friday and they are going to hand over some of this research to Minister Pravin Gordan's office as he is overseas. There will be a meeting held with his staff to show what the experience of the world is around people spending money on nuclear. One of the well-known analysts says there is only two answers for the cost of nuclear, one is I do not know, the other one is I will tell you after I have built it.	
9	Mr Mpumi Mhlalisi CANE	Mr Mhlalisi said that three different kinds of waste have been mentioned, he presumes that people will be working with this waste, which will mean that they will be exposed to unnatural radiation. Is there a safe dose of this radiation and if there is how much is this level. He also asked how Eskom determines what a safe does level is. Mr Mhlalisi asked how the high-level waste is disposed. The future strategy and the current strategy.	Mr Stott explained that this falls under the NNR safety standards. They are published in the Gazette, in 2006 there was a regulation published by the Minister of Energy on safety standards and regulated practices for a nuclear power station. The safe limits for the public were published as being 1 milliSieverts (mSv) per annum. 20 milliSieverts per annum averaged over 5 years is deemed to be safe for a radiation worker with a maximum value of 50 milliSieverts in any one year. These are also international levels, and these levels do not cause any risk to humans. Eskom is also obliged to apply what is called a LARA – (As Low as Reasonably Achievable). The impacts must always be kept as low as possible. Ms Ball replied that a waste expert had investigated the alternatives associated with waste disposal, including low, intermediate and high-level radioactive waste. Detailed information is contained in the report. There is however no licensed waste disposal site for high-level

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			waste in the country or in the world. There is only a licensed waste site for military waste in the United States of America.. The high-level waste is currently kept at Koeberg Nuclear Power Station and that will also be the case with the new nuclear power stations. Ms Ball said that should a new nuclear plant be constructed, the high-level waste would be stored on-site.
		Mr Mhlalisi wanted to know why the comparison of alternatives to nuclear energy such as the no-go and coal were not thoroughly investigated.	Ms Ball replied that according to peer-reviewed studies Arcus GIBB is of the opinion that the only base load alternative to nuclear in South Africa at the moment is a coal-fired power station. There was a comparison done to coal-fired power station and also the no-go alternative, i.e. not building any nuclear power station.
		Mr Lakhani highlighted the words used by the Consultant, which are, "it is our opinion that the only alternative is no-go or coal". It is therefore not a scientific fact, it is the Consultants' opinion. He requested clarity on what informs scientifically the Consultants opinion that this cannot be done. The science Mr Lakhani knows says that it is being done world-wide. China has 24 000 MW of wind, South Africa are talking about 4 000 MW. Does this mean that it is one person's opinion whether South Africa has nuclear, coal or no-go?	
12	Mr Louis de Villiers Centre for Environmental Justice	Mr de Villiers wanted to add to this as it concerns the issue of alternatives, which seems to have been glossed over. The consultants are saying that the	Ms Ball explained that every EIA starts with a project proposal from an Applicant. The consultants examine a range of alternatives to the proposal. Their own

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		only alternative is nuclear, so then if only nuclear is being investigated, only different alternatives within nuclear will be investigated. The position at the moment is that there is 40,000 MW of power being generated of which 4% comes from Koeberg and the rest comes from coal. Therefore the entire production at the moment is base load and none of the alternatives are being investigated. The facilitator asked for clarification from the environmental consultants and from Eskom regarding when the environmental consultants are given their brief, where do they actually start with their research in terms of alternatives. How much of that is actually at a policy level and how much of the terms of reference given to them actually informs what they have to do as part of their research.	knowledge and peer-reviewed knowledge are used, as well as information from the applicant, information from interested and affected parties. Ms Ball said she wanted to reiterate that this project does not replace any of the other Demand Side Management initiatives or renewable projects it is one of the many projects and technologies that contribute to the mix.
13	Mr Muna Lakhani EarthLife Africa	Mr Lakhani as a point of clarity said that in the Draft EIA Report on page 4, it says that alternatives considered during the EIA include the following: then there is a list. The second point is forms of power generation, he therefore assumes that it means more than one. The decision was made somewhere along the line to not speak to anything else other than nuclear and coal. They were told that it is the opinion of the consultants that the options were no-go, coal or nuclear. He stated that the issue of power generation in South Africa is a much bigger than five people's	Ms Ball said that apart from the Draft EIR, the alternatives were discussed in depth in the Scoping Report. Ms Herbst responded by saying that when an EIA is undertaken it is on a project basis as prescribed in the regulations, the IRP determines what technology South Africa should investigate and which of these Eskom will consider. EIAs are undertaken for a specific technology. The alternatives are discussed in all EIAs. The scope that was given in the terms of reference for this EIA was for 4 000 MW of nuclear.

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		opinion.	For the EIA on coal this was given to a different consultant, there is coal in the Waterberg, and presently there is an EIA for 10 000 MW of coal in that area. For a wind power generation, Eskom has received authorisation for a wind farm in Vredendal that was for 100 MW of wind. An EIA has also been undertaken for a solar thermal plant in Upington. The EIA process therefore is specifically aimed at a site specific, region specific, technology specific process to be analysed. There has recently been an appeal by WWF on the issue of considering alternatives such as wind in an EIA for coal. The appeal has not been upheld by the DEA.
14	Ms K Bowler The Facilitator	Ms Bowler asked Ms Herbst what steps the stakeholders should take to challenge the issue of power generation alternatives in South Africa.	Ms Herbst relied that any challenges have to be addressed to the Integrated Resource Planning Process and it has recently been advertised that this process will be open to the public and they may engage in the process.
15	Ms Janda McDonald Koeberg Alert Alliance	Ms McDonald added that when an EIA is undertaken for example for a bridge, if someone comes up with a solution such as building a tunnel instead of a bridge, or a totally different technology with less amounts of money but would result in a better construction, that EIA should automatically be scrapped and it is with construction projects. Ms McDonald asked what would happen if there were alternatives found that cost less money and	Ms Herbst explained that sites had been identified for nuclear and Eskom had also identified sites for coal and the coal sites are in the Waterberg where the coal is, the nuclear sites are on the coast due to cooling requirements.

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		were more effective and less hazardous, those solutions should scrap an EIA process for a nuclear power plant.	
16	Mr Clarence Mentor Thusong Community Service Centre	Mr Mentor said that the affected and effected parties have the right to speak at all EIA meetings. As communities who are living within the 16 km zone, they have the right to say whatever they are concerned about. Issues such as health, unemployment, etc. Ms McDonald had used the word massive but she was referring to the massive mistake in the NNR report. On the basis of that he explained that they are fed information every day, the whole world is fed too much information, but these crucial mistakes can be the death of the project or the death of an entire community. He said that the community uses the NNR report as a reliable source. He had seen a slide of Duynefontein and he was concerned about this. He now understands that there are three sites and the preferred site is Thyspunt. He notices that there is an Eskom site already and it seems that a nuclear power plant is going to be constructed, and this process will not stop it. South Africans are reasonable people and they listen to reasonable information. The environmentalist (referring to Mr Lakhani) was very reasonable and he had given them some factual information, as did Eskom. His fear is that the peer-review that the Consultant use as a reference, were those peer reviewed documents written by physicists and did they give the explanation of	Ms Ball responded that Arcus GIBB and ACER (Africa) who have undertaken the public consultation process, believe that the community needs to be informed about meetings and they need to be heard. Unfortunately there was another meting (with the Mayor to discuss housing) in Atlantis and this might account for the low numbers of the community present at the meeting. This meeting had been advertised in all the local newspapers and all registered interested and affected parties received invitations. Notification was also given to various Government and Municipal structures. Ms Ball explained that all 24 specialists were experts in their particular field. For example for the animals there was an animal specialist, for the air quality there was an air quality expert, etc. The peer reviewers were also other independent experts in their own fields. She further explained that they have identified the preferred site as Thyspunt near Port Elizabeth. Duynefontein is owned 100% by Eskom and may be considered for Nuclear-2 or Nuclear-3 in the future. Eskom own 50% of the Bantamsklip site, and Eskom own 95% of the Thyspunt site. Ms de Villiers said that if there is a preferred site for 4 000 MW this has to be strictly adhered to. If Eskom go 1 MW over this there will have to be a complete new EIA undertaken.

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		renewables from a physicist point of view or were they written by biologists and by geologists who gave the other side of the story. He has responsibilities to his family and to his community. This project is about South Africa as a whole. South Africa is ranked 88 on the Competitive Advantage Index of the Global Economic Forum and we should be much higher as there are countries such as Kuwait, which is small but they are much higher than South Africa.	
17	Ms Karin Bowler Facilitator	Ms Bowler asked Ms Shinga if any additional efforts were made to inform the community other than the newspaper advertisements.	Mr Mentor said that an effort had been made to inform the community.
18	Mr Anele Timothy Gqabuza	Mr Gqabuza said that he had worked on Ankerlig as well as the Koeberg Nuclear Power Station. He worked during construction and when they were finished even though they were under contract, they had to leave the job. He asked if there are any opportunities for permanent employment within Eskom especially as they have some experience as welders and boilermakers on the construction sites.	Mr Stott asked Mr Gqabuza to see him after the meeting and he will speak to him.
19	Mr Maguire Climate Justice Now	Mr Maguire noted that as a point of clarity regarding the investigation of alternatives, this is very definitely part of any EIA process and it is not up for debate. He also said that it appears to him that the Wind Farm Project in Darling cost R75m and generated 5.2 MW of power. The proposed nuclear power station will cost R170b and will generate 4,000 MW.	Ms Ball commented that the cost comparisons are done for not only the construction phase, but for the life-cycle of the plant. Ms Ball said that the needs were 40 000 MW by 2025 and 50 000 MW by 2028, that is far more than 4 000 MW. Ms Herbst responded by saying that this is excellent

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		This equates to 769 times larger than the Darling Power Supply plant. However, 769 x R75m is only R58b so R58b plays R170b for the same amount of power. He added that they constructed the Darling plant in two years and Eskom are proposing to take 10 years for the construction of the nuclear power plant. We also said that South Africa has a massive base load of power generation in this country and in fact SA are the 7th or 8th largest coal producer in the world. This is certainly not something that government will allow to go by the wayside. It certainly no reason to say that SA requires coal or nuclear strictly for base load power generation. What is needed is for this to be supplemented with other alternatives even if they are three times less effective, if the financial incentive is still there, it can be done immediately. He clarified that he was referring to the inception of the construction phase of a non-nuclear project to the beginning of the power generation phase took two years. A large part of what it is that is being referred to is the necessity behind building a power station that is going to have hazardous material of a half life of 20,000 years is the fact that we need to have these solutions now. If the reason why nuclear is being considered is because there are immediate needs that need to be met, surely the needs would	information to put into the Integrated Resource Plan. She also said that load factors have to be taken into account when calculating the cents per megawatt cost is examined for generating electricity you will find that wind does cost more than coal due to the low load factors. Ms Herbst used the example of the Klipheuwel Wind Farm, it is 50 m high, an appropriate height to optimise on wind, the best performance obtained in any year was less than 20% load factor. Whereas a coal-fired plant or nuclear power plant actually generates between 70 and 90%. Therefore for 24 hours per day 7 days per week there is power being generated from coal and nuclear plants which costs x amount and for a wind facility it will only generate about 20% of the time because that is the amount of the time that wind actually blows. **Post-meeting note: The refit tariff for wind is R 1.20 per Kwh compared with the current revenue of Eskom's current fleet at 31.9c/Kwh. There is a difference in the cost of electricity generated from coal, nuclear and renewable technologies; this is evident in the cost structures in many countries.**

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		be better met by technology which costs 1/3 of the price and is able to produce the same amount of electricity in 1/5 of the time. Mr Maguire said that Ms Ball was missing the point. If R58b can produce 4,000 MW in wind power versus R170b in nuclear in two years we could produce all of the power required in a much less time frame from wind power than we could from nuclear power. Mr Maguire stated that they produce wind turbines in South Africa, up to 50 m high. Nuclear Power Plants are not produced in South Africa. He stated that he has studied environmental impact assessment and he is fully aware of the fact that part of an EIA process is that you do have to bear societal costs, in fact you have to do a cost benefit analysis as part of an EIA process. He does not understand how this issue can be avoided.	The facilitator said that these issues are understood and are critical but these arguments have to be held at the IRP level, this was explained by Ms Herbst. Policy decisions are made by the government which are fed through to Eskom that is the basis on which they actually decide which project they have to do, be it nuclear, wind, solar or coal, that is when the EIA consultant is engaged to deal with these issues. The application to the DEA, all the terms of reference in terms of scoping and in terms of the EIA process have been accepted by DEA. If Mr Maguire is objecting to this process, Ms Bowler suggested that he take this up with the DEA.
20	Mr Louis de Villiers Centre for Environmental Justice	Mr de Villiers said that he also had issues with the alternatives, the point has been made that the alternatives have to be dealt with and cannot be ignored. Internationally, the capacity of nuclear is decreasing versus the capacity of other types of electricity. The fact that the IRP is now hopefully about to begin is a positive as currently decisions are taken before studies are undertaken.	Mr Stott said that Government does have a policy, the Nuclear Energy Policy that says that there will be a fleet of power stations. That policy was issued in 2006. Eskom previously undertook the Integrated Strategic Energy Planning and Eskom's plans were that they would need to go nuclear. The climate change policy of DEA has a long-term mitigation strategy is to use nuclear. In preparation for this, Eskom decided to continue with the EIA that had already been started.

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No	**Name**	**Comment**	**Response**
21	Mr Peter Becker Koeberg Alert Alliance	Mr Becker said he would like to correct two things from Eskom. They had made a statement that the cost of nuclear had been calculated as less than wind. Until you have calculated the cost of disposing of high-level waste, that is surely a disingenuous statement. There are no detailed plans for high-level waste therefore the cost is unknown so they cannot be compared. He also said that nuclear power is between 70 and 90% but Koeberg both independently and combined are less than 70%. He also mentioned that in the process of these last four meetings he has asked a few questions and he had been promised a response, to date he has not had any responses to his queries. He reminded the consultants that his questions had been: ❑ Mr Stott had said the South Africa do not subscribe to the Vienna Convention, his question had then been what is the value of the insurance if it is not set by this convention. ❑ He had also dismissed the consultant's seismology section in the presentation as entirely unscientific. ❑ He had also asked that DEA had instructed Arcus GIBB in the acceptance of the final Scoping Report, to examine in detail in the transport issues. His question had been has the possible impact of a fire on a vehicle	Mr Stott said that all costs are included, Eskom has included the decommissioning and the spent fuel management costs in the cost for the power station. Every month the Koeberg Nuclear Power Station has put aside funds for this. This is shown in the annual Eskom Financial Report. The funds are built up over the operating life of a power station so that those finances are all available for the decommissioning and for the spent fuel management. The plan has been audited by an international company -in fact they suggested that the amount of provision that is made monthly be adjusted because of additional facts that need to be taken into account. Mr Stott corrected Mr Becker, he said they were talking about the average since the Koeberg Nuclear Power Station has been in operation and this figure was between 65 and 67% on average. However, in the early days of the operation of the Koeberg Nuclear Power Station, it was deliberately kept at low power levels by the system. However, in the last 4 or 5 years the Koeberg Nuclear Power Station has been well above 70% on average. Mr Stott stated that South Africa has not signed the Vienna Convention [on Civil Liability for Nuclear Damage]. The Act of Parliament in South Africa [the NNR Act section 29] requires Eskom to make financial provision. Regulations that are issued by the Minister of Energy stipulate how much financial provision must be made [Regulation promulgated in Government Notice 581 dated 7 May 2004. Section 29 also allows for the

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		carrying radioactive material been investigated.	Minister to require additional financial provision beyond what is stipulated by the Regulation]. The NNR Act [section 33] also makes provision for the Minister to go back to Parliament to appropriate more funds if this is required. Mr Stott said that he does not know the exact figure that is stipulated in the Regulation, but he would revert to Mr Becker. The figure regarding the insurance will be added to the minutes as a written response. **Post-meeting note: The current figure stipulated in GN 581 dated 7 May 2004 is R2.4 billion. Eskom makes the financial provision through insurance (that is obtained from the international nuclear insurance pools) and which is in dollar denomination resulting in a financial provision in excess of R3 billion. Every year Eskom has to provide proof that the financial provision (insurance) has been obtained.** Regarding the fire issue, she had explained to Mr Becker that this was a safety issue, which would be part of the NNR process. She said that regarding the seismology report, this would be a written response in the minutes. **Post-meeting note: The Seismic Risk Assessment has been compiled by the Council for Geoscience which is a recognised scientific research body.**

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22	Mr Mike Meyrick	Mr Meyrick suggested that steam turbines be placed at the gas turbine place as a source of alternative. It would put the efficiency up from about 17% to 27%. He added that if Eskom is closing down steam power generating plants, it is usually the boiler that takes the racket and the actual generating equipment is usually in good condition and should be able to be re-used.	Ms de Villiers responded that he was referring to a combined cycle gas turbine. Eskom had completed studies for the conversion of some of the OCGT at Ankerlig to be converted. The cost of diesel as a fuel was extremely expensive. Investigations were initiated establish a supply of natural gas. Ms de Villiers explained that it was not the equipment but the cost of the fuel that was expensive. To fire up a turbine for an hour Eskom has to burn 20 000 litres of diesel, this is for one unit.
23	Mr Muna Lakhani EarthLife Africa	Mr Lakhani said that he had not seen a number attached to the cost of decommissioning, nor had he seen a figure for life-cycle. He wanted confirmation that the life-cycle analysis does talk about life-cycle and not factory gate to factory gate. If there is a fund towards decommissioning he feels that the figure is very low compared to what it is costing currently to decommission power stations elsewhere.	Ms Ball confirmed that the cost of decommissioning was used in the economic modelling. She indicated that the figure, would be provided in the minutes. **Post-meeting note: Comment received from Mr. William Mullins (Economic Specialist): As specialists we were only rating the three sites. To our mind the decommissioning would be the same except for the different transport distances of nuclear waste material to the storage site in the Northern Cape.**
24	Mr Clarence Mentor Thusong Community Service Centre	Mr Mentor asked what is the life-cycle of the Koeberg nuclear power plant and how old is this nuclear plant and when will it be decommissioned.	Mr Stott explained that the Koeberg Nuclear Power Station was designed for 40 years. It started in 1984 so it should end in 2025 but throughout the world companies do look at life extension and if it is warranted there will be a life extension. This will be done on the coal-fired power stations as well - as long as it is safe and is

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		Mr Mentor said that currently this community has an electricity account of R70,000 which has not been paid. The problem is that R16b was spent on a plant that never materialised, the PBMR. How many houses could have been built, how many service centres that service the community could have been kept in good condition. So much money was spent, nothing materialised, it was not only because of pressure from the environmentalists it was because basically money was wasted on wages for the educated people that brought the community absolutely nothing. So much money is spent on these projects, why not spend money on social issues. The country is in a mess because people are not working, when people do not work they resort to crime. Spend the money where it counts.	economically viable. Ms Ball added that for Nuclear-1 there is a life-cycle of 60 years. Mr Stott said the he could not speak on behalf of Government, nor could he speak on behalf of the PBMR Company as they are an independent company, which was funded by Government. He said that there were patents that were registered, it is intellectual property and they are still working on the PBMR with the American New Generation Nuclear Plant. Eskom noted Mr Mentor's points regarding the spending of money in the country.
25	Mr Mpumi Mhlalisi CANE	Mr Mhlalisi stated that the mere fact that there are few people from Atlantis reflect that proper consultation has not happened. He does not believe that people at the meeting reflect the views of Atlantis community at large. It is important that information that is given to the public is not biased so that the people can be able to raise their views.	**Post-meeting note: All Interested and Affected Parties registered on the database, including the Atlantis community and its representatives were notified and invited to meetings via personalised letters. In addition, all meetings were advertised in various publications. Publications used included the following, *Cape Times, Die Burger, Table Talk, Tygerburger Milnerton, Tygerburger Tableview, Easi Ads* and *Sunday Times*.** **In order to remind Atlantis residents of the public meeting, reminders were done using a loud hailer one day before the meeting and on the day of the meeting.**

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26	Mr Muna Lakhani EarthLife Africa	Mr Lakhani agreed with Mr Mhlalisi and said that having only 7 or 8 people from the Atlantis community when Duynefontein site as a potential site is in close proximity to Atlantis, is a failure. The manner in which the process has been designed, was not to facilitate broad based engagement. If it were, there would be more than one meeting for Atlantis community as people work shifts, some have babies and some have to attend to other matters. To be talking about building a non-existing design for a non-existent process for a non-existent potential with a non-existent price is quite frankly the most ridiculous thing he has ever heard. He personally believes that this entire process in its entirety is illegal.	Comments noted.
27	Mr Clarence Mentor Thusong Community Service Centre	Mr Mentor said that they do have a website which is www.atlantis.za.net if Ms Shinga sends him any information about the next meeting he undertook to advertise it on the site free of charge.	Ms Ball suggested that he place a link on this site to the EIA websites.
28	Mr Peter Becker Koeberg Alert Alliance	Mr Becker commented that a few years ago in the accounting and auditing field there was a realisation that things were corrupt. Arthur Anderson was both the auditor and the accountant for Enron. The accounting industry have since realised that there was a problem and what they have done is place limitations in place. 1. He understands that Arcus GIBB have done a lot of work, apart from the EIAs for Eskom on the auditing basis, he then asked, if Ms Ball in her personal capacity, does she think that the	Ms Ball said that the question concerning the environmental industry was debatable. There is a process .of certification of professionals and hopefull this has had some positive impact on the preofessionalism of

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		environmental assessment industry has put those same checks and balances in place that are necessary or not. 2. Is Ms Ball allowed to say approximately what percentage of the revenue Ms Ball on behalf of Arcus GIBB generates comes from Eskom.	the industry. Ms Ball said that the question about the percentage of income from Eskom has been asked before during the EIA process and it is currently 0.8% of the total Arcus GIBB annual turnover, a small percentage of the overall turnover. Arcus GIBB's Environmental Sector operates in Nigeria and other African countries and not just South Africa.
29	Mr Clarence Mentor Thusong Community Service Centre	Mr Mentor asked if Eskom were endorsing the King III Report.	Mr Stott replied that Eskom was in fact involved in the development of King III Report. It is therefore very much part of Eskom's business.

APPENDIX 2: PRESENTATION OF DRAFT EIA REPORT

Size of the Cape Town (Newlands) Public Meeting presentation	1,607KB
Size of the Duynefontein Public Meeting presentation	1,607KB
Size of the Atlantis Public Meeting presentation	1,647KB

All presentations can either be downloaded from the following websites:

- Eskom's website: www.eskom.co.za/eia under the "Nuclear 1-Generation" link
- Arcus GIBB website: http://projects.gibb.co.za/ under the "Nuclear 1 - Draft Environmental Impact Assessment" link

or can be requested from ACER (Africa) at 086 010 4958 or by notifying Bongi Shinga at bongi.shinga@acerafrica.co.za or nuclear1@acerafrica.co.za

APPENDIX 3: ATTENDANCE LISTS

Surname	First Names	Title	Co/Org	Cape Town Meeting 19 April 2010	Melkbosstrand Meeting 20 April 2010	Atlantis Meeting 21 April 2010
Ball	Jaana-Maria	Ms	Arcus GIBB	Attended	Attended	Attended
Becker	Peter	Mr	Koeberg Alert Alliance	Attended	Attended	Attended
Bergh	Bradley	Mr		Attended		
Bowler	Karin	Mrs	Karin Bowler Enterprises	Attended		
Bremm	Christian	Dr		Attended		
Carter	Neal	Mr		Attended		
Cavallini	Pierre	Dr	Areva NP		Attended	
Coley	D	Mr/s		Attended		
Copeland	Ivan	Mr		Attended		
Copeland	Greg	Mr		Attended		
Crombie	David	Mr	Arcus GIBB	Attended		
Davenport	Tony	Mr	Landmark	Attended		
de Villiers	Carin	Ms	Eskom Holdings Limited	Attended	Attended	
de Villiers	Louis	Mr	CEJ			Attended
Dekker	Jaap	Mr	ERE Services	Attended		
Diore	Frederic	Mr	EDF South Africa		Attended	
Dowdall	Shannon	Ms		Attended		
Dyabaza	Jongi	Mr	Eskom Koeberg NPS		Attended	Attended
Edwards	R	Mr		Attended		
Engels	Theo	Mr		Attended		
Fox	Mark	Mr		Attended		
Furnon-Roberts	Norbert	Mr	NFR Investments CC	Attended		
Gqabuza	Anele Timothy	Mr				Attended
Greeff	Gert	Mr	Eskom Holdings Limited	Attended	Attended	

Surname	First Names	Title	Co/Org	Cape Town Meeting 19 April 2010	Melkbosstrand Meeting 20 April 2010	Atlantis Meeting 21 April 2010
Grey	Peter	Mr	City of Cape Town	Attended		
Gurzynski	Rod	Mr	I&AP	Attended		
Herbst	Deidre	Ms	Eskom Holdings Limited	Attended		
Heydenrych	Reuben	Mr	Arcus GIBB	Attended	Attended	Attended
Iosiphakis	John	Mr			Attended	
Jenne	Samantha	Mrs		Attended		
Jolly	Pieter	Mr		Attended		
Lakhani	Muna	Mr	Institute for Zero Waste in Africa	Attended		Attended
Lankers	Bronwen	Ms	Zero Waste Hout Bay	Attended		
Leask	Kevin	Mr	Eskom Holdings Limited	Attended		
Macdonald	Janda	Mrs		Attended		Attended
Mangaliso	Yandisa	Mr				Attended
Marx	Joanna	Ms		Attended		
Mbelembushe	Phumeza	Mr/s				Attended
Mbusi	Mandla	Mr	Eskom Holdings Limited	Attended		
McDaid	Liziwe	Ms	The Green Connection	Attended		
Mentor	C	Mr	Atlantis Commnunity Member			Attended
Meyrick	Mike	Mr			Attended	Attended
Mhlalisi	Mpumi	Mr	CANE			Attended
Miles	Melvyn	Mr	Eskom: Koeberg Visitors Centre			Attended
Molete	Rodney	Mr	Eskom	Attended		
Moonsamy	Gino	Mr	National Nuclear Regulator	Attended		
Moses	Liam	Mr	Cape Argus	Attended		
Mushwana	Stet	Mr	Transnet Freight Rail	Attended		
Mwase	Joe	Mr	National Nuclear Regulator	Attended		
Norman	Jan	Mr	Koeberg		Attended	

Surname	First Names	Title	Co/Org	Cape Town Meeting 19 April 2010	Melkbosstrand Meeting 20 April 2010	Atlantis Meeting 21 April 2010
Paulin	Amandine	Ms	EDF South Africa		Attended	
Pelser	Candice	Ms		Attended		
Qunta	Nolita	Miss				Attended
Raab	Sabine	Dr		Attended		
Reinecke	Daniel	Mr	CANE / KAA / Rebelsrus Conservancy		Attended	
Roux	ML	Ms	Habitat Council & CAPTRUST	Attended		
Royal	Alex	Mr		Attended		
Schoeman	Daniel	Mr			Attended	
Songelwa	Zimkhitha	Miss				Attended
Stanton	Sherry	Mrs		Attended		
Stott	Tony	Mr	Eskom Holdings Limited	Attended	Attended	
Theron	Mervin	Mr	Eskom Holdings Limited	Attended		Attended
Thorpe	Kevin	Mr	Milnerton Residents Association		Attended	
Tickner	Sean	Mr		Attended		
Tritton	Rod	Mr		Attended		
van Huyssteen	Anne	Ms		Attended		
Visser	Dirk	Mr		Attended		
Warburg	Carl	Mr		Attended		
Wesselink	Pieter	Mr		Attended		
West	David Michael	Mr	Eskom Holdings Limited	Attended	Attended	Attended
Wise	Allan	Mr		Attended		