ENVIRONMENTAL IMPACT ASSESSMENT – EIA PHASE

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

FINAL MINUTES OF THE FOCUS GROUP MEETING WITH

CHIEF MAPHEPHA MAHLANGU 11

HELD ON
WEDNESDAY 25 APRIL 2007
ENKOSINI VILLAGE, MONSTERLOOS

Eskom
ENQUIRIES

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 Sibongile Hlomuka 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 ................................................................. 4

2. RATIONALE AND BACKGROUND TO THE PROPOSED PROJECT .......... 4

3. PUMPED STORAGE TECHNOLOGY .................................................... 4

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

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

6. WHY ARE ENVIRONMENTAL STUDIES NEEDED ................................ 5

7. EIA PROCES TO DATE .................................................................... 5

8. PUBLIC PARTICIPATION PROCESS .................................................. 5

8.1 PUBLIC PARTICIPATION PROCESS .................................................. 6

9. SITES INVESTIGATED ..................................................................... 6

10. AIMS OF THE SCOPING PHASE ..................................................... 6

11. AIMS OF THE EIA PHASE ............................................................. 6

12. ASPECTS CONSIDERED IN AN EIA ................................................. 7

13. OVERALL CONCLUSION AND RECOMMENDATIONS .................... 10

14. THE WAY FORWARD ..................................................................... 11

15. DISCUSSION SESSION .................................................................. 11
16. CLOSURE .................................................................................................................................12

APPENDICES

ATTENDANCE RECORD ........................................................................................................ Appendix A

PRESENTATION .................................................................................................................... Appendix B
MINUTES OF THE PRESENTATION
WEDSDAY, 25 April 2007
ENKOSINI VILLAGE, MONSTERLOOS
12H00

PURPOSE OF TODAY’S MEETING

• Provide Interested and Affected Parties (I&APs) and Key Stakeholders with information regarding the proposed Steelpoort 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

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 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

3. PUMPED STORAGE TECHNOLOGY

Typical PSS scheme consists of:
• Upper and lower reservoir
• Underground powerhouse complex
• Associated waterways linking reservoirs; and
• Associated infrastructure roads, transmission lines, admin 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:
• 1(a) 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.
• 1(g) The use, recycling, handling, treatment, storage or final disposal of hazardous waste;
• 1(h) the manufacturing, storage or testing of explosives, including ammunition,
• 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.

5. EIA PROCESS FOR THE PROJECT

• Phase 1: Environmental Scoping Study (ESS) including Screening Studies
• Phase 2: Environmental Impact Assessment (EIA)
• Phase 3: 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 & management measures
• Authorization 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
➢ Environmental Impact Assessment
➢ Record of Decision

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

➢ 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

• 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
• 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.

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

12.1 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 - 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**

- 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 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:
o HIV/AIDS awareness campaign
o Controlled Access
  ▪ Safety hazards of water - PSS fenced and access controlled
  ▪ Local economic investment - use of the local facilities
  ▪ Sustainable local economic development
o 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-
    o construction
    o 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

13. OVERALL CONCLUSION 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.
### POTENTIAL IMPACT

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<th>SIGNIFICANCE</th>
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<tr>
<td>Geology</td>
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<td>Negative</td>
</tr>
<tr>
<td>Soils and Agricultural Potential</td>
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<tr>
<td>Geohydrology</td>
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<td>Low</td>
<td>Negative</td>
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<tr>
<td>Surface Water and Drainage</td>
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<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>
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<td>Archaeological and Heritage</td>
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<td>Negative</td>
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<tr>
<td>Visual/Aesthetic</td>
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<tr>
<td>Tourism</td>
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<td>Low</td>
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#### 14. 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

#### 15. DISCUSSION SESSION

1. Mr. George Mahlangu, Traditional Council, enquired about the exact area where the dam is going to be built.
Mr. Greg Seymour, Bohlweki Environmental, showed him and the others on the map. [Post-
meeting note: It was agreed that Mr Frans Mapulane would take some of these members to
site, to show them the exact area to be utilised. Mr Mapulane would arrange with the Chief for
this site visit]

2. Mr. Noah Mahlangu, Council of Goshi Mahlangu, enquired whether the neighbouring
communities were informed about the project.
Mr. Gift Magangane, Bohlweki Environmental, responded that later that day there would be a
similar meeting with Chief Boy Mahlangu of the neighbouring village.

**16. CLOSURE**
After allowing some time for further issues to be debated or concerns to be raised, in vain, Mr.
Gift Magangane thanked everyone for their attendance and contributions.

The meeting was concluded at 14h00
APPENDIX A

ATTENDANCE RECORD
<table>
<thead>
<tr>
<th>Name</th>
<th>Company</th>
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<tr>
<td>Bokwe, Tobile</td>
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Totals:
APPENDIX B

TECHNICAL PRESENTATION

Gift Magangane
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

**Background Information to the Proposed Project**
Edison’s electricity generation capacity expansion was based on national policy and informed by on-going strategic planning undertakings by National Department of Minerals and Energy (DM&E), the National Energy Regulator of South Africa (NERSA) and Edison.

Integrated Strategic Electricity Planning (ISEP) identified the need for increased peaking supply by about 2006/07 and base load by about 2010.

One way of achieving this is via pumped storage technology. The Broomshock 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 utilised later.
**Pumped Storage Technology**

Droakensberg Pumped Storage Scheme

**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

**Application 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**

- **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**

- Diagram showing the preferred site with labels such as 'To Steep Point', 'Upper and Lower Reservoirs', and 'To Burrton'.

**Area 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

**Area 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.
- **Import:** Fault does not impact the site.
- No fatal flaws were discovered.
- Further investigations will be required.

**Soils & 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.

**Ecosystem & 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.

**Biophysical Aspects**
- Geology
- Soils and Agricultural potential
- Geology
- Surface Water and drainage
- Wetlands
- Biodiversity
- Social Aspects
  - Archaeology and Heritage
  - Visual
  - Noise
  - Social
  - Traffic
  - Tourism
- 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 100m 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/commissioning 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

- 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

ASSESSMENT OF IMPACTS

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.
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

- Construction

<table>
<thead>
<tr>
<th>POTENTIAL IMPACT</th>
<th>SIGNIFICANCE</th>
<th>SIGNIFICANCE After Mitigation</th>
<th>STATUS</th>
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<tbody>
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</tr>
<tr>
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</tr>
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ASSESSMENT OF IMPACTS

- Operational

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WAY FORWARD

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

Discussion Session