

**PROPOSED NEW COAL-FIRED POWER STATION IN THE LEPHALALE
AREA, LIMPOPO PROVINCE
ENVIRONMENTAL IMPACT ASSESSMENT**

MEETING WITH ESKOM MANAGEMENT

29 March 2006

12:30

Matimba Power Station, Lephalale

1. WELCOME AND INTRODUCTION

Mr. Des Sheppard provided an opportunity for the attendants to introduce themselves and welcomed the attendants to the meeting regarding the proposed new coal-fired power station in the Lephalale area, Limpopo Province.

**2. OVERVIEW OF THE ENVIRONMENTAL IMPACT ASSESSMENT
PROCESS EIA AND PUBLIC PARTICIPATION**

Ms. Ashlea Strong explained that the purpose of the meeting was to:

- Provide Eskom stakeholders and management representatives with further information regarding the proposed new Coal-fired Power Station project;
- Provide Eskom stakeholders and management representatives with further information regarding the EIA and public participation process being undertaken for the proposed new Coal-fired Power Station project;
- Provide a forum for these stakeholders to engage with project team members and representatives from Eskom Generation; and
- Provide an additional opportunity to formally raise any issues and concerns.

She provided an overview of the proposed project and discussed the EIA process and public participation process, as well as the findings of the draft Environmental Impact Assessment Report (EIR).

The presentation is included in Appendix A.

3. DISCUSSION SESSION

Mr. Des Sheppard asked whether all eight properties that were assessed as part of the Environmental Scoping process belonged to Eskom. It was indicated that only the farm Zongesien was the property of Eskom. The other farms would have to be bought. At this stage Eskom intended to buy all four properties assessed as part of the detailed EIA. Negotiations with some of the property owners have started.

It was indicated that the location of the conveyor belt should take the position of the coal stockyard into account.

It was asked whether ashing into the pit was finalised. Ms. Deidre Herbst said Kumba Resources would have to undertake various studies to indicate to Eskom whether they would be willing to accommodate such an option. Their EIA for their extensions have recently been initiated. Eskom and Kumba Resources will further jointly investigate that option and undertake more detailed research in this regard. These detailed investigations will not form part of the EIA study, although the EIA noted this as a possible option.

It was asked what the attitude of the landowners was regarding the proposed project. Ms. Herbst replied that they understood that development was necessary, but were concerned about the impact on their property values. The majority of people in Marapong were positive and their concerns focused on job creation and skills development.

Mr. Hein Hoffmann indicated that the DWAF studies with regards to the supply of water were being undertaken. He noted that the validation study would be completed by the end of April, but the other studies would only be completed by the end of this year due to the stakeholder involvement processes of those studies. Some hydrology studies would be updated by May although more detailed studies would only be finished by the end of the year. A draft water conservation and demand study would be available by the end of April although they would be hesitant to distribute the findings of that study as it would not yet been finalised. The final Reconnaissance study was expected to be completed by the end of April.

It was asked whether water would be sourced from the Mokolo Dam, wherever this water came from. Mr. Hoffmann indicated that at this stage DWAF investigated raising of the dam wall and augmentation from the Crocodile River Catchment. Raising of the dam wall was a possibility, although it was clear that there would be definite international implications for raising the dam wall. Negotiations in this

regard would take some time as Botswana, Zimbabwe and Mozambique would also be involved and it was thus not foreseen that the negotiations would be concluded in these timeframes. Augmentation from the Crocodile River Catchment was the preferred alternative, although this could only be finalised once all the relevant DWAF studies were completed. DWAF therefore needs to review the findings from these studies to ensure that there would be sufficient water in that catchment. Ms. Herbst added that the water could be directly extracted from the Mokolo Dam, or it could be piped directly to the facility. These options were also still under investigation.

Ms. Strong highlighted that one of the main recommendations of the Fauna and Flora Study was that a Boabab tree would have to be relocated, as it was in the way of the new proposed power station.

Ms. Strong indicated that the air quality impact assessment found that there would be exceedances, but that it was difficult to indicate whether there would thus be non-compliance or not due to the "vagueness" of the current SA Legislation in this regard. The actual impact of these exceedances should thus be clearly communicated to DEAT. It was also planned to have discussions between Eskom Management and CAPCO in this regard.

It was noted that the rating of the cumulative air quality impacts, indicating moderate to high impacts, was a very conservative approach. Ms. Deidre Herbst indicated that it was indeed conservative, but that it was indicated as such in the report.

It was asked whether the SO₂ emissions only considered the emissions from the stacks but also from the increase in traffic. Ms. Deidre Herbst said it was predominantly focused on SO₂ emissions from the power station.

It was asked how the vegetation would be impacted by the emissions. Ms. Herbst indicated that the vegetation study found that it would have no significant impact on the vegetation and that the area was characterised by a low agricultural potential. Ms. Strong added that the soil was suitable for agriculture, but the agricultural potential was low due to the lack of water.

Mr. Des Sheppard asked whether the visual impact assessment made any recommendations with regards to the architecture of the power station. He asked whether it was e.g. indicated if the power station should be cladded or not. Ms. Herbst said the visual impact assessment specifically indicated that it would be preferable for the power station to be enclosed and that cladding was required.

In terms of the tourism study it was highlighted that the proposed project would benefit the overall tourism industry. It was, however, noted that tourists from different parts of the world view the power station in a different light.

It was asked where the noise measurements were taken. Ms. Strong indicated that it was taken at various points, but the noise impacts of all sites considered were looked at. The details are included in the draft EIR.

In terms of the traffic impact assessment the main concerns focused on the road between Vaalwater and Nylstroom (Modimolle). Eskom undertook to initiate discussions in this regard with the Lephalale Municipality and other relevant government departments.

Mr. Des Sheppard noted that in terms of the social impacts the main concerns were usually with regards to the influx of outsiders to the area. This could have negative impacts in terms of the capacity of the local police force and in terms of accommodation. Mr. Willem Laenen said there were plans to increase the accommodation facilities in the area. Further indications are that almost half of the lower skilled level of labour required could be sourced from Seleka and that the existing transportation facilities would be able to accommodate these workers. As a last resort Eskom would construct a construction camp near the proposed new power station. One should, however, take into account that the landowners in the area are opposed to that.

Mr. Des Sheppard added that the Eskom single quarters are used at the moment and would also not be available. Ms. Deidre Herbst said that the old construction camp sites that were demolished could also be used but that the property belongs to Kumba Resources and Eskom would have to negotiate this with them.

Ms. Herbst said that in terms of the security concerns associated with an influx of outsiders to the area, it was indicated that there was a current structure interacting with the local SAPS that Eskom could link into.

Mr. Des Sheppard asked what the envisaged timeframes for the project were. Ms. Herbst said Eskom expected a Record of Decision (RoD) with regards to the EIA from DEAT during July where after the final decisions with regards to the project could be made. The aim was to start with site preparation by the end of 2006 and that the first unit should be operational by 2010. The second half of Eskom's pre-feasibility studies was to be approved by December 2006. Mr. Tony Stott added that the official Eskom stance was to investigate alternative sites in three areas for new coal-

fired power stations, namely the Lephalale area, and areas near Sasolburg and Kendal. Due to the growth in the demand for electricity, Eskom believe that they actually need all three power stations, although the timing of when these would be built was still to be decided. The EIA's for the other two power stations have been initiated. By 2024 Eskom need to add another 20 000 MW to the grid. Mr. Des Sheppard added that, as the existing Matimba Power Station was a national key point, there was a Joint Planning Committee who met once every two months. Mr. Willem Laenen indicated that he would follow up on this issue.

It was indicated that there was a great need for skills development amongst the communities in the area. Mr. Tony Stott indicated that they would discuss this further with the representatives of the Eskom Development Foundation and would also liaise with Mr. Adam Bogoshi in this regard.

4. CLOSURE

Ms. Ashlea Strong indicated that the draft Environmental Impact Assessment Reports (EIR) were available at the following locations for review until 28 April 2006:

- Lephalale Municipal offices (Corner of Joe Slovo and Douwater Streets)
- Lephalale Library (Corner of Joe Slovo and Douwater Streets)
- Eskom Matimba Power Station
- Co-op Lephalale (Offices of Lephalale District Agricultural Union - Botha Avenue)
- Marapong Clinic (Tlou Street, Marapong)
- Offices of Bohlweki Environmental (Kyalami Office Park, Kyalami)
- www.bohlweki.co.za

She indicated that a public meeting will be held at the Mogol Club on 29 March 2006 at 18:00 and invited the attendants to this public meeting.

Mr. Des Sheppard thanked the attendants for their inputs and closed the meeting at 14:00.

5. ATTENDANCE REGISTER

The attendance register is included in Appendix B.

Appendix A

Presentation



ENVIRONMENTAL IMPACT ASSESSMENT: PROPOSED ESTABLISHMENT OF A NEW COAL-FIRED POWER STATION IN THE LEPHALALE AREA, LIMPOPO PROVINCE

NEED FOR THE PROJECT

- The demand for electricity in South Africa has grown, on average, at more than 4% over the past few years, with a concomitant reduction in the surplus generating capacity.
- In terms of the National Integrated Resource Plan the NER have identified that RSA will require new base-load capacity by 2010
- The Eskom ISEP process identified the need for new coal-fired power stations as a preferred option for the provision of base-load generation capacity in the near future.
- Three potential areas identified for further investigation:
 - Kendal North (Witbank)
 - Vaal South (Sasolburg)
 - Lephalale

BRIEF OVERVIEW OF PROJECT

- Establishment of a new coal-fired power station on a technically feasible site in the Lephalale area of the Limpopo Province.
- To operate at an installed capacity of approximately 4 800 MW (2 100 MW initially, potential expansion to 4 800 MW in the long-term).
- Approximate footprint of 700 ha for the Power Plant and an additional 500 - 1000 ha for ancillary services, including ashing facilities

BRIEF OVERVIEW OF PROJECT

- Power Station will utilise a range of technologies pertaining to cooling, combustion and pollution abatement.
- Environmental Studies undertaken assist in determining the most appropriate technology options to be implemented.
- Due to the limited water availability in the Lephalale area, the power station will utilise direct dry-cooling technology.
- Dry-cooled station would utilise approximately <0,2 litres of water per unit sent out.

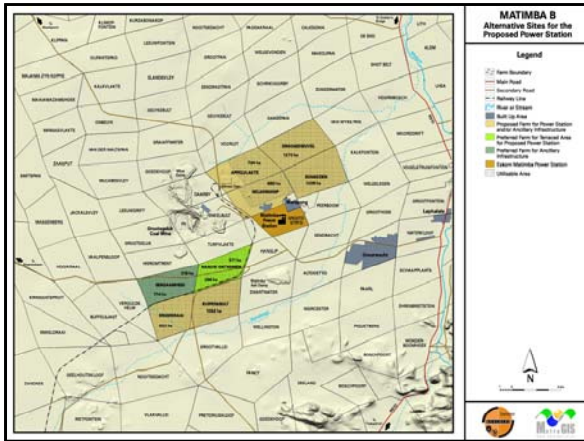
POWER STATION ALTERNATIVES

- **Do Nothing alternative:**
 - Electricity demands not being met.
 - Economic impact on RSA
 - Rejected as a feasible alternative
- **New Coal-fired Power Station alternatives:**
 - Regional and local site alternatives identified by Eskom through high level decision making.
 - It was concluded that there was the potential to establish a new power station in close proximity to the existing Matimba Power Station.

LOCATION ALTERNATIVES

- **8 Farm sites within Lephalale evaluated within the Environmental Scoping Study:**

• Appelvlaakte	Zongezien
• Nelsonskop	Kromdraai
• Nauwontkomen	Droogeheuvel
• Eenzaamheid	Kuipersbult
- **Nauwontkomen 509 LQ and Eenzaamheid 687 LQ, nominated for detailed investigation within the Environmental Impact Assessment.**



ROAD AND CONVEYOR BELT ALTERNATIVES

- **Road Re-alignment:**
 - Need to realign the Steenbokpan road.
 - Two alternatives identified and evaluated.
 - Northern Alternative
 - Southern Alternative
- **Conveyor Belt Alternatives:**
 - Two conveyor belt alignments were identified.
 - Eastern Alternative
 - Western Alternative

ROAD AND CONVEYOR BELT ALTERNATIVES



TECHNOLOGY ALTERNATIVES

- **Cooling Alternatives**
 - Dry cooling
- **Combustion alternatives**
 - Pulverised Fuel
- **Ash Disposal Alternatives:**
 - Ash Dumps (Disposal to land)
 - Ashing back into pit at Grootgeluk mine
- **Emissions Control Technologies**
 - For particulate emissions, Sox and NOx

OVERVIEW OF THE EIA PROCESS

- **Phase 1: Environmental Scoping Study**
 - Evaluation of Environmental Issues
 - Public consultation
 - Recommendations regarding preferred alternatives
- **Phase 2: EIA**
 - Detailed studies for Nominated Alternatives
 - Public consultation process
 - Final conclusions & recommendations

PUBLIC PARTICIPATION

- **Public participation**
 - Public meetings & key stakeholder workshops
 - Focus Group Meetings
 - One-on-one consultation
 - Telephonic consultation
 - Media

ASSESSMENT OF IMPACTS ...Overall Benefits

- Will assist in meeting the expected base-load electricity demand in the short-term
- Indirect benefits
 - Increased Eskom capacity to provide reliable electricity supply to existing facilities during peak times
 - Economic benefits for RSA

ASSESSMENT OF IMPACTS ...Water Resources

- No artesian boreholes located within the study area and no large-scale abstraction of groundwater occurs.
- The study area falls within the Mogol River Catchment, which drains into the Limpopo River.
- The main water users in the area include agriculture, industry, mining, power generation and domestic activities.
- A potential impact on water supply was identified.
- Groundwater was found to be impacted by the existing power station however due to the nature of the groundwater resource the impact is not significant.
- Mitigation and management measures will decrease the impact of the power station on surface and ground water resources.

ASSESSMENT OF IMPACTS ...Water Resources

- Mitigation measures include:
 - Monitoring groundwater quality and water levels
 - Correctly designing and constructing the facility
 - Installing the correct surface water controls
- Water Supply:
 - DWAF studies underway
 - Some studies are nearing completion
 - Potential Water augmentation alternatives:
 - Augmentation from Crocodile West Catchment (45 Million cubic meter per annum available supply)
 - Raising the Mokolo Dam Wall
 - Development of borehole fields

ASSESSMENT OF IMPACTS ...Fauna and Flora

- Potential impacts on the fauna and flora can be expected with the proposed power station and ancillary infrastructure.
- The study falls within the Savanna biome.
- Impacts of significance:
 - Destruction of natural habitat
 - Destruction of protect species and associated habitat
- Detailed studies showed habitat to be of medium sensitivity and well represented therefore no fatal flaws
- Protected species are also well represented and mitigation measures will limit the impact.

ASSESSMENT OF IMPACTS ...Fauna and Flora

- Mitigation Measures include:
 - Remove, relocate and protect as many of the protected species as possible
 - Contain all construction and operational activities within specified areas
 - Utilise trees for effective screening
 - Develop and implement an alien control and monitoring programme

ASSESSMENT OF IMPACTS ... Air Quality

- Current legislation (AQA) provides interim limiting concentrations for a range of pollutants, however, the National Framework and proposed standards have not yet been compiled.
- In particular, the national standards for the monitoring of compliance have not yet been compiled.
- In light of the lack of certainty a conservative approach has been adopted for this air quality assessment.

ASSESSMENT OF IMPACTS

... Air Quality

- Cumulative impacts were considered. The following sources were highlighted:
 - Matimba Power Station
 - Brickworks at Hanglip
 - Grootegeluk Mine
 - Household fuel combustion
 - Veld fires
 - Sewage Works
 - Wind blown dust
 - Vehicle exhausts
- Ambient NOx and particulate concentrations are not predicted to exceed current standards.

ASSESSMENT OF IMPACTS

... Air Quality

- Exceedances of interim SA standards are predicted for SO₂.
- Health risks as a result of exposure to SO₂ and Heavy Metals were assessed.
 - This study assumed, that all areas beyond the boundary of the site, were impacted by the maximum possible exposures to heavy metals (i.e. 24 hours per day over a 70 year lifetime).
 - Cancer risk as a result of heavy metals was found to be very low.
 - SO₂ Concentrations occurring as a result of the cumulative impact of two power stations are predicted to be associated with moderate to high health risks.
 - Moderate to high health risks refer to the potential of significant numbers of people being exposed to concentrations that could cause respiratory ailments such as asthma and chronic bronchitis. The effect of these concentrations can also result in serious impacts on those predisposed to respiratory ailments.

ASSESSMENT OF IMPACTS

...Emission Control Technologies

- In the event that control technologies are required for for SO₂, possible technologies could include:
 - Wet or Dry Flue Gas Desulphurisation
- Negative impacts as a result of FGD:
 - Decreased efficiency resulting in an increase in the use of natural resources
 - Air quality - increased greenhouse gases and heavy metals
 - Increased water use (double that required for dry cooling)
 - Waste
 - Visual impacts - wet plume from stacks
 - Need for Sorbent material such as lime or lime stone and the associated mining impacts
 - Transport issues as a result of the need for sorbent
- The implementation of FGD would result in an additional capital expenditure of 6 - 10 % as well as additional operational costs (i.e. approximately R3 - R5 Billion)

ASSESSMENT OF IMPACTS

...Visual

- Visual quality of study area altered by industrial development
- Mitigation required:
 - Sensitive placement of light fixtures
 - Fitment of covers and shields designed to contain rather than spread light
 - Use of vegetation for screening - localised mitigation
 - Maintenance of facility and associated infrastructure to prevent visual impact of degradation

ASSESSMENT OF IMPACTS

...Tourism

- Tourism types identified in the study are include business, leisure (hunting and ecotourism) and passing trade.
- It is anticipated that the business tourism sector will be positively impacted.
- The leisure sector is anticipated to be negatively impacted by a small degree.

ASSESSMENT OF IMPACTS

...Heritage Sites

- Impacts on cultural and historical sites are likely to be of low significance.
- Potential impacts may occur during construction and recommendations to minimise these impacts must be included in the EMP.
- Mitigation measures include:
 - Avoid cemeteries, if this is not possible ensure that the correct procedures are implemented with regards to the the relocation of graves
 - Report any exposed sites immediately to a museum (preferably one with an archaeologist)

ASSESSMENT OF IMPACTS

...Noise

- Potential Noise impacts have been identified with the construction and operation phases of the project.
- Existing ambient noise level in study area ranges from 36.2 - 56.4 dBA during the day and from 35.1 - 56.1 dBA at night.
- Noise assessment undertaken in accordance with requirements of SANS 10103
- SA Noise Regulations indicate an increase in ambient noise level of more than 7 dBA to be a "disturbing noise"
- Impact of construction noise anticipated to be low to negligible
- Various construction and operational mitigation measures have been recommended.

ASSESSMENT OF IMPACTS

...Traffic

- Potential impacts are associated with the construction phase of the project.
- Potential impacts:
 - Transportation of components during construction
 - Traffic associated with employees during construction and operation
- Assessed as being of moderate significance

ASSESSMENT OF IMPACTS

...Geology, Soils and Agricultural Potential

- Sediments and volcanics of the Waterberg Group and Karoo Supergroup underlie the study area.
- The Daarby and Eenzaamheid faults traverse the study area
- Both sites identified for the construction of the power Station are acceptable for development in terms of founding conditions.
- Detailed studies showed soils to be of a sandy nature with moderate to low agricultural potential.
- Impact on agricultural potential is indicated to be of low significance.

ASSESSMENT OF IMPACTS

...Social

- A number of potential social impacts associated with the project have been identified.
- Issues include safety and security, land value, air quality and pollution, job creation, influx of external labour and job seekers.
- Mitigation required:
 - Make use of local labour, where possible
 - Involve local communities in identification of labour pool
 - On-going communication with communities

OVERALL CONCLUSION

- Northern Road alternative preferred.
- Eastern Conveyor alternative preferred.
- No environmental fatal flaws, provided the recommended management and mitigation measures are implemented
- Both sites considered to be acceptable from an environmental perspective

OVERALL RECOMMENDATION

- Findings of EIA must be included in an EMP:
 - Consider construction and operation of the power station and associated infrastructure
 - Used to ensure compliance with environmental specifications and management measures
- Process of communication and consultation with community representatives to be on-going.
- The issues raised regarding air quality and water use and potential pollution should be considered by DWAF and DEAT in the respective application for licenses.

THE WAY FORWARD

- Review period for draft EIA:
 - 23 March 2006 - 28 April 2006
- Comments received from the public during review period will be incorporated into final EIA Report
- Submit Final EIA to DEAT
- Authority review and decision-making
- Receive Record of Decision
- Inform all registered I&APs and stakeholders of decision

Direct all comments or queries to:

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DISCUSSION



Appendix B

Attendance Register

ATTENDANCE REGISTER

EIA for the Proposed Establishment of a new Coal-fired Power Station in the Lephalale Area, Limpopo Province

Meeting with Eskom Matimba held at the Matimba Lapa

29 March 2006 at 13:00

Title	Name	Surname	Company/Organisation	Position/Directorate	Postal Address	Contact details	
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	Deidre	Herbst	Eskom generation	Env.Manager		Tel:	Fax:
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