

ENVIRONMENTAL IMPACT ASSESSMENT – SCOPING PHASE

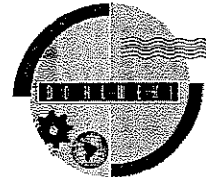
PROPOSED CONSTRUCTION OF A COMBINED CYCLE GAS TURBINE
(CCGT) POWER PLANT IN THE AMERSFOORT AREA, MPUMALANGA
PROVINCE

DRAFT MINUTES OF THE FOCUS GROUP MEETING

PIXLEY KA SEME LOCAL MUNICIPALITY

HELD ON
FRIDAY 08 FEBRUARY 2008
AT 10H00

AT
PIXLEY KA SEME LOCAL MUNICIPALITY OFFICES
VOLKSRUST



ENQUIRIES

BOHLWEKI ENVIRONMENTAL

Public Participation Process

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YOUR COMMENTS

Your comments on this document would be greatly appreciated. In particular, we request you to verify that your comments during the meeting have been minuted correctly. Please address your written comments to Nicolette Raats or Sibongile Hlomuka at the address given above by no later than **13 March 2008**. Please note however that the minutes are not verbatim.

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**MINUTES OF THE MEETING
FRIDAY 08 FEBRUARY 2008
PIXLEY KA SEME LOCAL MUNICIPALITY OFFICES
VOLKSRUST**

1. WELCOME, INTRODUCTION AND APOLOGIES

Ms Mapaseka Madonsela, The Executive Mayor, welcomed all the councilors, municipal officials and everyone present at the meeting.

Mr Sifiso Kunene, Director of Corporate Services welcomed the municipal manager Mr. De Jager and the executive mayor Ms Mapaseka Madonsela and thanked them for being present in the meeting. He further introduced the municipal officials, councillors and the community development workers.

Ms Nicolette Raats informed the attendees that Bohlweki Environmental had been appointed as independent consultants to undertake the necessary environmental studies and public participation process (PPP) associated with the proposed project. She introduced herself as a leader of the public participation unit and also introduced the following Bohlweki team members:

- Malcolm Roods – Bohlweki
- Nicolette Raats – Bohlweki
- Sibongile Hlomuka – Bohlweki;

Eskom was represented by the following team:

- Rudi van der Wal – Eskom (Majuba PS)
- Chantelle Le Grove Smith - Eskom (UCG operation)
- Lou Duvenga – Eskom (UCG operation)
- Riana Bothma - Eskom (UCG operation)
- Nico Gewers – Eskom (Generation Environmental Management, GEM)
- Tobile Bokwe – Eskom (Generation Environmental Management, GEM)
- Morore Mashao – Eskom (Generation Divisional Client Office, DCO)

The attendance record is attached as **Appendix A**

2. PURPOSE OF TODAY'S MEETING

Ms Nicolette Raats briefly explained that the purpose of the meeting was to:

- Provide Pixley ka Seme Local Municipality with information regarding the proposed construction of a combined cycle gas turbine (CCGT) power plant in the Amersfoort area, Mpumalanga province;
- Provide an overview of the Environmental Impact Assessment (EIA) and Public Participation Process (PPP) being followed for the proposed project;
- Provide an opportunity for the Pixley ka Seme Local Municipality to seek clarity and provide input into the Environmental Impact Assessment of the proposed project;
- To record comments raised and include them in the Environmental Scoping Report; and
- Interaction with the project team.

3. RATIONALE AND BACKGROUND TO THE PROPOSED PROJECT

Mr Nico Gewers presented the Rationale and Background to the proposed construction of a Combined Cycle Gas Turbine (CCGT) power plant. The presentation is attached in Appendix B.

4. TECHNICAL PRESENTATIONS

Mr Morore Mashao explained the technical aspects regarding the Combined Cycle Gas Turbine Power Plant and illustrated these aspects using the presentation attached in **Appendix B**.

5. ENVIRONMENTAL IMPACT ASSESSMENT (EIA) PROCESS

Mr Malcolm Roods presented the Environmental Impact Assessment process that will be followed for the proposed project according to the EIA regulations. A summary of the process involves:

- Application to the relevant Authorities;
- Undertaking a Screening study/process;
- Submission of the Environmental Scoping Report;
- Submission of the Environmental Impact Assessment Report and Environmental Management Plan; and
- Awaiting the Environmental Authorisation from the decision making authority.

The public participation process is undertaken throughout the EIA process. A screening study has been undertaken forming part of the site selection process of the proposed project. The purpose of the screening study was to identify feasible/potential sites for locating the CCGT plant and its associated infrastructure.

The Study area for site selection was a 10km radius around the existing UCG plant. The draft Scoping Report is not yet complete, however the environmental consultants are currently incorporating the findings of the specialist reports within the draft Scoping Report.

The presentation in **Appendix B** highlights the findings and feasible or preferred sites identified for the scoping study. The aims of the environmental scoping study include:

- To identify potentially significant environmental impacts (both positive and negative impacts)
- Evaluation of sites and issues to be investigated in the EIA phase
- Nominations of a preferred site/s for further investigation in the EIA phase (taking environmental, economic and technical issues into account).
- Make recommendations regarding studies required within the detailed EIA
- Public Participation
 - * Inform the public of the proposed project
 - * Opportunity to raise concerns about and provide input into the project

Mr Malcolm Roods further presented the following specialist studies to be studied in the EIA phase:

Specialist Study	Organisation
Groundwater and Surface Water	SRK Consulting
Biodiversity	Bathusi Environmental Consulting (BEC)
Air Quality	Bohlweki Environmental (Air Quality Unit)
Noise	Jongens Keet and Associates
Social	Master-Q Research
Visual	MetroGIS
Traffic	SSI Engineering and Environmental Consultants
Risk (MHI assessment)	Riscom
Heritage	National Cultural History Museum

6. PUBLIC PARTICIPATION PROCESS

Mr Malcolm Roods gave a brief overview of the process to be followed during the Public Participation Process. It is important to indicate that no legal requirement currently exists to

undertake a Public Participation Process as part of a screening exercise. Therefore, the Public Participation process starts in the Environmental Scoping Phase and will be followed through to the Appeal period of the project

7. DISCUSSION SESSION

7.1 Location site comments and concerns

- *Mr de Jager, Pixley Municipality* asked whether the project will be located at Majuba.
Mr. Morore Mashao, Eskom, answered that a ten kilometer radius around the current Underground Coal Gasification (UCG) plant was identified and that the ideal site will be determined through the environmental impact assessment and feasibility studies.
- *Mr. de Jager* asked if the Majuba mining site was considered an option for this project.
Mr. Morore Mashao, Eskom explained that the mining site has been identified as a potential site for the location of the CCGT plant. He also explained that the coal in that area is not feasible to be mined but that the site will be considered to provide gas for the CCGT plant.
- *Mr Gift Kgoebane* wanted to know how many sites will be investigated for the project.
Mr Malcolm Roods, Bohlweki responded that normally 2-3 sites are investigated during the EIA phase. He then referred the matter to Mr Tobile Bokwe for further elaboration.
Mr Tobile Bokwe, Eskom added that ten (10) sites were identified during the screening exercise but six (6) sites have resulted from the scoping phase. This result is because the other four (4) sites may be used for extension of the UCG operations in the future. At the end of the scoping phase, three (3) sites will be taken for specialist investigations in the EIA phase. At the end of the EIA phase, the specialist EIA studies will identify and highlight the preferred site in terms of environmental assessments. Mr Bokwe further encouraged the attendants to engage the process by completing the registration form attached and sending it to Bohlweki Environmental, with their comments and concerns. All the comments regarding the project will be captured in an issues trail, and will inform the EIA process.

7.2 Timeframe issues

- *Mr. Vusi Maseko, Community Development Worker (CDW)*, enquired on when the operation will take place.
Mr. Morore Mashao, Eskom answered that the plan is to have the station fully operational 36 months after receipt of the Environmental authorization.

- *Mr. Gift Kgoebane, Director Technical Services*, needed clarity on the project plan as *Mr. Morore* indicated that Eskom is still waiting for the business case to be approved and asked when will the project start being functional.

Mr. Morore Mashao, Eskom, responded that the project undergoes various stages and there was a pre-feasibility phase and now the project has moved into a feasibility phase. At the moment, Eskom does not have exact details but by 2011, Eskom plans to have the first unit of the project functional. In 2009, Eskom plans to have the utilization of the gas operational within the plant. The process to get the power plant operational runs parallel to the Environmental authorization process as there is additional operating licenses that need to be obtained.

7.3 Social issues and comments

- *Ms Mapaseka Madonsela, Executive Mayor*, enquired how many job opportunities will be created by the proposed development.

Mr. Morore Mashao, Eskom answered that the project has scope of work for manual workers, and the nature of the work involved does not cater for a huge number of jobs. However, there is a small number of people to be employed in the plant. In the year 2011 the numbers are anticipated to grow to 1000 as there would be higher labour requirements. The whole process of employment issues will be guided by the Accelerated Growth Initiative for South Africa (ASGISA). The contractor will also play a role in terms of employment.

- It was asked of what will happen to gases not used, will they be dealt with under waste management or is there a alternative planned

Mr. Morore Mashao, Eskom, answered that they will minimize emissions as much as possible. He further indicated that the EIA studies for the complex will look into all environmental impacts. The environmental management plan will manage the impacts and suggest mitigation measures.

- *Mr Mandla Shabangu, Community Development Worker*, wanted to know if there are certain stakeholders that have been involved in the project like the Department of Health and the Department of Labour.

Nicolette Raats, Bohlweki Environmental, answered that there is a focus group meeting for provincial authorities that has been scheduled. Relevant government officials would be invited to the meeting to obtain their comments.

- *Mr Vusi Maseko* enquired to what extent the agricultural industry has been considered.

Nico Gewers, Eskom, answered that the agricultural potential of the area will be taken into consideration and that this will be dealt with in the EIA and the details of the study will be available in the EIA reports.

- *Mr Leon Grove, MHS*, highlighted that DEAT has declared the Majuba area as the second highest polluted area in South Africa.

Nico Gewers, Eskom, responded that Eskom is in constant contact with DEAT and are aware of air quality issues in the area. Air quality issues will further be dealt with in the EIA phase, as a specialist study.

8. CLOSURE AND WAY FORWARD

The draft minutes of the meeting will be distributed to those who attended the meeting and delegates were thanked for their attendance.

The way forward after distribution and finalization of the minutes are:

- Draft Scoping Report available in public places for review (30-day period).
- Inclusion of I&AP comments in Final Scoping Report and EIA Process.
- Submission of Final Scoping Report and Plan of Study (PoS) for EIA to DEAT for decision making.
- Comments and approval of Scoping Report and PoS for EIA.
- Commence with the EIA Phase of the project – detailed investigations.

The focus group meeting was closed by Mr. Kunene at 11h55.

APPENDIX A

ATTENDANCE RECORD

Majuba CCGT - Attendance Record - FGM 8/02/08

Name:

Arnaldo, Mary
 Bothma, Riaan
 De Jager, L.
 Dladla, Vusimuzi
 Duvénogé, Lou
 Gewers, Nico
 Grove, Leon
 Hlabulsa, Nkosane
 Hlakutsa, Emma
 Hlomuka, Sibongile
 Kgoebane, Gift M.
 Kula, Ncamile
 Kunene, Sifiso
 Le Grove Smith, Chantelle
 Luthuli, Fikelephi
 Madonsela, Mapaseka
 Maseko, Vusi
 Mavimbela, Sylvia
 Motua, Stanley
 Msibi, Dumile
 Msibi, Sibongile
 Mtshali, Cingile
 Nkambula, Ben
 Shabangu, Mandla
 Simelae, Charles
 van der Linde, S.
 van der Wal, Rudi
 van Dyk, Eugene

Company

Pixley ka Seme Local Municipality
 Eskom UCG
 Pixley ka Seme Local Municipality

 Eskom UCG
 Eskom

 CDW
 Pixley ka Seme Municipality
 Bohlweki Environmental
 Pixley ka Seme Local Municipality

 Pixley ka Seme Local Municipality
 Eskom UCG

 Pixley ka Seme Local Municipality

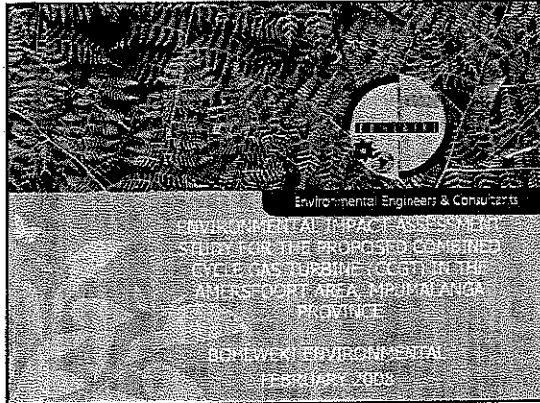
 Pixley ka Seme Local Municipality

 Pixley ka Seme Local Municipality
 Eskom Majuba P/S
 Pixley ka Seme Local Municipality

Totals:

APPENDIX B

PRESENTATIONS



AGENDA

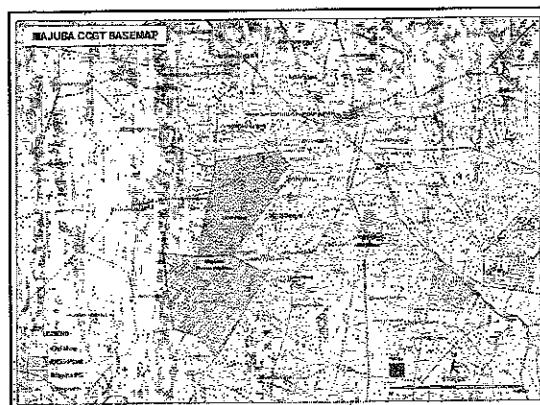
1. Welcome, Apologies & Introduction
2. Conduct of the Meeting
3. Purpose of the Meeting
4. Background/Rationale to the proposed project (Eskom)
5. Technical Presentation (Eskom)
6. Environmental Impact Assessment (EIA) Process
7. Public Participation Process
8. Discussion Session
9. The Way Forward

CONDUCT OF THE MEETING

- Language of choice
- Focus on issues
- Equal participation from all parties
- Identify yourselves prior to question – for minute taking purposes
- Please wait until the discussion session to ask questions

PURPOSE OF TODAY'S MEETING

- Provide Pixley ka Seme Local Municipality with information regarding the proposed Combined Cycle Gas Turbine (CCGT) power plant in the Amersfoort area, Mpumalanga Province
- Provide an overview of the Environmental Impact Assessment (EIA) & Public Participation Process (PPP) being followed for the proposed project
- Provide an opportunity for the Pixley ka Seme Local Municipality to seek clarity and provide input into the project
- To record comments raised and include them in the Environmental Scoping process and report
- Interaction with the project team



BACKGROUND/RATIONALE TO THE PROPOSED PROJECT (ESKOM)

TECHNICAL PRESENTATION ON THE PROPOSED COGT POWER PLANT IN THE AMERSFOORT AREA (ESKOM)

EIA PROCESS FOR THE PROJECT

- Phase 1: Site Screening Study
- Phase 2: Environmental Scoping Study
- Phase 3: Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP)

Public Participation Process – Ongoing throughout the EIA Process (to be discussed later)

APPROACH TO SITE SELECTION – SCREENING STUDY

- Purpose: to identify ideal/potential areas within the study area that could be feasible sites to accommodate the COGT and associated infrastructure
- Study area - 10km radius around the UCG plant

SENSITIVITY MAPPING

- Study area divided into 3 sensitivity categories – ideal; acceptable and sensitive (each specialist had his/her own criteria for this classification)
- Site sensitivity map requested from the following specialist fields:

Biophysical	Social
Groundwater	Air
Surface Water	Noise
Ecology	Social*
	Heritage*
	Visual
	Risk*
	Traffic*


*No sensitivity maps were received

SENSITIVITY MAPS – SOCIAL, HERITAGE AND RISK

- Social:** Sensitivity map for social impacts largely informed by the visual sensitivity map and farmhouses
- Heritage:** Difficult to determine specific issues with regard to sensitivity due to the extent of the study area
- Risk:** No fatal flaw regarding any site nor the preference for any site. More detailed studies in the Scoping and EIR phase


SENSITIVITY INDEXES

- Sensitivity maps overlaid in order to calculate total sensitivity
 - Sensitive areas awarded a value of -1
 - Acceptable areas awarded a value of 0
 - Ideal areas awarded a value of +1
- An area with most sensitive value (-7) indicated areas that were awarded a -1 by all the specialists

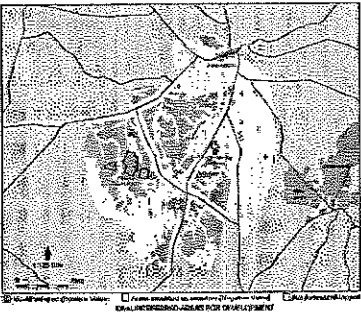


SENSITIVITY ZONING

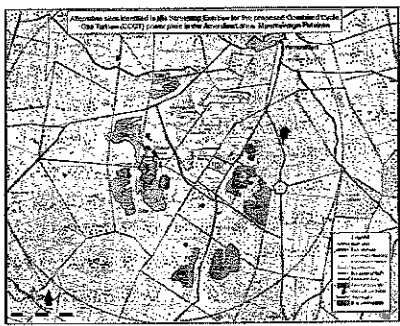
- Simplification of the Index into 3 zones:
 - Negative (sensitive – red) -6 to -1 value
 - Zero (acceptable – yellow)
 - Positive (ideal – green) +6 to +1 value
- Zero could be as result of a +1 and -1 canceling each other out hence next figure which only provide for +1 and above



IDEAL/PREFERRED AREAS



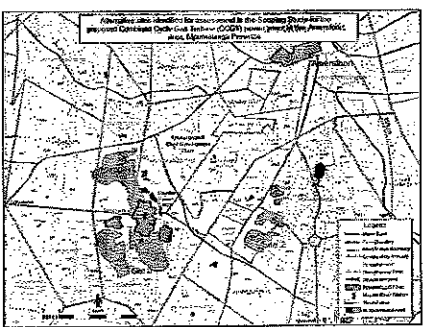
SITES – SCREENING STUDY



ALTERNATIVE SITES FOR THE SCOPING PHASE

Site 1	
Site 2 a and 2b	Old mine
Site 3	
Site 4	
Site 5	
Site 6	Site close to the HV yard Majuba PS
Site 7a	Area south east of the Majuba PS
Site 7b	Area inside the Majuba PS
Site 7c	Area south of the old dump

SITES – SCOPING STUDY



AIMS OF THE ENVIRONMENTAL SCOPING STUDY

- Identify & evaluate potentially significant environmental impacts (both positive and negative impacts)
- Evaluation of sites and issues to be investigated in the EIA phase
- Nomination of a preferred site/s for further investigation in the EIA phase (taking environmental, economic and technical issues into account).
- Make recommendations regarding studies required within the detailed EIA
- Public Participation
 - Inform the public of the proposed project
 - Opportunity to raise concerns about and provide input into the project

SPECIALIST STUDIES

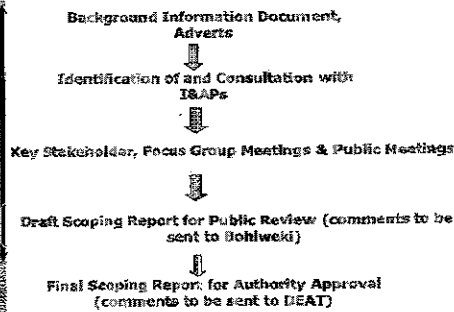
Specialist Study	Organisation
Groundwater and Surface Water	SRK Consulting
Biodiversity	Bathusi Environmental Consulting (BEC)
Air Quality	Bohivweki Environmental (Air Quality Unit)
Noise	Jongens Keet and Associates
Social	Master-Q Research
Visual	MetroGIS
Traffic	SSI Engineering and Environmental Consultants
Risk (MHI assessment)	Riscom
Heritage	National Cultural History Museum

EIA PROCESS

- Environmental Impact Assessment
 - Assessment and rating impacts of significance
 - Address cumulative impacts
 - Detailed Specialist Studies
 - Detail mitigation & management measures
 - Public Involvement (issues recorded and addressed)
- Draft Environmental Management Plan

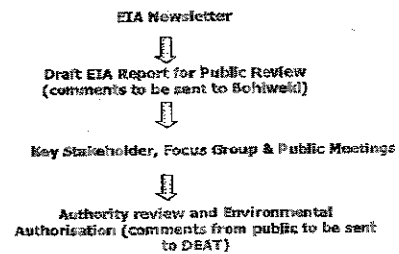
PUBLIC PARTICIPATION PROCESS

Public Participation Process



PUBLIC PARTICIPATION PROCESS (cont.)

Public Participation Process



THE WAY FORWARD

- Compilation and distribution of minutes of the Focus Group Meeting
- Draft Scoping Report available in public places* for review (30-day period)
- Inclusion of ISAP comments in Final Scoping Report and EIA Process
- Submission of Final Scoping Report and Plan of Study (PoS) for EIA to DEAT for decision making
- Comments and approval of Scoping Report and PoS for EIA
- Commence with the Phase 3 (EIA Phase) of the project – detailed investigations.

*To be determined

DISCUSSION

Contact Details:

Bohivweki Environmental

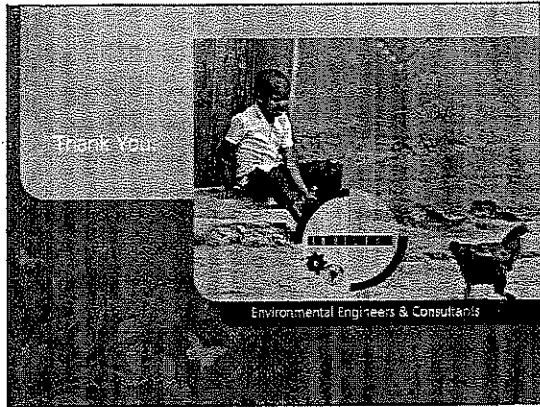
Ms Nicolette Raats or Ms Sibongile Hlomuka


Tel: 011 798 6001

Fax: 011 798 6010

E-mail: majubaccgt@bohivweki.co.za

PO Box 867, Gallo Manor, 2052





Proposed Combined Cycle Gas Turbine (CCGT) in the Amersfoort area

Strategic Overview
Focus Group Meetings
February 2008

Eskom

Eskom's Vision

“Together building the powerbase for sustainable growth and development”

Eskom

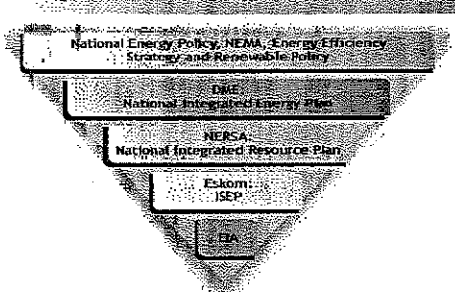
How Do We Achieve This Vision?

Four key strategic objectives:

- *Sustaining quality and continuity of supply*
- *Capacity expansion*
- *Funding and resourcing*
- *Leveraging business operations for developmental benefits*

Eskom

Contextualising Eskom's Planning



National Energy Policy, NEMA, Energy Efficiency Strategy, and Renewable Policy

DEA
National Integrated Energy Plan

NERSA
National Integrated Resource Plan

Eskom
ISEP

DEA

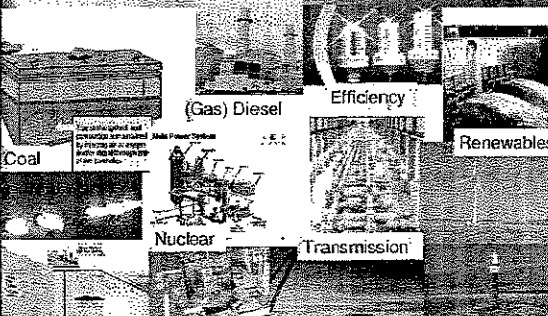
Eskom

Electricity demand and supply – key challenges

- Demand for electricity continues to increase, resulting in South Africa having reached the end of its surplus generation capacity → →
- 1st challenge:** Avoiding mismatch between demand and supply
 - Excess capacity - stranded resources
 - Capacity shortage - constrained economic growth
- 2nd challenge:** Correct choice of capacity to be constructed (from an array of available options that differ dramatically in terms of):
 - Cost (construction and operating)
 - Lead time to construction
 - Environmental impact
 - Operating characteristics (for example: peaking, baseload) →
- Eskom will target approximately 70% of new capacity (in MW), remaining 30% supplied from independent power producers.

Eskom

Technological Options



Coal

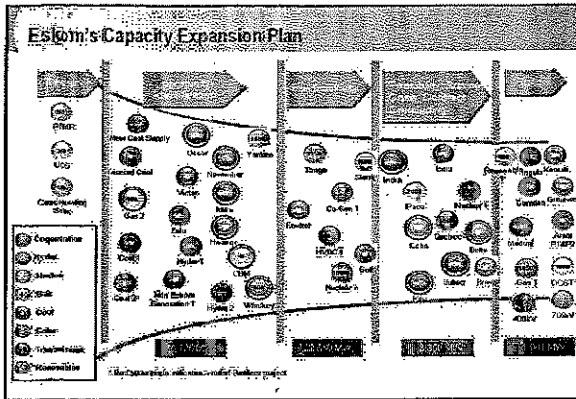
(Gas) Diesel

Efficiency

Nuclear

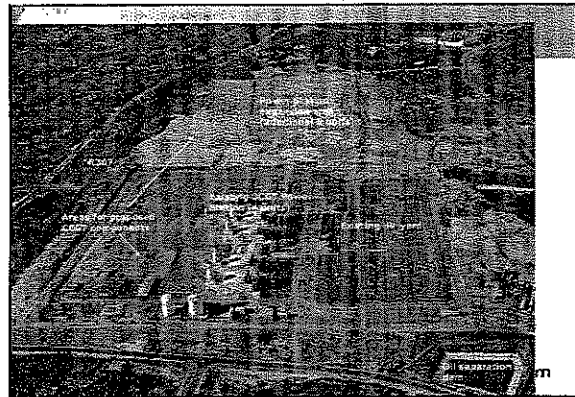
Transmission

Renewables

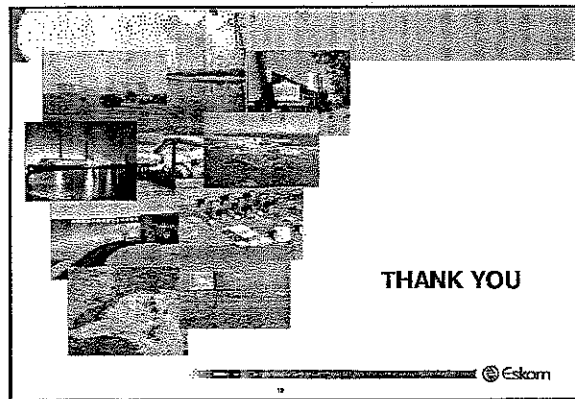


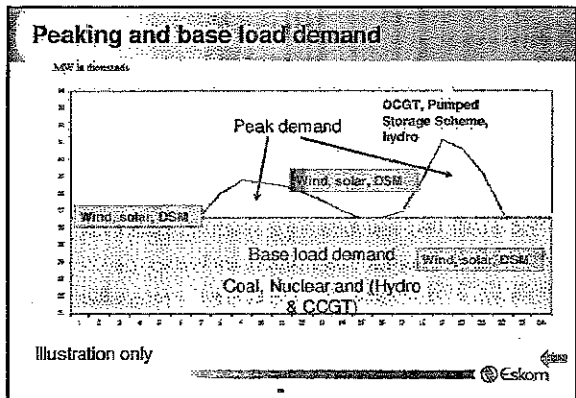
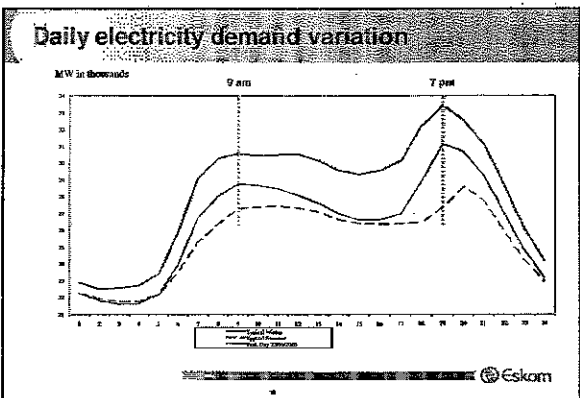
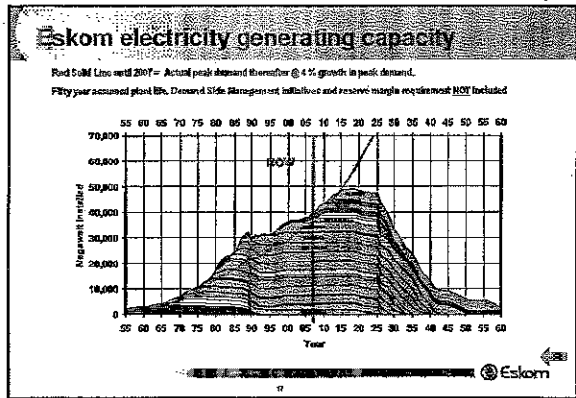
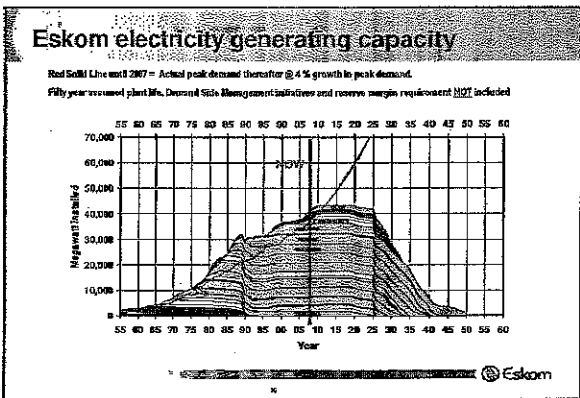
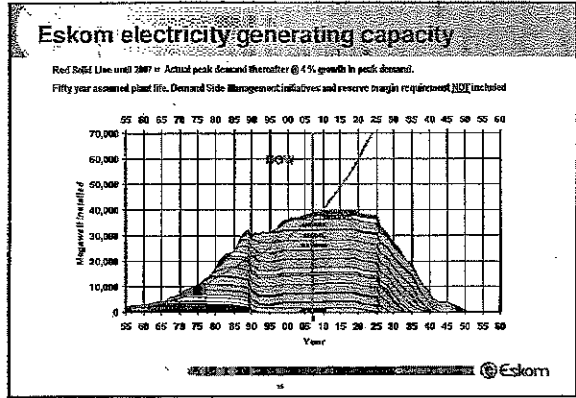
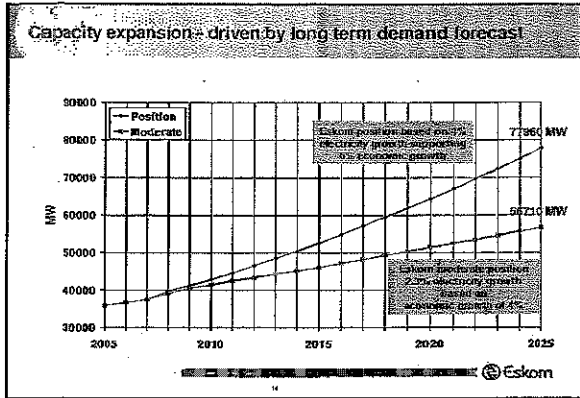
- ### Summary of previous slides
- 40 000 MW + generating capacity addition over the next 20 years
 - Generating mix (energy mix) will change (in fact has changed)
 - Internationally increasing pressure on countries to increase their share of renewable energy generation due to concerns around climate change and exploitation of non-renewable resources
 - Alignment with SA Government's 10-year target for renewable energy – 1867 MW (about 4%) renewable energy contribution (biomass, wind, solar and small-scale hydro) to final energy consumption by 2010, subject to acceptable economics, including distributed renewable opportunities
 - Additional peaking plant which will include pumped storage and OCGT capacity where technically and economically feasible
 - The demand-side management and energy efficiency programme target of 8,000 MW by 2025, including distributed generation options
 - Promote the development of incentives for distributed renewable options and energy efficiency
- Eskom

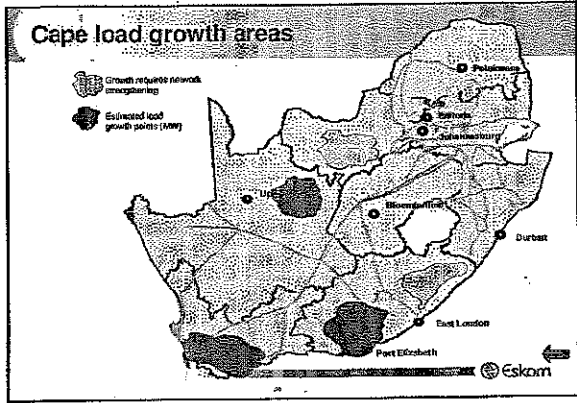
- ### What is Eskom already building?
- Gas 1 (Expansion to the existing Ankerlig & Gourikwa Open Cycle Gas Turbines) – an additional 1050 MW) – to be completed end 2009/beginning 2009
 - Medupi Power Station – 4600 MW coal-fired station in Lephalale (Ehleras) – first unit to come on-line in 2012
 - Ingula Pumped-storage scheme (in Drakensberg) – 1332 MW
 - Return-to-service of mothballed power stations (Camden, Grootvlei and Komati) – 3500 MW
- Eskom



- ### Regulatory processes
- Environmental Impact Assessment
 - Other authorisations
- Applications for authorisations and permits required from other Authorities - for example with respect to land use zoning, PFMA, NER generating licence, other local authority requirements, etc., will be made at the appropriate stage during the project
- Eskom





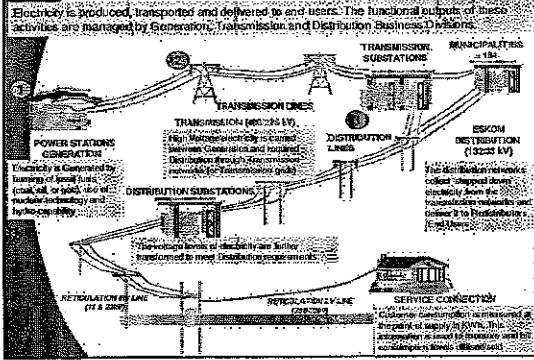


Majuba Combined Cycle Gas Turbine Power Plant

Presented by
 Margie Mashilo,
 Generation Divisional Client Office



Industry overview

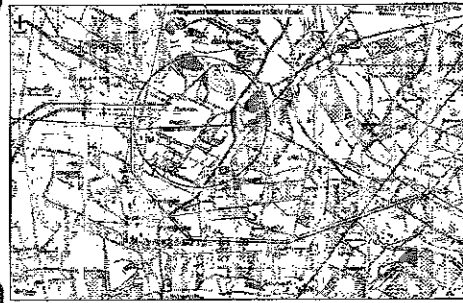


Project Scope

- Construction of "gas fired" Combined Cycle Gas Turbine (CCGT) Power Plant
- EIA limited to the CCGT power plant, road, water and gas pipe line.



Plant location



TECHNOLOGY OVERVIEW



Underground Coal Gasification (UCG)



UCG is a method of converting unmined coal into synthetic gas (a mixture of hydrogen, methane, higher hydrocarbons and carbon monoxide).

UCG gas production process is ready for commercialization:

- Evidence:**
- Very long history of coal gas production and use with conventional gasification
 - Long history of UCG gas production and use
 - Technology for UCG gas production and use proven on pilot by Eskom
 - Perceived barriers to development overcome
 - Current commercial potential is high
 - IGCC technology already in use
 - Gas Production - more than 50 years of gas production and pilot test work
 - Gas Clean-up - Sasol has pioneered and developed since 1950's & developed for IGCC plants in US and Europe
 - Power Generation - low CV (caloric value) combustors developed for turbines applied in IGCC plants and suitable for gasification

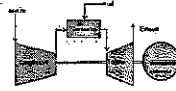


Technology Overview (UCG)

- Underground Coal Gasification (UCG) is a gasification process carried on in non-mined coal seams using injection and production wells drilled from the surface, enabling the coal to be converted in situ into product gas.
- The UCG syngas produced can be used for electricity generation, hydrogen production, conversion into liquid fuel or as a feedstock for the production of chemicals.
- The coal syngas produced from the UCG process has a low- to medium- calorific value (usually below 10 MJ/m³).

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Technology Overview (Gas Turbine)

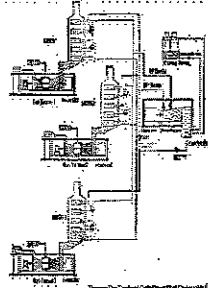


- A gas turbine, also called a combustion turbine, is a rotary engine that extracts energy from a flow of combustion gas.
- It has an upstream compressor coupled to a downstream turbine, and a combustion chamber in-between.
- Gas turbines are used in power production, jet engine propulsion and mechanical drive applications. The industrial gas turbines (used for power generation) are manufactured up to a size of 330 MW.
- The common fuels are natural gas for engines used for power production and kerosene for jet propulsion.

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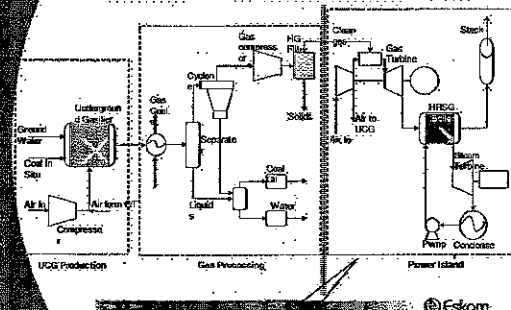
Combined Cycle Gas Turbine (CCGT)

- A CCGT power plant uses a cycle configuration of gas turbines, heat recovery systems, generators and steam turbines to generate electricity.
- The proposed project will have a total capacity of 2100MW
- In UCG-CCGT combination, the primary fuel for the CCGT plant will be coal syngas produced from the UCG process.



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Schematic Plant layout



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Thank You

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UCG - IGCC Staff Numbers

