

**ENVIRONMENTAL IMPACT ASSESSMENT**

**FOR THE PROPOSED ISUNDU 765/400 KV SUB-STATION AND  
TURN-IN TRANSMISSION LINES (DEA EIA REF: 14/12/16/3/3/2/745;  
12/12/20/1397/AM2)**

**PROCEEDINGS OF PUBLIC MEETING**

**12 May 2014**

**VANS HOTEL, CATO RIDGE**

## **AGENDA**

<b>No</b>	<b>Item</b>	<b>Responsible</b>
1	Registration	All
2	Welcome and Introductions	All
3	Presentation	Environmental Assessment Practitioner – ACER
4	Discussion	All
5	Way Forward	Environmental Assessment Practitioner – ACER
6	Concluding Remarks	All
7	Closure	Environmental Assessment Practitioner – ACER

## 1. ATTENDANCE

An attendance register was completed by attendees (Annexure A).

Name	Organisation
Pieter Venter	Transnet Pipelines
Rob Ferguson	Private
Lize Shaw	Mondi
Dean Boswell	Natal Lion Park/Zoological Gardens
Siyamthanda Zuma	Rainbow Farms
Scott Johnson	Keystone Park Light Industrial Precinct
Adrian Knoetze	Rainbow Farms
Johan van Rooyen	Hillview Farm
Ben Hoffman	Grantley Farm
S.S Britz	Mkhambathini Municipality
Elaine Donaldson	Mkhambathini Municipality
Gary Hardman	Sub 710 V&D
Shannon Hoffman	African Bird of Prey Sanctuary/African Raptor Trust
Hennie Heyns	Aloe Wildlife Estate

## 2. INTRODUCTION

Mr Paul Scherzer, ACER (Africa) Environmental Consultants, facilitated the meeting. Participants were welcomed and briefed on housekeeping. The project team members and their roles were introduced as follows:

Name	Organisation	Role
Paul Scherzer	ACER	Environmental Assessment Practitioner
Charlene Weber	ACER	Public Participation Consultant
Annah Motalane	Eskom	Senior Environmental Advisor
Ed Bunge	Eskom	Network Planning
N. Timm	Eskom	Distribution Survey

## 3. PRESENTATION

### 3.1 Proposed Isundu Sub-station

The project forms part of Eskom's KZN Strengthening Programme. To meet growing demand and to improve service quality and reliability, Eskom needs to strengthen the transmission network by constructing a number of new transmission lines, linking the main generating facilities in Mpumalanga with demand centers in the KZN Midlands and the southern KZN region. In addition, the aim is to strengthen the supply between the KZN Midlands and Empangeni/Richards Bay by linking the proposed new Isundu Sub-station and the proposed Mbewu Sub-station (near Empangeni).

The proposed project will include the following infrastructure:

- 765/400 kV Isundu Sub-station.
  - The application area is 100 ha.
  - The final sub-station footprint will be approximately 60 ha.

- ❑ Transmission lines – currently planned to and from the sub-station.
  - 1 x 765 kV (authorised VSHA transmission line).
  - 2 x 400 kV double circuit transmission lines to the existing Hector-Ariadne transmission lines approximately 4 km away.
  - 2 x 400 kV Mbewu/Empangeni transmission lines (a separate environmental authorisation process).
  
- ❑ To cater for future demands, space is being allowed for the following additional transmission lines:
  - 1 x 765 kV or HVDC transmission line.
  - 3 x 400 kV transmission lines.

The preferred route for the 2 x 400 kV double circuit transmission lines from the proposed Isundu Sub-station to the existing Hector-Ariadne transmission lines is to follow the existing Georgedale-Mersey 275 kV lines as agreed during the VSHA EIA process.

The transmission line amendment is necessary as with the change in the proposed location of the sub-station from near Wartburg to Ashburton, a single 765 kV transmission line will need to be constructed in the authorised VSHA corridor rather than the 2 x 400 kV transmission lines previously authorised during the VSHA study.

A 400 kV transmission line has a tower-to-tower span of between 300 - 350 m. Tower height varies between 30 and 35 m and the conductors will have a minimum ground clearance of 8.1 m. These transmission lines require a servitude of 55 m for a single line and 110 m where they run in parallel, except if they go through forestry where the servitude increases to 131 m.

A 765 kV transmission line has a tower-to-tower span of between 400 - 500 m. Each tower is approximately 50 - 55 m high and the conductors have a minimum ground clearance of 10.5 m. This transmission line will have a servitude of 80 m.

### **3.2 Substation Layout Alternatives**

Currently there are two site layout alternatives being considered. Alternative 1 has the 400 kV transmission line bays facing the road, whilst Alternative 2 has the 400 kV transmission bays perpendicular to the road. The advantage of Alternative 2 is that it will probably allow the 400 kV transmission lines to exit the sub-station without needing to immediately cross over to the southern side of the road.

### **3.3 EIA Process and Current Status**

Mr Scherzer provided a review of the steps of the EIA process and highlighted that the process was currently nearing the end of the scoping phase.

The aim of the draft Scoping Report currently available for public review is to ensure that all the key issues of concern have been correctly identified and to focus and tailor the specialist studies to address each issue.

### **3.4 Issues to be investigated**

Eight key issues have been identified and formulated as questions. These were outlined and explained, as summarized hereunder.

- ❑ Potential positive and negative economic and socio-economic impacts.  
Positive impacts associated with the sub-station will include the improved reliability and quality of electrical supply to KZN. In addition, during construction there will be temporary employment opportunities created.

Negative economic impacts may occur on some of the surrounding developments, which need to be investigated.

- ❑ Potential impacts on natural fauna and flora.  
The sub-station when fully developed will require approximately 60 ha and the potential loss of habitat for fauna and or flora/grassland species needs to be considered in the context of the surrounding environment and conservation targets.

- ❑ Potential impact upon existing and developing tourism land use plans and town planning initiatives.  
The area is being targeted for agri-tourism development by the municipality and there are a number of surrounding existing developments which include the Lion Park, Zoological Gardens and the Bird of Prey Sanctuary. The Mayibuye Game Reserve is another large development which has just commenced construction whilst the Wild Aloe Estate is also being planned.

The significance of any indirect impacts, such as negative visual impacts on the sense of place or the cumulative impact of future transmission lines on these plans and the development of the region needs to be considered.

- ❑ Potential impact upon enterprises with sensitive birds and animals.  
The Africa Bird of Prey Sanctuary, Rainbow Farms and the Zoological Gardens have all raised issues related to the potential of the electromagnetic fields, noise, light and dust to impact upon their breeding and other bird related activities. This impact could be directly upon the birds such as stress, increased disease (biosecurity) or respiratory problems (dust) or from an impact upon their ability to function, i.e. electrical interference with bird tracking or uncertainty created with regard to future raptor breeding programmes.

- ❑ Health and safety of the local community.  
Health and safety concerns have been raised. These relate to the impact of electromagnetic fields on human health and the security risk related to an influx of employment seekers to the area.

- ❑ Potential impact upon cultural and heritage resources.  
In order to develop the site, approval in terms of the National Heritage Resources Act, 1999 is required.

Thus, a cultural heritage practitioner will need to undertake an investigation to identify if there are any archaeological artefacts, buildings over 60 years old or areas of cultural importance that need to be considered.

- ❑ Potential impact upon watercourses and storm water management during construction and operation.  
The sub-station will require some earthworks which will potentially affected drainage lines and farm dams on the site. In addition, during operation, any pollution and run-off will need to be controlled to ensure surrounding water courses are not polluted.

- ❑ Potential cumulative impacts associated with the sub-station. Although future transmission lines to and from the sub-station will be investigated in a separate environmental authorisation process at the time, ACER will need to consider the potential cumulative impacts of these lines on regional land-uses.

### **3.5 Proposed Specialist Studies**

In order to address the above issues, the following specialist studies have been proposed and their terms of reference outlined in the Draft Scoping Report:

- ❑ Avi-fauna.
- ❑ Vegetation and Wetlands.
- ❑ Fauna.
- ❑ Electromagnetic Fields.
- ❑ Noise.
- ❑ Tourism and Economic Development.
- ❑ Visual.
- ❑ Social and Spatial Development.
- ❑ Cultural Heritage.

### **3.6 Parallel Investigations**

The proposed Isundu 765/400 kV Sub-station is a replacement to the Sigma Sub-station previously authorised. If the Isundu Sub-station is authorised, the 765 kV transmission line from the Venus Sub-station will need to continue along the authorised transmission line corridor until the Isundu Sub-station. By implication, a single 765 kV transmission line rather than 2 x 400 kV transmission lines will be constructed in the corridor between the Sigma and Isundu sites.

Thus, an amendment application of the previously granted authorisation for 2 x 400 kV transmission lines is being run in parallel with the Isundu Sub-station environmental authorisation process.

A Water-Use License (WUL) needs to be obtained from the Department of Water and Sanitation for the disturbance of water courses; this license application is being undertaken in parallel to the EIA. The specialists will also provide input into these two additional applications.

A copy of the presentation is provided in Annexure B.

## **4. WAY FORWARD AND TIMEFRAMES**

The draft Scoping Report is available for public comment until 9 June 2015. Thereafter, stakeholder comments will be incorporated and the Final Scoping Report made available to stakeholders and submitted to the Department of Environmental Affairs in June 2015.

The specialist study investigations have commenced and will be undertaken between May and July 2015, although some specialists were appointed earlier to consider seasonal aspects.

Currently, it is anticipated that the draft Environmental Impact Assessment Report (DEIAR) will be made available for public review toward the end of August 2015. All comments submitted will be considered, responded to and incorporated in the final EIA Report which will be submitted to DEA in November 2015 for decision-making.

Registered Interested and Affected Parties (I&APs) will be notified of the availability of the draft and final reports for review and may submit comments on the final reports directly to DEA, with a copy to ACER. I&APs will be notified of DEA's decision (Environmental Authorization), once issued, and their right to appeal.

Stakeholders are encouraged to submit their written comments to:

ACER (Africa) Environmental Consultants  
For attention: Paul Scherzer/Charlene Weber  
P O Box 503, Mtunzini, 3867  
Tel: 035 340 2715  
Fax: 035 340 2232  
Email: [isundu@acerafrica.co.za](mailto:isundu@acerafrica.co.za)

Project documentation is also available online: [www.acerafrica.co.za](http://www.acerafrica.co.za) under 'Current Projects'.

## **5. COMMENTS AND QUESTIONS**

A record of comments and questions raised at the meeting is provided in Annexure C.

## **6. THANKS AND CLOSURE**

Mr Paul Scherzer thanked all present for their input and participation.

## **7. ANNEXURES**

The following annexures are provided:

- Annexure A: Attendance Register.
- Annexure B: Presentation.
- Annexure C: Record of Comments and Questions.

**ANNEXURE A: ATTENDANCE REGISTER**

**ANNEXURE B: PRESENTATION**

**ANNEXURE C: RECORD OF COMMENTS AND QUESTIONS RAISED**

No.	Full Name	Comment / Question / Concern	Response from the Project Team
1	Lize Shaw – Mondi	<ol style="list-style-type: none"> <li>1. What are the transmission line servitudes?</li> <li>2. Will the lines have red light indicators?</li> <li>3. Stated that the lines must have red balls to reduce the risk to aircraft in specific areas.</li> <li>4. Why is a Water Use License Application required?</li> <li>5. Visual impact is a big issue as this area is gazetted to be a Nature Reserve.</li> <li>6. Has the Bird of Prey Sanctuary and the Raptor Centre been added as an I&amp;AP?</li> <li>7. Where are the other sites that were considered and is the no-development alternative being considered?</li> </ol>	<ol style="list-style-type: none"> <li>1. The required servitude for a 400 kV transmission line is 55 m for a single line and 110 m where the lines run in parallel (except if they go through forestry where the servitude then increases to 131 m). The required servitude for a 765 kV transmission line is 80 m.</li> <li>2. If the towers are less than 60 m high red lights are not required.</li> <li>3. This is noted and accepted.</li> <li>4. A WULA is needed in order to fill in the dam and disturb watercourses.</li> <li>5. Sense of place/visual impact will be studied and taken into consideration.</li> <li>6. Yes.</li> <li>7. The DSR outlines all the other sites previously considered. The no-development alternative is always an option. In this instance, Eskom would then need to re-start the site investigation process but this alternative also carries economic and social implications in terms of delays in being able to meet electricity demands.</li> </ol>

No.	Full Name	Comment / Question / Concern	Response from the Project Team
	Lize Shaw – Mondi (cont.)	<p>8. Is it private land?</p> <p>9. This proposal is important to Mondi's future plans, and they have an opportunity now to understand the cost to them.</p> <p>10. Alien Plant Control: Will this entail standard Eskom maintenance? Servitude maintenance requires management which is not always done properly. Fires are an issue and they sometimes come from Eskom's unmanaged servitudes. Alien Plant Control should be built into the budget and set aside. This is a large servitude.</p> <p>11. Indigenous trees: Eskom has previously cut down Yellow Woods without Mondi's consent. Consultation needs to take place.</p> <p>12. Request that the Environmental Authorisation include this agreement so that there are not issues in years to come.</p>	<p>8. Yes (Deon Boswell is the tenant).</p> <p>9. Noted.</p> <p>10. Cannot dispute that there may have been issues on other existing lines but as of late the Environment Management Programme informs construction and determines total mitigation measures. Some Authorisations insist that there must be Environmental Control and Maintenance. Landowners also need to agree with Eskom on site-specific conditions, who is responsible and how this will be managed. Sometimes the landowner chooses to be responsible for maintaining Eskom's servitudes and is compensated accordingly.</p> <p>11. Eskom does apply for permission to remove indigenous flora. These are operational matters negotiated with landowners and must be dealt with as such but will be noted as concerns.</p> <p>12. These requirements are included into the Environmental Management Programme which is enforced as a condition of the Environmental Authorisation.</p>
2	Gary Hardman - Sub 710 V&D and Shannon Hoffman – African Bird of Prey Sanctuary & African Raptor Trust	<p>1. Will fencing be placed around the sub-station to protect animals from entering the sub-station?</p> <p>2. How many people are expected to be onsite during the day and at night? Will there be on-site staff accommodation?</p>	<p>1. Yes, there will be two or three fences.</p> <p>2. Eskom estimates that there will be a maximum of 2-3 people onsite during the day and 2-3 at night. No accommodation will be on-site. The staff will come to work and then go home. Eskom is also still unsure if the sub-station will be manned permanently.</p>

No.	Full Name	Comment / Question / Concern	Response from the Project Team
		<p>3. Raised that there are fires in the area and the sub-station will be located in the middle of a large grassland area.</p> <p>4. Does the fence act as a fire barrier. There would need to be a firebreak and stones treated to prevent grass from growing.</p>	<p>3. Even if the sub-station is unmanned, Eskom will have communication and monitoring systems in place.</p> <p>4. This will be noted for the design team.</p>
3	Dave Rigby – Private stakeholder	<p>1. Our development was originally planned to be a township development, then this was changed to wildlife and aero-estate as the municipality has an aim to promote tourism and agriculture development north of the N3. In terms of development conditions, all of our plans had to be tourism-related. Now it is proposed to place a large sub-station in the middle of this area. This means we will now need to relook and redo all our plans and the EIA to change what our proposed land-use plans are.</p> <p>2. How will we be compensated for this and whom can we talk to concerning the issue of compensation? The EIA cannot go ahead before resolving the impact to hotels and tourism planned.</p> <p>3. Matters such as lighting around the sub-station are important. If one looks north, there are no lights to be seen. Eskom needs to make the lighting of the sub-station non-intrusive. Furthermore, as there is an airstrip, the lighting may cause confusion when landing.</p>	<p>1. These impacts will be considered. Specialists are aware of the proposed developments. If you would like to provide information on any specific developments, please submit to ACER so that all can be considered.</p> <p>2. Eskom agreed to arrange for their negotiator to come and meet with him to discuss these issues.</p> <p>3. Visual impacts, including the effect of lights at night, are being considered in the specialist studies.</p>

No.	Full Name	Comment / Question / Concern	Response from the Project Team
		<p>4. You need to consider the value on property. Power lines on or visible from a property has a severe negative impact on the value. I have bought property, and now this proposal will devalue its future value and usage. You cannot build within the servitude. No one wants to live near a sub-station. What is the compensation plan?</p> <p>5. I want to know the alternative sites that have been considered and seriously looked at.</p> <p>6. Are you aware that the Russians want to build a power station as planned with the current SA leadership on the north coast?</p>	<p>4. The DEIAR will need to consider these issues.</p> <p>5. The DSR outlines all the other sites previously considered since 2009.</p> <p>6. Mr Scherzer said that he was not aware of the current status of President Zuma's agreements with the Russians or of any power stations being planned on the coast.</p>
4	Shannon Hoffman – African Bird of Prey Sanctuary & African Raptor Trust	<p>1. Why is Eskom now starting to have unmanned sub-stations? If the sub-station is unmanned, it could be a big issue as we often need to fight fires in this large grassland area.</p> <p>2. Due process assessing alternatives – helpful for them to have multiple sites. They were not involved from 2008.</p>	<p>1. This is because the era of local terrorism has passed and because it is a cost issue. Cameras are able to monitor the premises. Sub-stations are manned where vandalism and theft are an issue and it all depends on local security issues. It has nothing to do with the health of working on site at a sub-station. Fires will be taken into consideration.</p> <p>2. Site alternatives have been considered previously and are outlined in the DSR. For this assessment, however, only layout and transmission line alternatives are being considered.</p>

No.	Full Name	Comment / Question / Concern	Response from the Project Team
		<p>3. This involves the sub-station in isolation – and only assesses the sub-station. It has to be done with cumulative lines. There will be nine lines that will have a big impact. We need to look as it is a lot of lines – need to be considered now as a whole picture. We have a lot invested.</p> <p>4. Pros and cons: Collision factor has not been mentioned, and will have a massive impact.</p>	<p>3. The EIA will be considering the potential cumulative impact of the transmission lines although the exact alignment of these lines will be the subject of a separate EIA process.</p> <p>4. Bird collisions with the transmission lines will be considered in the assessment.</p>
5	Dean Bosman – Natal Lion Park & Natal Zoological Gardens	<p>1. During the 2 – 3 years construction phase, will there be many people on site, as poaching and snaring are an issue.</p> <p>2. Will there be security fencing in place before construction?</p>	<p>1. There will no contractors living on site and snaring, poaching etc. will be considered.</p> <p>2. Yes. The construction site will be fenced.</p>
6	Pieter Venter – Transnet Pipelines	What year is this project expected to be completed?	If authorized, it is anticipated that the sub-station would be constructed and completed by 2020 or 2021.
7	Ben Hoffmann	<p>1. You need to consider the impacts on roads; there is only one tarred access road to the area and previously when there was a lot of illegal sand mining in the valley, the road did not hold up with the heavy vehicles and sand trucks. Bad roads affect tourism and the road is barely managing now so I am concerned over the additional toll of construction vehicles and increased traffic.</p> <p>2. It was previously stated that there are standards of distance to live safely away from sub-stations. What is the standard?</p>	<p>1. This will need to be taken into consideration.</p> <p>2. No exact standard was provided but Eskom stated that EMFs from the sub-station will be contained within the sub-station footprint.</p>

No.	Full Name	Comment / Question / Concern	Response from the Project Team
		<p>3. Are there any stakeholders allowed closer than is safe to Eskom infrastructure?</p> <p>4. When you have an EIA corridor, does that mean you would be able to place a power line anywhere within that corridor?</p> <p>5. Can you expropriate land?</p>	<p>3. Not officially. However, people do choose to live in close proximity to power lines. However, in terms of EMFs, televisions and microwave ovens are more detrimental to a person's health. The EMF Specialist will consider these aspects.</p> <p>4. Yes. Eskom applies for a 2 km corridor that allows for any deviations should this be required. For example, Eskom plans for 765 kV lines and then registers an 80 m servitude within the 2 km corridor. This allows the transmission line route to be optimized anywhere within the corridor based on landowner negotiations, technical constraints and environmental aspects.</p> <p>5. Eskom can expropriate but only as a last resort if negotiations are not successful. Eskom prefers to work with the affected landowner.</p>
8	Elaine Donaldson – Mkhambathini Municipality	<p>1. The area was always envisaged and planned for agri-tourism. This sub-station will have a definite impact on the sense of space.</p> <p>2. There is a concern locally that this sub-station application and information is a thin edge-wedge because Eskom is already talking about other future lines. There must be a master plan of what is ultimately on the table. This has a huge impact of the current and planned surrounding developments.</p>	<p>1. Sense of place/visual impact and the impact on regional land-uses will be studied and considered.</p> <p>2. The sub-station is part of a long-term plan and there is provision and space allowed for future transmission lines should demand increase and grow. The EIA will consider cumulative impacts. However, it is important to recognise that demand centres change and can influence where electricity is required. Thus, it is difficult to predict too far into the future where future transmission lines will run.</p>

No.	Full Name	Comment / Question / Concern	Response from the Project Team
		<p>3. Why not put it in Cato Ridge because that is where the need is, instead of the middle of a nature reserve? Why not utilize a previously disturbed site?</p>	<p>3. At the previous meeting, alternative sites at Cato Ridge were proposed but no co-ordinates were ever provided by the stakeholders when followed up and requested. However, ACER did investigate the Camperdown industrial area around the N2 but whilst the whole development area may be large it does not have a suitably large enough, flat area. Eskom has been considering alternatives since 2008 and there are a range of reasons why the various alternative sites are not feasible. It is not a simple process to identify alternative sites. Importantly, the demand is not just at Cato Ridge but the entire KZN region.</p>
9	Hennie Heyns – Aloe Wildlife Estate	<p>I am concerned about property values. Unless future plans are all on the table, it makes planning difficult. I&amp;APs also have plans and expect a return on their investments.</p>	<p>The impact upon regional and surrounding development plans is being considered and the cumulative impact will also be predicted, although the exact placement of future lines cannot be confirmed with certainty.</p>