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

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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 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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		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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		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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		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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			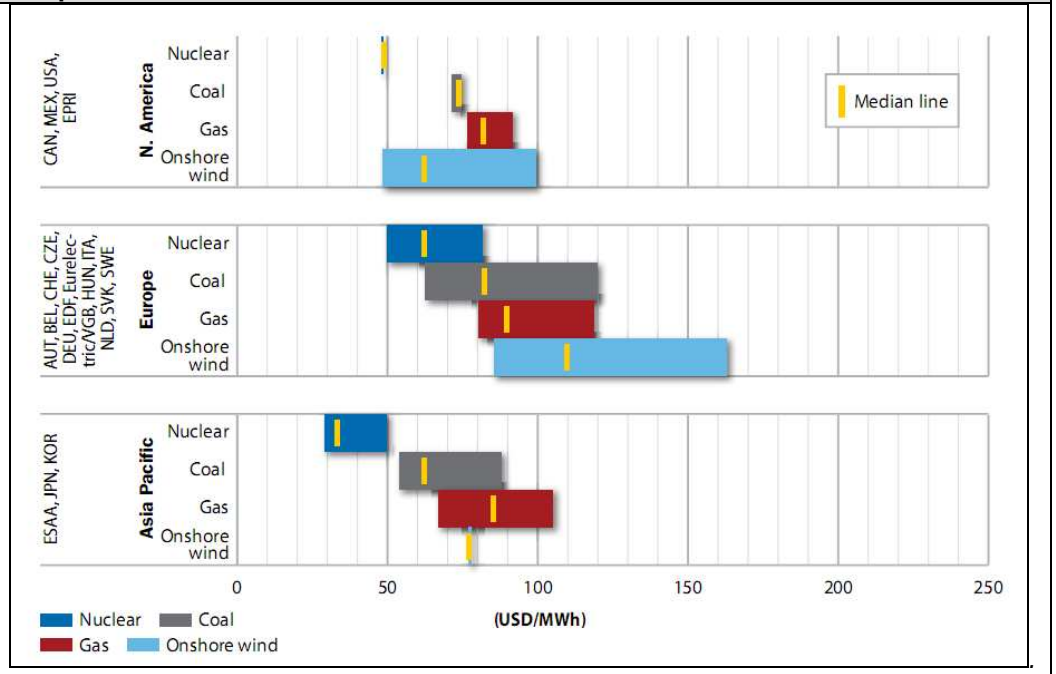 ***Figure 1:*** *Regional ranges of LCOE for nuclear, coal, gas and onshore wind power plants (at 5% discount rate)*

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			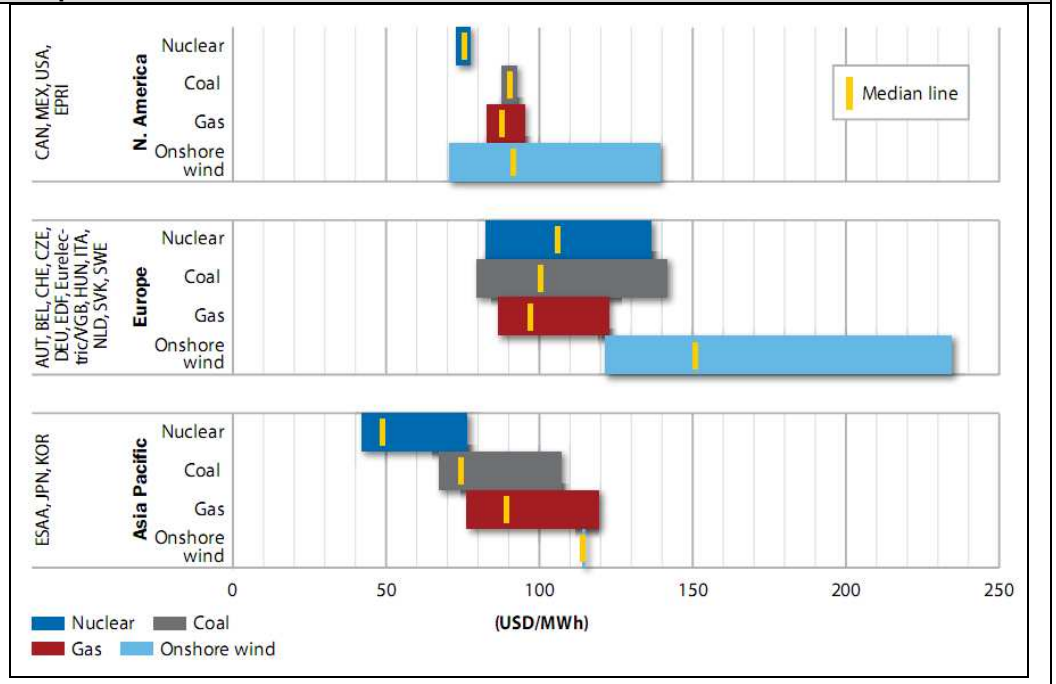 ***Figure 2:*** *Regional ranges of LCOE for nuclear, coal, gas and onshore wind power plants (at 10% discount rate)*
19	Mr Theo Engels	How much has Demand Side Management done in terms of efficiency?	Mr Stott said that demand side management has had an impact but he did not have the exact figures with 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		