ENVIRONMENTAL IMPACT ASSESSMENT – ENVIRONMENTAL IMPACT ASSESSMENT PHASE

PROPOSED ESTABLISHMENT OF THE PUMPED STORAGE SCHEME AND ASSOCIATED INFRASTRUCTURE IN STEELPOORT AREA, LIMPOPO AND MPUMALANGA PROVINCES

FINAL MINUTES OF THE KEY STAKEHOLDER WORKSHOP

HELD ON
FRIDAY 11 MAY 2007
AT 11H00
AT
ESKOM CONVENTION CENTRE
MIDRAND

Eskom
ENQUIRIES

Public Participation Process

Ms Sibongile Gumbi
Bohlweki Environmental
PO Box 867, Gallo Manor, 2052
Tel.: (011) 798 6000
Fax: (011) 798 6010
E-mail: steelpoortpss@bohlweki.co.za

Ms Prashika Reddy
Bohlweki Environmental
PO Box 867, Gallo Manor, 2052
Tel.: (011) 798 6000
Fax: (011) 798 6010
E-mail: steelpoortpss@bohlweki.co.za

Environmental Impact Assessment

Greg Seymour
Bohlweki Environmental
PO Box 867, Gallo Manor, 2052
Tel.: (011) 798 6000
Fax: (011) 798 6010
E-mail: gregs@bohlweki.co.za

Prashika Reddy
Bohlweki Environmental
PO Box 867, Gallo Manor, 2052
Tel.: (011) 798 6000
Fax: (011) 798 6010
E-mail: prashikar@bohlweki.co.za

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 Sibongile Gumbi at the address given above by not later than 4 July 2007. Please note however that the minutes are not verbatim.
# TABLE OF CONTENTS

1. PURPOSE OF THE MEETING................................................................................................. 1

2. RATIONALE AND BACKGROUND TO THE PROPOSED PROJECT ................................. 1

3. PUMPED STORAGE TECHNOLOGY ............................................................................ 1

4. ENVIRONMENTAL STUDY REQUIREMENTS ............................................................. 2

5. EIA PROCESS FOR PROPOSED PROJECT ............................................................... 2

6. WHY ARE ENVIRONMENTAL STUDIES NEEDED?.................................................... 2

7. EIA PROCESS TO DATE ........................................................................................ 2

8. PUBLIC PARTICIPATION PROCESS ............................................................................. 3

8.1 PUBLIC PARTICIPATION PROCESS.......................................................................... 3

9. SITES INVESTIGATED .......................................................................................... 3

10. AIMS OF THE SCOPING PHASE .......................................................................... 3

11. AIMS OF THE EIA PHASE .................................................................................. 4

12. ASPECTS CONSIDERED IN THE EIA .................................................................... 4

13. ASSESSMENT OF IMPACTS .................................................................................. 4

14. OVERALL CONCLUSIONS AND RECOMMENDATIONS ........................................ 7

15. THE WAY FORWARD............................................................................................. 8
16. DISCUSSION SESSION........................................................................................................... 9

17. CLOSURE................................................................................................................................... 11

APPENDICES

APPENDIX A.................................................................................................................. ATTENDANCE REGISTER
APPENDIX B.............................................................................................................. PRESENTATION
MINUTES OF THE PRESENTATION  
FRIDAY, 11 MAY 2007  
KEY STAKEHOLDER WORKSHOP  
10H00

THE STRUCTURE OF THE MINUTES FOLLOWS THAT OF THE PRESENTATION

1. PURPOSE OF TODAY’S MEETING

• Provide Interested and Affected Parties (I&APs) and Key Stakeholders with information regarding the proposed Pumped Storage Scheme (PSS) in the Steelpoort area.
• Provide an overview of the Environmental Impact Assessment (EIA) & Public Participation Process (PPP) being followed for the proposed project.
• Provide an opportunity for key stakeholders and I&APs to seek clarity and provide input into the project.
• To record comments raised and include them in the final EIA Report.
• Interaction with the project team.

2. RATIONALE AND BACKGROUND TO THE PROPOSED PROJECT

• Eskom’s electricity generation capacity expansion was based on national policy and informed by on-going strategic planning undertaken by National Department of Minerals and Energy (DME), the National Energy Regulator of South Africa (NERSA) and Eskom.
• Integrated Strategic Electricity Planning (ISEP) identified the need for increased peaking supply by about 2006/7 and base load by about 2010.
• One way of achieving this is via pumped storage technology. The Braamhoek Scheme in the Drakensberg is one such scheme.
• The function of a PSS is to supply power during the time of peak demands and to ‘store’ surplus power during off-peak periods, which will be utilised later.

3. PUMPED STORAGE TECHNOLOGY

A typical PSS consists of:
• an upper and lower reservoir;
• an underground powerhouse complex;
• associated waterways linking reservoirs; and
• associated infrastructure including roads, communication masts, transmission lines, administration building, visitors’ centre and link yard.
4. ENVIRONMENTAL STUDY REQUIREMENTS

Application has been made under the new EIA Regulations. The primary triggers are (according to R386 and R387):

- The construction of facilities or infrastructure, including associated structures or infrastructure, for:
  - Activity 1(a) - the generation of electricity where –
    i) the electricity output is 20 megawatts or more; or
    ii) the elements of the facility cover a combined area in excess of 1 hectare;
  - Activity 1(g) the use, recycling, handling, treatment, storage or final disposal of hazardous waste;
  - Activity 1(h) - the manufacturing, storage or testing of explosives, including ammunition;
  - Activity 1(n) - the transfer of 20 000 cubic metres or more water between water catchments or impoundments per day;
  - Activity 2 - any development activity, including associated structures and infrastructure, where the total area of the developed area is, or is intended to be, 20 hectares or more;
  - Activity 6 - the construction of a dam where the highest part of the dam wall, as measured from the outside toe of the wall to the highest part of the wall, is 5 metres or higher or where the high water mark of the dam covers an area of 10 hectares or more;
  - Activity 14 - the construction of masts of any material or type of any height, including those used for telecommunication broadcasting and also transmission.

5. EIA PROCESS FOR THE PROJECT

- Phase 1: Environmental Scoping Study (ESS) including Screening Studies
- Phase 2: Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP)
- Public Participation Process – Ongoing throughout the EIA Process

6. WHY ARE ENVIRONMENTAL STUDIES NEEDED?

- Identify and assess potential environmental impacts (biophysical & social)
- Propose mitigation and management measures
- Authorisation from the National Department of Environmental Affairs and Tourism (NDEAT)
- Inform project planning process

7. EIA PROCESS TO DATE

- EIA Process
- Application
- Environmental Scoping Study
- Plan of Study for EIA
8. PUBLIC PARTICIPATION PROCESS

- What is PPP?
  - A tool to inform I&APs of a proposed project.
  - A tool to help integrate the comments of the I&APs into the relevant phases of a proposed project.
- What PPP is Not?
  - Not a Public Relations exercise
  - Not a means to satisfy grievances – rather to record comments

8.1. PUBLIC PARTICIPATION PROCESS TO DATE

- Approval of Final Scoping Report and Plan of Study for EIA
- Draft Environmental Impact Report for Public Review
- Focus Group Meetings
- Public Meetings
- Notify I&APs of Record of Decision

9. SITES INVESTIGATED

- Three alternative sites were investigated during the ESS
- The ESS has nominated a preferred site for further detailed investigation in the EIA phase

10. AIMS OF THE SCOPING PHASE

- Identify and evaluate potentially significant environmental impacts (both positive and negative impacts)
- Validate Environmental Screening Report
- Evaluate site alternatives
- Public Participation
  - Inform the public of the proposed project
  - Opportunity to raise concerns about and provide input into the project
- Nomination of a preferred site for further investigation in the EIA phase (environmental, economic and technical issues account).
- Make recommendations regarding studies required within the detailed EIA.
11. AIMS OF EIA PHASE

- Rating of Significant Impacts
- Public Participation
- EIA consider the impacts throughout the entire project life cycle e.g.

- Recommendations regarding mitigation and management of significant impacts
- Draft Environmental Management Plan

12. ASPECTS CONSIDERED IN THE EIA

- Biophysical Aspects
  - Geology
  - Soils and Agricultural potential
  - Geohydrology
  - Surface Water and drainage
  - Wetlands
  - Biodiversity

- Social Aspects
  - Archaeology and Heritage
  - Visual
  - Noise
  - Social
  - Traffic
  - Tourism

13. ASSESSMENT OF IMPACTS

**GEOLOGY**

- Very good rock conditions for underground works
- Construction materials available within the dam basin
- Clay material for the lower dam core is available in close proximity
- Steelpoort Fault does not impact the site
- No fatal flaws were discovered
- Further investigations will be required
SOIL AND AGRICULTURAL POTENTIAL

- Reservoir sites consist of shallow soils with deeper alluvial soils
- No areas with high agricultural potential occur within reservoir sites
- Additional Roads are already existing routes
- Impacts on soils and agricultural potential is low
- Construction villages & temporary developments – land rehabilitated

GEOHYDROLOGY (GROUND WATER)

- Study area is classified as minor-aquifer system due to rock complex
- Therefore no large scale groundwater abstraction occurs
- Intercepting water bearing fractures considered as a short-term negative impact
- Grouting these structures will prevent long-term impacts
- The medium negative impact will be reduced to a very low negative impact with appropriate mitigation

SURFACE WATER AND DRAINAGE

- The study has found no fatal flaws
- Negative impacts – construction
- burrowing, housing, sewage, and water abstraction
- Impacts are localised
- Impacts can all successfully be mitigated
- The high negative impact can be reduced to a medium negative impact with appropriate mitigation

WETLANDS

- No wetlands occur within the footprint
- Therefore no loss of physical wetland habitat
- Indirect positive benefit on wetlands in the upper catchment - Sehlakwane
- If wetlands and associated buffers are not affected the impact will be very low

BIODIVERSITY

- Impacts - transformation of large tracts of natural and sensitive environment
- Although cannot be mitigated effectively - Impacts are localised and site specific & contained within a relatively small area
- Constant environmental monitoring
- Periodic bio-monitoring - invasive species
- Appropriate mitigation measures reduce high negative impact - low medium impact
**ARCHAEOLOGICAL & HERITAGE RESOURCES**

- Sites dating to the Late Iron Age, Early Historic Period were identified
- Current legislation allows for mitigation measures.
- Impacts lessened by:
  - Rerouting/relocating of access routes, construction yards, etc.
  - Formalising sites by fencing them off
  - Excavation and mapping of sites.
- Development can continue, if the mitigation measures for each identified site are implemented

**VISUAL**

- The escarpment-like topography - very high visual quality
- The visual impact adverse, the significance very high-medium
  - Localised and associated with proximity to the site
- Lighting - important visual impact (construction)
  - Design specific mitigation measures
- Visual impacts associated with the project are unavoidable - No fatal flaw
- Appropriate mitigation measures reduce high negative impact - medium negative impact

**NOISE**

- Acceptable construction related noise impacts are expected
- Operational noise impact - fairly small
- Any impacts - contained within 300m of the PSS
- No operational noise impacts at Sehlakwane Village
- Additional noise from traffic will be insignificant
- Supported from a noise perspective

**SOCIAL**

- Operational & Construction phases have positive impacts
- These relate to sustainable development-
  - employment opportunities (directly and indirectly)
  - infrastructure development
- Enhanced direct employment opportunities
  - transparent recruitment process
  - enable all unskilled labour to have an equal opportunity of employment
- Negative impacts - construction/decommissioning phases
- Negative impacts can be mitigated successfully
- Intra-conflict
  - Forum meetings contractors & construction worker-address issues and concerns pro-actively.
Consider the use of a uniformed salary structure whilst construction workers are on site

- Inter-conflict:
  - Transparent recruitment process takes place
  - Local trade unions, to enhance the recruitment process

- Construction villages location is appropriate

- Increased social problems (construction site) controlled:
  - HIV/AIDS awareness campaign
  - Controlled Access

- Safety hazards of water - PSS fenced and access controlled

- Local economic investment - use of the local facilities

- Sustainable local economic development
  - Enhance the positive impact by encouraging installation employees to make use of and employ local community members in their households

- The positive impacts of the project outweigh the negative social impacts

**TRAFFIC**

Transport of components, the construction traffic and operational traffic - medium negative impact.

- Medium impact a low weighting
- Benefits far outweigh the considered Low impact of the transport/traffic
- Supported from a traffic and transport perspective
- Mitigation measures reduce the overall impact to a Low Medium negative impact

**TOURISM**

- Negative impacts: to loss of sense of place-
  - construction
  - lesser extent - operational phase
- Greatest negative impact on - game reserves construction camp and the construction traffic
- Overall impact - positive during construction and operation - increased business tourism

**14. OVERALL CONCLUSIONS AND RECOMMENDATIONS**

- Positive and negative impacts were identified.
- No environmental fatal flaws were identified.
- Supported from an environmental perspective.
- All impacts can be adequately mitigated.
- A draft Environmental Management Plan (EMP) has been compiled and released for public review.
- EMP details mitigation and management measures - environmental issues during construction and operation.
<table>
<thead>
<tr>
<th>POTENTIAL IMPACT</th>
<th>SIGNIFICANCE</th>
<th>SIGNIFICANCE After Mitigation</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geology</td>
<td>Low</td>
<td>Negligible</td>
<td>Negative</td>
</tr>
<tr>
<td>Soils and Agricultural Potential</td>
<td>Low</td>
<td>Negligible</td>
<td>Negative</td>
</tr>
<tr>
<td>Geohydrology</td>
<td>Low</td>
<td>Low</td>
<td>Negative</td>
</tr>
<tr>
<td>Surface Water and Drainage</td>
<td>Medium</td>
<td>Low</td>
<td>Negative</td>
</tr>
<tr>
<td>Wetlands</td>
<td>Low</td>
<td>Low</td>
<td>Negative</td>
</tr>
<tr>
<td>Biodiversity</td>
<td>High</td>
<td>Medium/Low</td>
<td>Negative</td>
</tr>
<tr>
<td>Archaeological and Heritage</td>
<td>High</td>
<td>High</td>
<td>Negative</td>
</tr>
<tr>
<td>Visual/Aesthetic</td>
<td>High</td>
<td>Medium</td>
<td>Negative</td>
</tr>
<tr>
<td>Noise</td>
<td>Medium</td>
<td>Low</td>
<td>Negative</td>
</tr>
<tr>
<td>Socio-economic</td>
<td>Medium</td>
<td>Low</td>
<td>Negative</td>
</tr>
<tr>
<td>Traffic</td>
<td>Medium</td>
<td>Low/Medium</td>
<td>Negative</td>
</tr>
<tr>
<td>Tourism</td>
<td>Low</td>
<td>Low</td>
<td>Negative</td>
</tr>
<tr>
<td>Geohydrology</td>
<td>Low</td>
<td>Negative</td>
<td>Positive</td>
</tr>
<tr>
<td>Surface Water and Drainage</td>
<td>Medium</td>
<td>Low</td>
<td>Negative</td>
</tr>
<tr>
<td>Wetlands</td>
<td>Medium</td>
<td>Low</td>
<td>Negative</td>
</tr>
<tr>
<td>Visual/Aesthetic</td>
<td>High</td>
<td>Medium</td>
<td>Negative</td>
</tr>
<tr>
<td>Noise</td>
<td>Medium</td>
<td>Low</td>
<td>Negative</td>
</tr>
<tr>
<td>Social</td>
<td>Low</td>
<td>Medium Positive</td>
<td>Positive</td>
</tr>
<tr>
<td>Traffic</td>
<td>Medium</td>
<td>Low</td>
<td>Negative</td>
</tr>
<tr>
<td>Tourism</td>
<td>Negligible</td>
<td>Low</td>
<td>Positive</td>
</tr>
</tbody>
</table>

### 15. THE WAY FORWARD

- Compilation and distribution of minutes
- Inclusion of I&AP comments in Final Environmental Impact Report
- Submission of Final Environmental Impact Report to National & Provincial Authorities
- Authority review
- Environmental Authorisation
- Notify I&APs of Decision
- Appeal Period
16. DISCUSSION SESSION

1. Mr Mike Yorke-Haet, SANRAL, what routes are envisaged to be used for transporting of construction machinery?

Mr Thigesh Velen, Eskom, replied that imported equipment will be transported from either Richards Bay or Durban harbours. The route selection from the either harbours shall be determined by a Heavy Duty Loads specialist. It is assumed that heavy equipment will be transported to the lower site via the R555.

2. Mr Mike Yorke-Haet, how will the R39 be affected by the transportation of construction material and heavy equipment?

Mr Thigesh Velen, replied that the road in question can accommodate heavy loading up to 300 tons. The consultant who would map the route for the transportation of construction material and heavy equipment will take this into consideration.

Deidre Herbst, Eskom Generation, added that there would be infrequent transportation of abnormal loads.

Greg Seymour, Bohlweki Environmental, also added that the traffic study (undertaken for the EIA purposes) only focused on two road alternatives, but these would be for access between the upper and lower reservoirs.

3. Mr. Mark Brausler, enquired about the timing and the supply of water from the De Hoop Dam to the lower reservoir of the PSS.

Sanet van Jaarsveld, DWAF, responded that the DWAF MANCO will decide on the supply of water to the scheme and that the timeframes will be aligned.

4. Mr. Mark Brausler, questioned the 3% of available water that Eskom will be taking from the De Hoop Dam.

Sanet van Jaarsveld, responded that DWAF and Eskom would reach a common understanding and potentially enter into the Memorandum of Understanding.

5. Mr. Mark Brausler, why does the project need an upper and lower dam?

Mr Thigesh Velen, explained the technology and operation of a Pumped-Storage Scheme, and explained why the nominated site was the appropriate site for the scheme. In his explanation, he explained how Sites B & C were rejected due to the Steelpoort Fault extending along the both sites.

6. Mr. Mark Brausler, had a concern about the roads being in poor state and accommodation during construction and suggested that there is a need to mobilise government resources.

Mr Thigesh Velen, explained that certain sections of the R579 and R555 are in a poor condition and that Eskom will engage in discussions with the Provincial Roads Authority to address this concern. The resolutions from such an engagement process will advise the departments’ expectations from users of their responsibilities herein. Mr Velen also commented that these roads will not be used excessively and will mostly be used for transporting construction staff once or twice a week to the Lower Reservoir.
7. Mr. Mark Brausler, explained that there has been a lot of debate around accommodation issues in Roossenekal, as Roossenekal will house construction workers for both the De Hoop Dam Scheme and the PSS. Mr Brausler questioned how the project team will deal with the social conflict arising from this situation.

Mr Thigesh Velen, Eskom will provide accommodation for 70 senior or skilled staff at the upper site. The current plan it to build units which will be permanent structures and possibly handed over to the community at project completion. At the lower site, approximately 2500 people will be accommodated in temporary housing within a construction village. The units developed by DWAF, at Roosnekal, may be occupied by the contractor if he deems necessary.

8. Mr. Mark Brausler, what is the capacity of this scheme?  
Mr Thigesh Velen, responded that the scheme has potential generation capacity of approximately 1520 MW. Each reservoir is capable of storing an operating volume of approximately 16 million m$^3$ of water and is capable of providing 14 hours of continuous generation when the upper reservoir is full.

9. Mr. Mark Brausler, what are the timeframes of the project?  
Mr Thigesh Velen, the advanced infrastructure such roads, cable and main access tunnels are expected to start early next year (2008) and the construction of the main underground works is expected to start in July 2008 and be completed in 2014.

10. Mr Nik Lesufi, Chamber of Mines, enquired about the impacts the project would have on heritage sites that would be lost and the spiritual value attached to these sites.  
Greg Seymour, explained that Mr Johnny van Schalkwyk of the National Museum conducted the heritage specialist studies for the project. One or two archaeological sites have been identified in the vicinity of the lower reservoir, but these structures can be relocated. All details are available in the report. [Post meeting note: After the meeting, Mr Greg Seymour discussed the report with Mr Nik Lesufi, to Mr Lesufi’s satisfaction].

11. Mr Nik Lesufi, pointed out that the decommissioning phase of the project has not been elaborated on.  
Mr Thigesh Velen, explained that the project would have a lifespan of approximately 35 years. Mr Velen also commented that there is no so-called “terminal life span” of the project.

12. Mr Malcolm Shang, Prime Resources Environmental Consultants, would the dam affect water usage?  
Mr Greg Seymour, responded that the dams are off-channel dams. The lower reservoir is built on a tributary of the Steelpoort river and would therefore be low impact on downstream users.

13. Mr Mike Yorke-Haet, is the Mpumalanga Province, Department of Roads involved in the project?  
Mr Greg Seymour, indicated that the Mpumalanga Department of Agriculture and Land Administration (MDALA) have been consulted from the onset of the EIA process. The Roads
Department would be engaged in a parallel process, by Eskom, where the focus would be on the usage of the roads for transportation of construction machinery by Eskom.

17. CLOSURE

After an opportunity was given for any further comments or issues, with none being raised, Mr. Greg Seymour thanked everyone for their attendance and contributions. He further reminded all about the date of closure of comments period.

The meeting was concluded at 10h55.
APPENDIX A

ATTENDANCE RECORD
<table>
<thead>
<tr>
<th>Name</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Botewu, Tobile</td>
<td>Eskom Generation</td>
</tr>
<tr>
<td>Brouwer, Mark</td>
<td>Eskom Generation</td>
</tr>
<tr>
<td>Herbet, Deidre</td>
<td>Bohweli Environmental</td>
</tr>
<tr>
<td>Hlomuka, Sibongile</td>
<td>Chamber of Mines South Africa</td>
</tr>
<tr>
<td>Lesui, Nikie</td>
<td>Eskom Enterprise</td>
</tr>
<tr>
<td>Mazulane, Frans</td>
<td>Bohweli Environmental</td>
</tr>
<tr>
<td>Reddy, Prashia</td>
<td>Bohweli Environmental</td>
</tr>
<tr>
<td>Seymour, Greg</td>
<td>Prime Resource</td>
</tr>
<tr>
<td>Shang, Manzinh</td>
<td>DWAF</td>
</tr>
<tr>
<td>van Jaarsvold, Sanet</td>
<td>Eskom Generation</td>
</tr>
<tr>
<td>Velan, Thipesh</td>
<td>SANCRL</td>
</tr>
<tr>
<td>Yoke-Hart, Mike</td>
<td></td>
</tr>
<tr>
<td>Totals:</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX B

TECHNICAL PRESENTATION

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

**Purpose of Today's Meeting**
- Provide Interested and Affected Parties (I&APs) and Key Stakeholders with information regarding the proposed Steelport Pumped-Storage Scheme (SPSS)
- Provide an overview of the Environmental Impact Assessment (EIA) & Public Participation Process (PPP) being followed for the proposed project
- Provide an opportunity for key stakeholders and I&APs to seek clarity and provide input into the project
- To record comments raised and include them in the Final EIA Report
- Interaction with the project team

**Environmental Impact Assessment Process**

PROPOSED STEELPORT PUMPED STORAGE SCHEME IN LIMPOPO AND MPUMALANGA PROVINCES

**Purpose of the Proposed Project**

Eden's electricity generation capacity expansion was based on national policy and informed by on-going strategic planning undertaken by National Department of Minerals and Energy (DME), the National Energy Regulator of South Africa (NERSA) and Eden.

Integrated Strategic Electricity Planning (ISEP) identified the need for increased peaking supply by about 2006/7 and base load by about 2010.

One way of achieving this is via pumped storage technology. The Breamocks Scheme in the Drakensberg is one such scheme.

The function of a pumped storage scheme (PSS) is to supply power during the time of peak demands and to store surplus power during off-peak periods, which will be utilized later.

**Pumped Storage Technology**

Typical PSS scheme consists

- Upper and lower reservoir
- Underground powerhouse complex
- Associated waterways linking reservoirs and
- Associated infrastructure roads, transmission lines, admin building, visitors centre and linkway
ENVIRONMENTAL STUDY REQUIREMENTS

- 1(n) the transfer of 20,000 cubic metres or more water between water catchments or impoundments per day
- Any development activity, including associated structures and infrastructure, where the total area of the developed area is, or is intended to be, 20 hectares or more:
  - The construction of a dam where the highest part of the dam wall, as measured from the outside toe of the wall to the highest part of the wall, is 5 metres or higher or where the high water mark of the dam covers an area of 10 hectares or more:
  - The construction of masts of any material or type of any height, including those used for telecommunication broadcasting and also transmission

ENVIRONMENTAL STUDY REQUIREMENTS

- Application has been made under the new EIA Regulations. The primary triggers are (according to R386 and R387):
  - The construction of facilities or infrastructure, including associated structures or infrastructure, for:
    - the generation of electricity where:
      - the electricity output is 20 megawatts or more; or
      - the elements of the facility cover a combined area in excess of 1 hectare;
    - the use, recycling, handling, treatment, storage or final disposal of hazardous waste;
    - the manufacturing, storage or testing of explosives, including ammunition;

EIA PROCESS FOR THE PROJECT

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

Public Participation Process - Ongoing throughout the EIA Process

WHY ARE ENVIRONMENTAL STUDIES NEEDED?

- Identify and assess potential environmental impacts (biophysical & social)
- Propose mitigation & management measures
- Authorisation from the National Department of Environmental Affairs and Tourism (NDEAT)
- Inform project planning process

EIA PROCESS TO DATE

- Application
  - Environmental Scoping Study
  - Plan of Study for EIA
  - Environmental Impact Assessment
  - Record of Decision

- Public Participation Process
**PUBLIC PARTICIPATION PROCESS**

- **What is PPP?**
  - A tool to inform IAAPs of a proposed project.
  - A tool to help integrate the comments of the IAAPs into the relevant phases of a proposed project.
- **What PPP is Not?**
  - Not a Public Relations exercise
  - Not a means to satisfy grievances - rather to record comments

**SITES INVESTIGATED**

- Three alternative sites were investigated during the ESS.
- The ESS has nominated a preferred site for further detailed investigation in the EIA phase.

**PREFERRED SITE**

- Site A
- Located near the existing facilities.
- Accessible by road.

**ALERT OF SCOPING PHASE**

- Identified & evaluated potentially significant environmental impacts (both positive and negative impacts)
- Validate Environmental Screening Report
- Evaluate site alternatives.
- Public Participation
  - Inform the public of the proposed project
  - Opportunity to raise concerns about and provide input into the project

**ALERT OF SCOPING PHASE**

- Nomination of a preferred site (Site A) for further investigation in the EIA phase (environmental, economic and technical issues account).
- Make recommendations regarding studies required within the detailed EIA.
ASSESSMENT OF IMPACTS

Geology

- Very good rock conditions for underground works.
- Construction materials available within the dam basin.
- Clay material for the lower dam core is available in close proximity.
- Stress: Fault does not impact the site.
- No fatal flaws were discovered.
- Further investigations will be required.

ASSESSMENT OF IMPACTS

Soils & Agricultural Potential

- Reservoir sites consist of shallow soils with deeper alluvial soils.
- No areas with high agricultural potential occur within reservoir sites.
- Additional lands are already existing routes.
- Impacts on soils and agricultural potential is low.
- Construction villages & temporary developments - land rehabilitated.

ASSESSMENT OF IMPACTS

Ecology (Fish & Water)

- Study area is classified as minor-equieter system due to rock complex.
- Therefore no large scale groundwater abstraction occurs.
- Interscaping water bearing fractures considered as a short-term negative impact.
- Grounning these structures will prevent long-term impacts.
- The medium negative impact will be reduced to a very low negative impact with appropriate mitigation.

ASSESSMENT OF IMPACTS

Surface Water & Drainage

- The study has found no fatal flaws.
- Negative impacts – construction (burrowing, housing, sewage, and water abstraction).
- Impacts are localised.
- Impacts can all successfully be mitigated.
- The high negative impact can be reduced to a medium negative impact with appropriate mitigation.
- No wetlands occur within the footprint
- Therefore no loss of physical wetland habitat
- Indirect positive benefit on wetlands in the upper catchment, Seshilewane.
- If wetlands and associated buffers are not affected the impact will be very low.

- Impacts - transformation of large tracts of natural and sensitive environment
- Although cannot be mitigated effectively.
  - Impacts - localised and site specific & contained within a relatively small area.
- Constant environmental monitoring
- Periodic bio-monitoring - invasive species.
- Appropriate mitigation measures reduce high negative impact - low medium impact

- Sites dating to the Late Iron Age, Early Historic Period were identified
- Current legislation allows for mitigation measures.
- Impacts lessened by:
  - Rerouting/relocating of access routes, construction yards, etc.
  - Formalising sites by fencing them off
  - Excavation and mapping of sites.
- Development can continue, if the mitigation measures for each identified site are implemented

- The escarpment-like topography - very high visual quality.
- The visual impact adverse, the significance very high-medium.
  - Localised and associated with proximity to the site.
  - Lighting - important visual impact (construction)
  - Design specific mitigation measures.
- Visual impacts associated with the project are unavoidable, No fatal flaw
  - Appropriate mitigation measures reduce high negative impact - medium negative impact.

- Acceptable construction related noise impacts are expected.
- Operational noise impact - fairly small.
- Any impacts - contained within 300m of the FSS.
- No operational noise impacts at Seshilewane Village.
- Additional noise from traffic will be insignificant.
- Supported from a noise perspective.

- Operational & Construction phases have positive impacts,
  - These relate to sustainable development -
    - Employment opportunities (directly and indirectly)
    - Infrastructure development.
  - Enhanced direct employment opportunities
  - Transparent recruitment process.
  - Enable all unskilled labour to have an equal opportunity of employment.
- Negative impacts - construction/decommissioning phases.
- Negative impacts can be mitigated successfully.
**Assessment of Impacts - Social**

- Intra-conflict
  - Forum meetings contractors & construction workers - address issues and concerns pro-actively.
  - Consider the use of a uniformed salary structure whilst construction workers are on site.
- Inter-conflict:
  - Transparent recruitment process takes place.
  - Local trade unions, to enhance the recruitment process.
  - Construction villages location is appropriate
  - Increased social problems (construction site) controlled
  - HIV/AIDS awareness campaign
  - Controlled Access

**Assessment of Impacts - Safety**

- Safety hazards of water - PSS fenced and access controlled
- Local economic investment - use of the local facilities
- Sustainable local economic development
  - Enhance the positive impact by encouraging installation employees to make use of and employ local community members in their households
  - The positive impacts of the project outweigh the negative social impacts

**Assessment of Impacts - Traffic**

- Transport of components, the construction traffic and operational traffic - medium negative impact.
- Medium impact a low weighting.
- Benefits far outweigh the considered low impact of the transport/traffic.
- Supported from a traffic and transport perspective.
- Mitigation measures reduce the overall impact to a Low Medium negative impact

**Road Alternatives**

- Negative impacts: to loss of sense of place - construction
  - lesser extent - operational phase.
- Greatest negative impact on - game reserves construction camp and the construction traffic.
- Overall impact - positive during construction and operation - increased business tourism
OVERALL CONCLUSIONS AND RECOMMENDATIONS

- Positive and negative impacts were identified.
- No environmental fatal flaws were identified.
- Supported from an Environmental perspective.
- All impacts can be adequately mitigated.
- An Environmental Management Plan (EMP) has been compiled and released for public review.
- EMP details mitigation and management measures - environmental issues during construction and operation.

ASSESSMENT OF IMPACTS

<table>
<thead>
<tr>
<th>POTENTIAL IMPACT</th>
<th>SIGNIFICANCE</th>
<th>SIGNIFICANCE After Mitigation</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geology</td>
<td>Low</td>
<td>Negligible</td>
<td>Negligible</td>
</tr>
</tbody>
</table>
| Soil and Agricultural
  Function         | Low          | Negligible                    | Negligible |
| Hydrology        | Low          | Negligible                    | Negligible |
| Surface Water and
  Drainage        | Medium       | Low                            | Negligible |
| Meteorology      | Medium       | Low                            | Negligible |
| Noise/Amphitheater| High         | Medium                        | Negligible |
| Water            | Medium       | Low                            | Negligible |
| Ground Vibration | Medium       | Low                            | Negligible |
| Traffic          | Medium       | Low                            | Negligible |
| Tourism          | Medium       | Low                            | Negligible |

WAY FORWARD

- Compilation and distribution of minutes
- Inclusion of EAP comments in Final Environmental Impact Report
- Submission of Final Environmental Impact Report to National & Provincial Authorities
- Authority review
- Environmental Authorisation
- Notify EAP's of Decision
- Appeal Period

Thank You

Discussion Session

[Contact Information]

[Event Date and Venue]

[Additional Notes]