ENVIRONMENTAL IMPACT ASSESSMENT
DRAFT BASIC ASSESSMENT REPORT

ESKOM IMPOFU-NGWEDI 132KV LINE PROJECT
DATE 24 NOVEMBER 2015

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GLOSSARY OF TERMS

ALIEN VEGETATION
Alien vegetation is defined as undesirable plant growth (usually of foreign origin) which includes, but is not limited to all declared category 1 and 2 listed invader species as set out in the 1983 Conservation of Agricultural Resources Act (CARA) regulations. Other vegetation deemed to be alien are those plant species that show the potential to occupy in number any area within the defined construction area and which are declared undesirable.

CONSTRUCTION MANAGER
The appointed person who acts as Construction Manager and is responsible for managing the construction process on site.

CONTRACTOR
A person or company appointed by the applicant to carry out stipulated activities.

EMERGENCY
An undesired event that results in a significant environmental impact and requires the notification of the relevant statutory body such as a local authority.

EMISSIONS
The release or discharge of a substance into the environment which generally refers to the release of gases or particulates into the air.

EMP
Environmental Management Plan. A detailed plan of action prepared to ensure that recommendations for preventing the negative environmental impacts (and where possible improving the environment) are implemented during the life-cycle of a project.

ENVIRONMENT
In terms of the National Environmental Management Act 107 of 1998 (NEMA), "environment" means the surroundings within which humans exist and which are made up of:
the land, water and atmosphere of the earth;
micro-organisms, plant and animal life;
any part or combination of (i) of (ii) and the interrelationships among and between them; and
the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.

ENVIRONMENTAL AUTHORISATION
An environmental authorisation or record of decision is a written statement from the National Department of Environmental Affairs (DEA) that records its approval of a planned undertaking to improve, upgrade or rehabilitate a development and the conditions of approval which may include mitigating measures required to prevent or reduce the effects of environmental impacts during the life of a contract.

ENVIRONMENTAL CONTROL OFFICER
A suitably qualified individual who on a regular basis monitors on behalf of the applicant the project compliance with conditions of the Environmental Authorisation (Record of Decision), environmental legislation and recommendations of this Environmental Management Programme.

ENVIRONMENTAL IMPACT
A change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's activities, products or services.

INCIDENT
An undesired event which may result in a significant environmental Impact but can be managed through internal response.

PROJECT MANAGER
The appointed person who acts as the manager of the project on behalf of the applicant.

SEMP
Strategic Environmental Management Plan. A SEMP (a sustainability framework) is developed to provide a strategic objective, priority action and environmental indicator for managing the environment.

ACRONYMS

CSIR	-	Council for Scientific and Industrial Research
DEA	-	Department of Environmental Affairs
DAFF	-	North West Department of Agriculture, Forestry and Fisheries
DREAD	-	North West Department of Rural, Environment and Agricultural Development
DMR	-	Department of Mineral Resources
DSOE	-	Desired State of the Environment
DWS	-	Department of Water and Sanitation
ECF	-	Environmental Constraints Framework
EIA	-	Environmental Impact Assessment
EMP	-	Environmental Management Plan
GIS	-	Geographic Information System
IDP	-	Integrated Development Plan
I&AP	-	Interested and/or affected parties
MASL	-	Meters above sea level
NBA	-	National Biodiversity Assessment
NEMA	-	National Environmental Management Act
NWPAES	-	North West Province Protected Areas Expansion Strategy
HRA	-	National Heritage Resources Act
NWA	-	National Water Act
PPP	-	Public participation process
SAHRA	-	South African Heritage Resources Agency
SANBI	-	South African National Biodiversity Institute
SDF	-	Spatial Development Framework
SDI	-	Spatial Development Initiative
SEA	-	Strategic Environmental Assessment
SEMP	-	Strategic Environmental Management Plan
WUL	-	Water Use Licence
WULA	-	Water Use Licence Application

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

(For official use only)

File Reference Number:	
Application Number:	
Date Received:	

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of **08 December 2014**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.
14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included in the electronic copy of the report submitted to the competent authority.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?	YES	NO

If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

1. PROJECT DESCRIPTION

a) Describe the project associated with the listed activities applied for

1.1 Background

This EIA application is for the proposed augmentation of the 132kV electricity supply infrastructure for the Maseve project.

The Maseve mine is a platinum group metals mine, which is managed and operated by Platinum Group Metals RSA Pty Ltd. (PTM). The Maseve mine adjoins the Frischgewaagd-Ledig Project. It also shares a boundary with the Styldrift mine and the Bafokeng Rasimone Platinum Mine.

Bulk electricity supply infrastructure is needed to augment the supply to the above-mentioned mining project on the farm Frischgewaagd 96 JQ, in the Rustenburg Local Municipality. One 132kV overhead power line will be constructed from the existing Eskom Impofu Substation to the Eskom Ngwedi Main Transmission Station (MTS). Once constructed, Eskom will ultimately take over the ownership of the infrastructure and operate and maintain it.

The Medupi Integration Project was one of the large scale projects to support the grid system between Limpopo and the North West province. As outflow of this large scale project, Ngwedi Main Transmission Substation (MTS) and associated transmission power line turn-ins in the vicinity of Sun City, is being constructed in order to meet the expected future load growth for the greater Rustenburg area. Eskom will thus supply the bulk electricity from their Ngwedi 400/132kV MTS.

Maseve Investments 11 (Pty) Ltd (the applicant) appointed Texture Environmental Consultants as the independent environmental assessment practitioner (EAP) to undertake the Environmental Impact Assessment (EIA) for the proposed electricity supply project. The EIA will conform to the National Environmental Management Act 107 of 1998 and to the Environmental Impact Assessment Regulations published in GN R982/2014 - R985/2014 of 8 December 2014.

This report provides information about the electricity supply infrastructure which is being developed, i.e. the 132kV overhead power line from the existing Eskom Impofu Substation to the Eskom Ngwedi MTS, and its scope is restricted to this component of the project.

1.2 Project locality

One 132kV overhead line will be constructed from the existing 132kV Eskom Impofu Substation to the Ngwedi Main Transmission Station (MTS).

The study area is situated within the grounds of the Maseve Mine. The area is situated approximately 6km southwest of Sun City and 35km northwest of Rustenburg, within the Rustenburg Local Municipality in the North West Province. The site is to the east of the R565 secondary road passing between Rustenburg and Sun City Resort in a northerly direction.

The study area is within a new, active and developing mining complex. Large areas of the study area consist of roads, powerlines, a powerline servitude for large transmission lines, electrical substations, soil stockpiles, buildings and other mining-related infrastructure.

Ngwedi MTS is a 400/132kV Eskom transmission substation currently being under construction and located on the northern section of the study area. The existing Impofu 132kV substation is located on the south western side of the study area.

The GPS coordinates of the main landmarks within the project area are as follows:

- Existing Impofu Substation: 25°25'1.36"S; 27° 4'54.55"E.
- Ngwedi MTS (currently under construction): 25°24'23.83"S; 27° 5'12.56"E.
- Sun City Resort: 25°21'32.71"S; 27° 6'0.45"E.
- Rustenburg: 25°39'15.49"S; 27°15'21.38"E.
- Main entrance to Maseve Mine: 25°25'12.95"S; 27° 4'45.84"E
- Approximate centre point of study area: 25°24'41.38"S; 27° 5'17.11"E.
- 1:50 000 map grid references – 2527AC (2527AC17).

During field investigations various powerline servitude alternatives within the larger study area were investigated. The best options will be determined through the environmental and specialist studies, as well as public opinion.

The proposed project is set out in the Location Maps below.

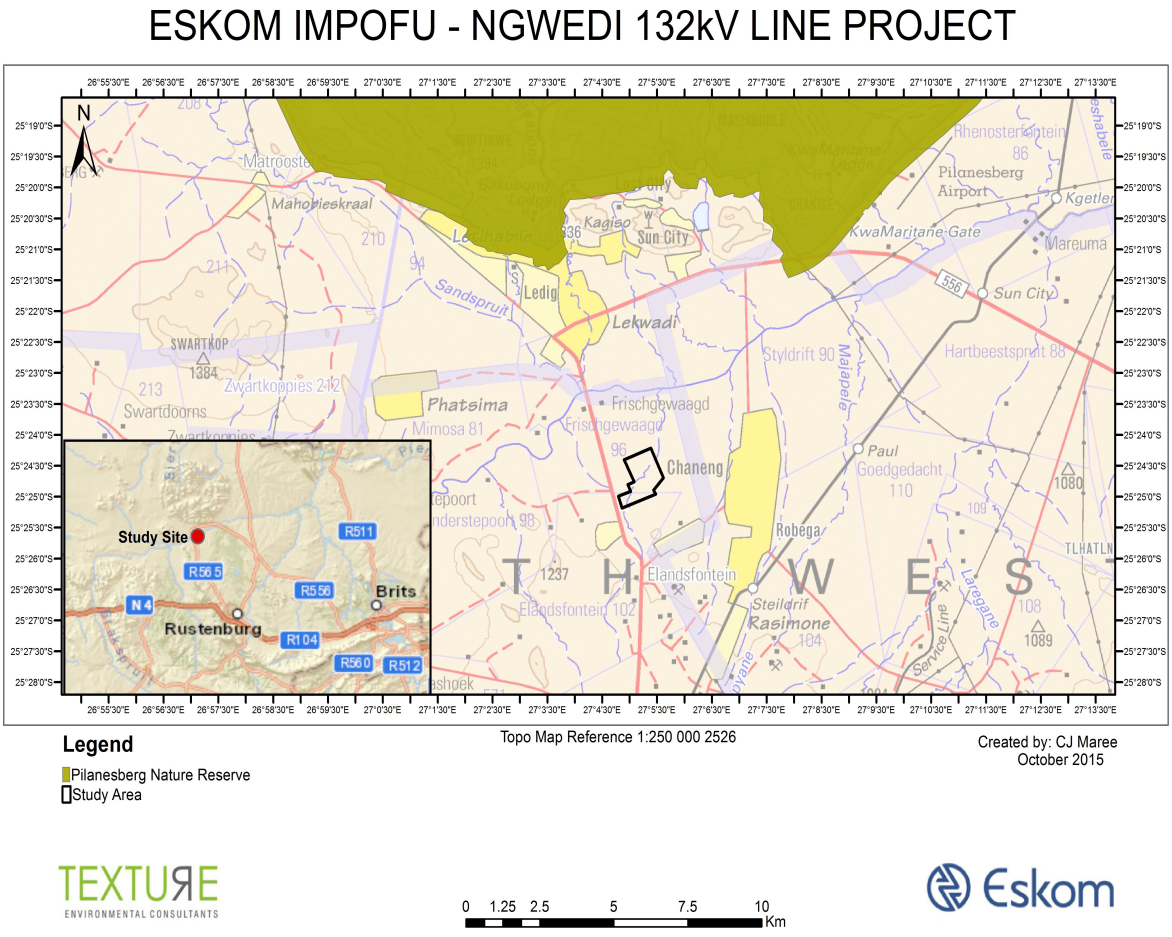

Figure 1: Study area location

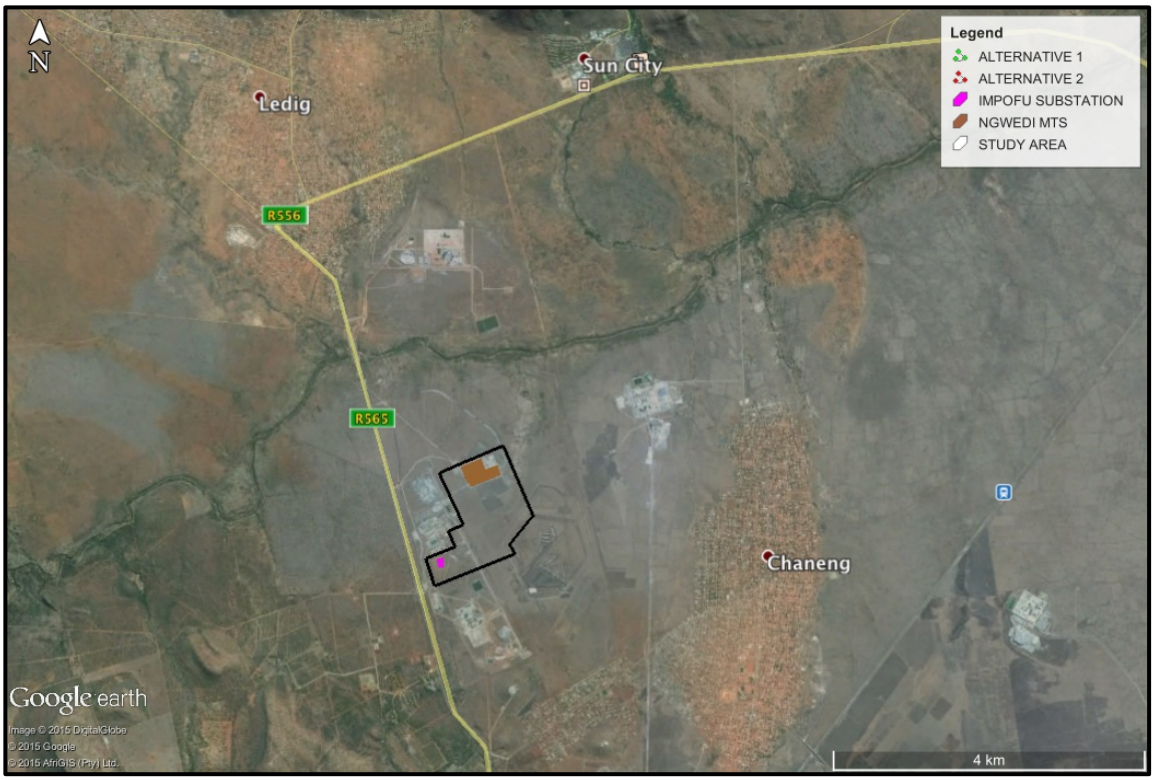

Figure 2: Study area location

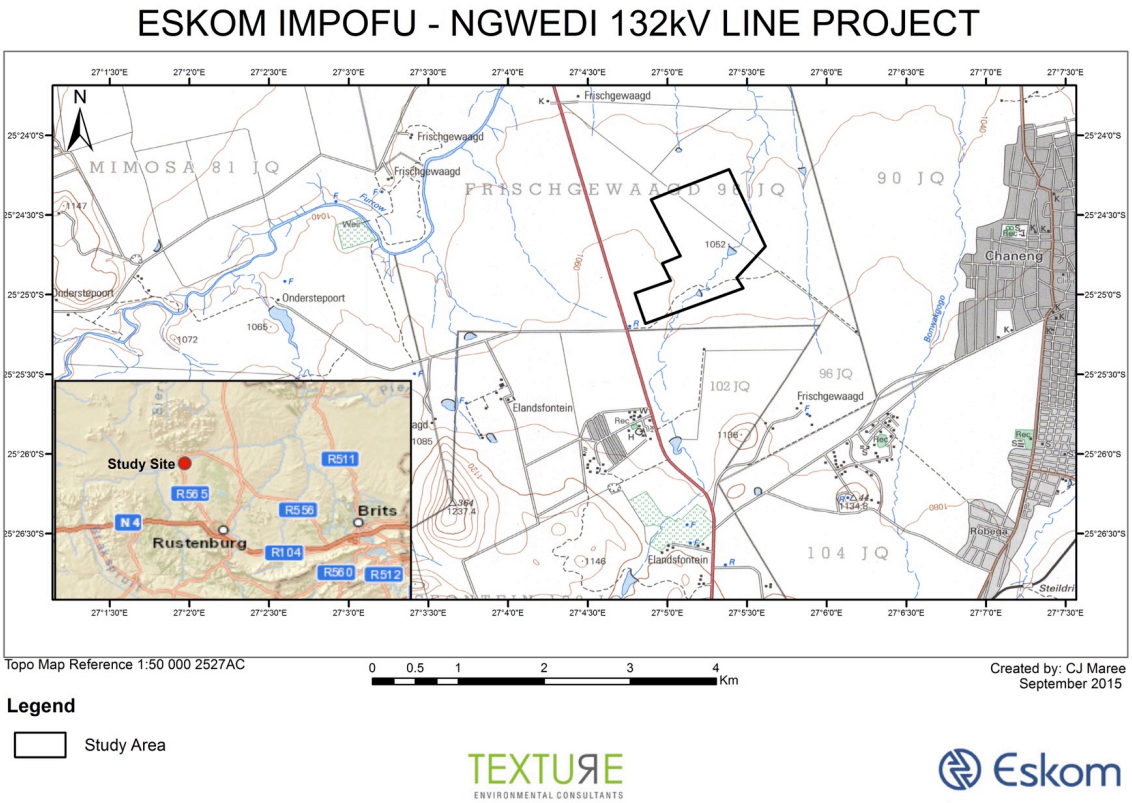

Figure 3: Site location

1.3 Property descriptions

The proposed power line alignment is on the farm Frischgewaagd 96 JQ, Portions 7, 10 and 14, in the Rustenburg Local Municipality in the North West Province.

1.4 Topography

The topography of the study area is flat plains and lowlands, with no undulating hills or valleys. No rocky ridges or rocky outcrops are present in the study area.
The average slope across the study area is 1 - 3%. The direction of the slope is predominantly from west to east and northeast and from north to south. The overall drainage and thus slope of the study area can be described by the drainage line that runs from the southwest to the northeast and north across the study area.
The height above sea level across the study area varies from about 1063m to 1045m.

1.5 Project components

The full scope of works includes the construction of:

- 1 x 132 kV overhead power line of approximately 1.5km long from the Impofu substation to Ngwedi Main Transmission Station (MTS).

Alternative Route 1 (preferred route) and Alternative 2 are shown in the map below (Figure 4).

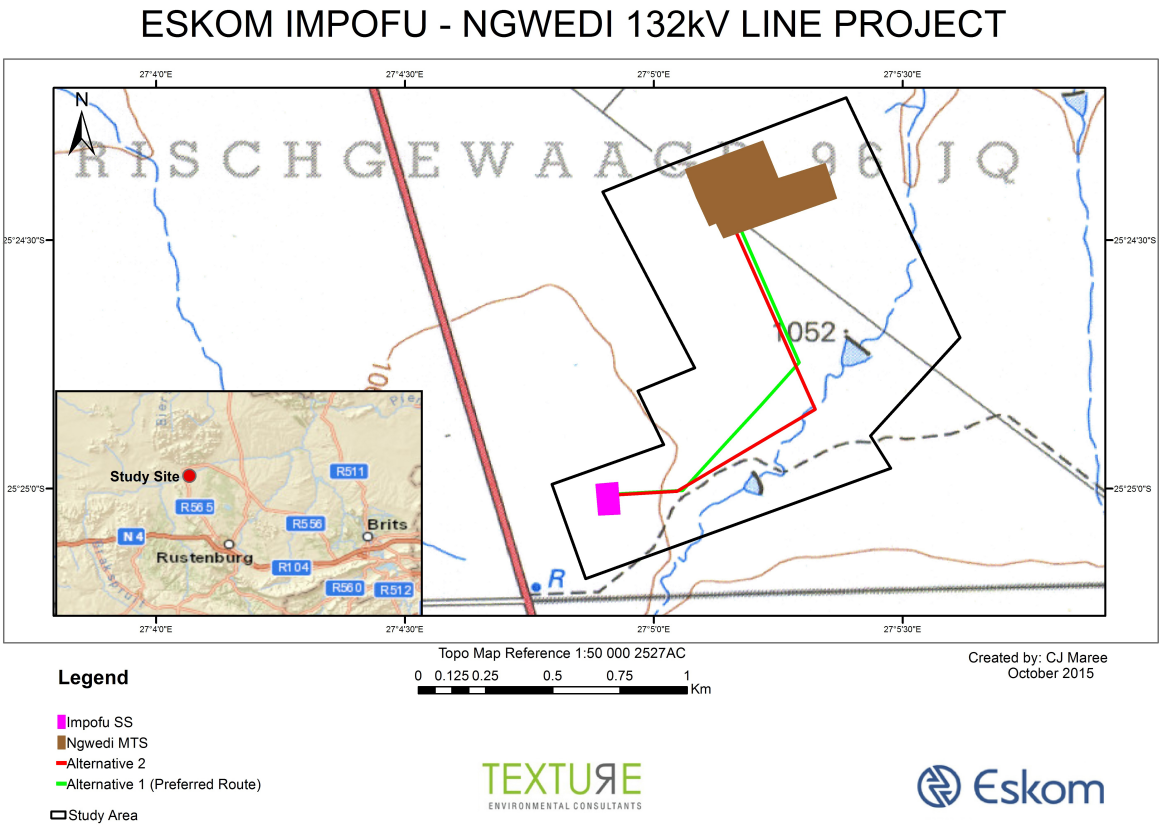

Figure 4: Site location of overhead power line alternatives

1.6 Surrounding land uses

The study area is situated within an area that, up until a few years ago, was a mixture of open bushveld and agricultural land in the form of cultivation (Figure 7). Below is a Google Earth image of the landcover or landuse of the study area from around 2010. It can be seen that most of the area was cultivated, that is ploughed up, over the years. This is also evident in the area of the drainage line that runs through the study area (Figure 5).

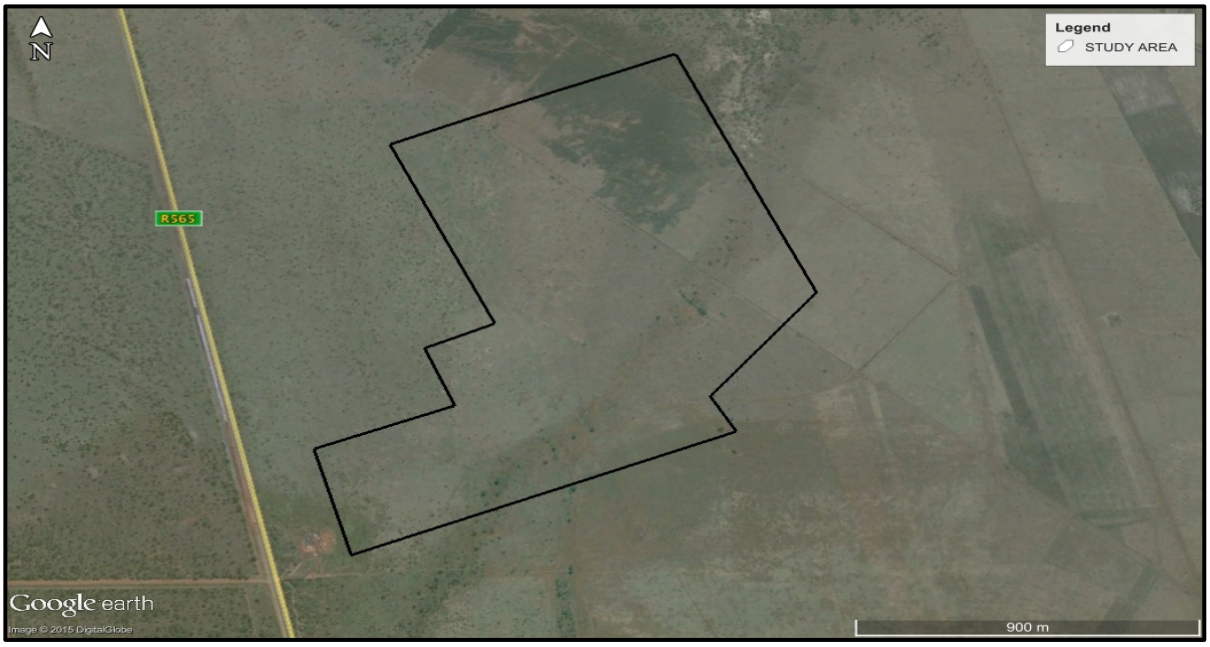

Figure 5: Landcover as of 2010

Presently, the study area is situated within a new, active and developing mining complex. Large areas of the study area consist of roads, powerlines, powerline servitudes for large transmission lines, electrical substations, soil stockpiles, buildings and other mining-related infrastructure (Figure 6).

Figure 6: Present landcover

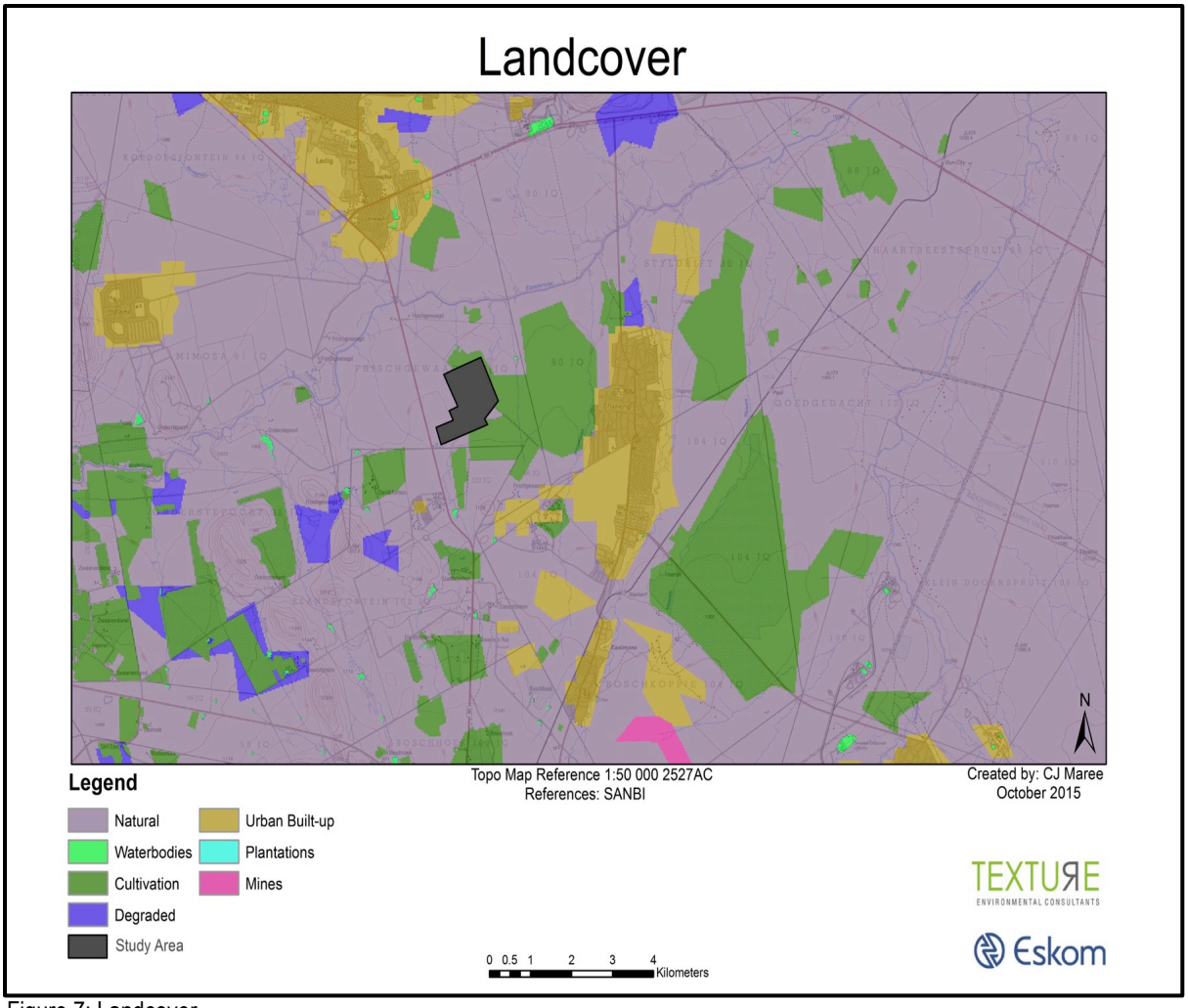

Figure 7: Landcover

1.7 Need for the project

In 2012, the Government adopted the National Infrastructure Plan, wherein it highlighted that South Africa would be embarking on a process to accelerate infrastructure development, in order to deal with service delivery backlogs and to build a platform for future economic growth and employment. This infrastructure growth would be spearheaded by Strategic Infrastructure Projects (SIPs), which are large-scale infrastructure projects that were also projected to have numerous environmental impacts, which in turn could trigger many EIAs. SIP 10 states that: Electricity Transmission and Distribution for All, has been identified as a major infrastructure development need by the Presidential Infrastructure Coordinating Committee (PICC). This project is therefore in line with the above-mentioned SIP.
The proposed activity will provide support to electrical infrastructure that will contribute to sustainable economic growth, provide for sustainable human settlements and support the mining industry.

Eskom Holdings Ltd is mandated by the South African Government to ensure the provision of reliable and affordable power to South Africa. Eskom's core business is in the generation, transmission (transport), trading and retail of electricity.
The relaible provision of electricity by Eskom is critical for industrial development and related employment and sustainable development in South Africa. As electricity cannot be practically and significantly stored, power is generated and delivered over long distances at the instant that it is required. In South Africa, thousands of kilometers of high voltage Transmission lines (i.e. 765kV, 400kV and 275kV Transmission lines) transmit this power to Eskom's major substations. At these major substations, the voltage is down-rated and distributed to smaller substations all over the country via Distribution lines (e.g. 132kV, 88kV and 66kV power lines). Here the voltage is down-rated further for distribution to industry, business, farms and homes. In order to maintain a

reliable power supply within the entire network, the voltages at all substations are required to be within certain desired limits. If the network is operated at voltages which are below these limits, voltage collapse problems and power outages may be experienced.

Eskom has embarked on a Massive Build Programme to increase its generation, transmission and distribution infrastructure. This expansion is based on the Waterberg coalfields. Since Medupi and Matimba power stations are not situated in close proximity of the main economic hubs (Pretoria-Witwatersrand-Vereeniging triangle) nor to other nationwide economic hubs, Eskom has had to invest in infrastructure for the transportation of the generated electricity. High voltage transmission power lines are required to transmit the power from the Medupi Power Station. The Medupi Integration Project was one of the large scale projects to support the grid system between Limpopo and the North West province. As outflow of this large scale project, Ngwedi Main Transmission Substation (MTS) and associated transmission power line turn-ins in the vicinity of Sun City, is being constructed in order to meet the expected future load growth for the greater Rustenburg area. The peak electricity load required in this area is further anticipated to increase significantly in the near future due to planned mining developments underway.

Further to the above transmission projects, Eskom North West Operating Unit, Distribution received authorisation in 2012 for the Ngwedi Network (NDP) consisting of 7 distribution lines from Ngwedi MTS to various substations. The DEA Reference number was DEA/EIA/0000305/2011. The Ngwedi-Impofu 132kV line was part of this extensive Eskom application for the Ngwedi Network (NDP). The Ngwedi-Impofu 132kV line could not be constructed in time and subsequently the new applicant, Maseve Investments 11 (Pty) Ltd, requested the EAP to apply for authorisation for a new power line alignment that is shorter and therefore more cost effective.

As mentioned, bulk electricity supply infrastructure is needed to augment the supply to the Maseve mining project on the farm Frischgewaagd 96 JQ, in the Rustenburg Local Municipality. Once constructed, the ownership, operation and maintenance of the overhead power line will be transferred to Eskom.

b) Provide a detailed description of the listed activities associated with the project as applied for

The listed activities for the proposed Eskom Impofu-Ngwedi 132 kV line project are the following:

Table1: Listed activities

Listed Activity	Activity/Project Description
GN R983/2014 Activity 11 The development of facilities or infrastructure for the transmission and distribution of electricity - (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts	The construction of 1 x 132kV overhead power line of approximately 1,5km long from the existing Eskom Ngwedi Main Transmission Station (MTS) to the 132kV Eskom Impofu substation.
GN R985/2014 Activity 13 The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation - e) In North West: i) Outside urban areas, in: hh) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve.	The study area is 6km from the Pilanesberg Nature Reserve (Formal protected area) which is also a Priority Bird Area (IBA). The reserve is legally defined as a provincial nature reserve in terms of the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) (NEMPAA). Indigenous vegetation will be cleared for the 31m wide servitude x 1370m of powerline = 42 470m^2 = 4.247 ha

Description of Listed activity associated with the Project activity

1 GN R983/2014 Activity 11: Construct one 132kV power line outside an urban area

One x 132kV Overhead line from the Impofu Substation to the Ngwedi MTS

132kV Design specifications

It is proposed to construct one 132kV overhead power line over approximately 1,5km from the existing Eskom Impofu substation to the Eskom Ngwedi MTS. Ngwedi MTS is currently under construction. The proposed structure for the 132kV overhead power lines, is a monopole steel structure. In general, these structures could be placed 220-350 meters apart, for the length of a power line. The structures for a power line are between 14 and 30 meters high, depending on the terrain and existing land use. The flatter the terrain, the shorter the structures as well as the distance between the structures needs to be. The conductor attachment height on a pole is typically about 13m (for 20m intermediate poles) and more for longer poles, depending on the pole length. Ground clearances will adhere to the requirements of the Occupational Health and Safety Act (Act No. 58 of 1993) of 6.3m and 7.5m.

Strain poles have an average planting depth of 2m while intermediate pole planting depths vary between 2.6m (for 20m poles) and 3m (for 24m poles) or more depending on the pole length. The pole foundation is dependant on the soil type and varies in size and consists of a 8:1 good soil:cement mix that are compacted in 200mm layers. A concrete cap of 1.2m x 1.2m is cast around the pole to "seal" the soil around the pole from oxygen - to control oxidation or rust on the pole and to prevent erosion damage to the foundations.

Should the structures be 21m high above ground then the planting depth of the structure could be calculated as follows: For a structure that need to be 21m above ground, the planting depth will be 0.6 meters plus 10% of the height of the structure above ground = 0.6 meters plus 2.1 meters = structure is planted 2.7 meters deep. Should stays be needed then the stays will be at a 45° angle to the structure and planted 21 meters from the structure into the ground.

Where the site is relatively flat, single structures without stays will be used, except for where the power line has to change direction. Refer to Appendix C2 in the BAR for visuals of the monopole steel structure (structure).

Servitude requirements

Generally, 132kV power lines require a servitude width of 31 meters (15,5 meters on either side of the centre line of the power line). A servitude area is a no building area, except for Eskom structures. Usually, normal farming activities may continue in a servitude with the exception that no trees may be planted or high structures may be erected. The132kV line will be constructed adjacent and parallel to the existing 132kV lines that turn in to Impofu Substation. The separating distance from each other is generally 21 meters. Relevant to this project is that the site investigated for the lines is flat and stays will not be used except at turns in the route.

The EIA will seek to authorise a **corridor** for the power line and not just for the actual servitude width of the power line. The maps attached in Appendix A indicates/highlights the whole area that was investigated to inform DEA on the area that is part of the authorisation. The total area investigated is the area marked with a black border. The wider corridor will allow for potential amendments to the EA (at a later stage).

***2. GN R985/2014 Activity 13: Clearance of an area of 1 hectare or more of vegetation* where 75% or more of the vegetative cover constitutes indigenous vegetation**

The vegetation of the study area is representative of Zeerust Thornveld. However, the study area is small and is confined within a mining complex. A few acacia thorn trees are present with little to no middle layer and a fairly well developed grassy, lower layer. The upper layer of thorn trees is made up of short thorn trees with no tall, large canopy trees present. Although the study area is within mixed bushveld, the 'mix' of trees is not well represented. This is manly due to historic cultivation and farming practices. The vegetation of the study area in general is not in a pristine state.

The study area is 6km from the Pilanesberg Nature Reserve (Formal protected area) which is also a Priority Bird Area (IBA). The reserve is legally defined as a provincial nature reserve in terms of the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) (NEMPAA).

Vegetation will be cleared for the 31m wide powerline servitude x 1370m of powerline. Therefore a total area of 42 470m^2 will be cleared for construction purposes. This equals an area of 4.247 hectares.

2. FEASIBLE AND REASONABLE ALTERNATIVES

***"alternatives"**, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—*

(a) the property on which or location where it is proposed to undertake the activity;
(b) the type of activity to be undertaken;
(c) the design or layout of the activity;
(d) the technology to be used in the activity;
(e) the operational aspects of the activity; and
(f) the option of not implementing the activity.

Describe alternatives that are considered in this application as required by Appendix 1 (3)(h), Regulation 2014. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the, competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

a) Site alternatives

In the case of linear activities:

2.1 The 132kV line from Impofu substation to Ngwedi MTS

The EIA will seek to authorise a **corridor** for the power line and not just for the actual servitude width of the power line. The maps attached in Appendix A indicates/highlights the whole area that was investigated to inform DEA on the area that is part of the authorisation. (Area indicated with a black border). The wider area that was investigated will allow future potential amendments to the EA should it be necessary (at a later stage).

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A of this form.

Table 2: Co-ordinates of the corners of the site (wider area) that is investigated

Description	Lat (DDMMSS)	Long (DDMMSS)
North East	25°24'12.97"S	27° 5'23.23"E
North West	25°24'24.43"S	27° 4'54.05"E
South East	25°24'57.72"S	27° 5'28.29"E
South West	25°25'10.62"S	27° 4'51.88"E

Table 3: Coordinates provided for the centre line of the route
(starting point, middle, end as well as every 250m)

Route Alternatives	Latitude (S)	Longitude (E)
Alternative Route 1 (Preferred Route)		
Starting point (Impofu Sub)	25°25'0.65"S	27° 4'55.73"E
Middle point	25°24'48.50"S	27° 5'14.19"E
End point (Ngwedi MTS)	25°24'28.72"S	27° 5'10.20"E
Alternative Route 2		
Starting point (Impofu Sub)	25°25'0.65"S	27° 4'55.73"E
Middle point	25°24'50.41"S	27° 5'19.37"E
End point (Ngwedi MTS)	25°24'28.72"S	27° 5'10.20"E

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.- Attached in Appendix A5.

Route Alternative 1 (preferred alternative)
(Refer to map in Appendix A3)
Route Alternative 1 is the preferred route alternative for the proposed 132kV powerline.
Route 1 runs from the existing Impofu Substation to the Ngwedi MTS, which is presently under construction. The entire route is within the main complex of the mine. The length of the line is short, at only about 1,4km.
The route exists the Impofu Substation in an easterly direction, then turns northeast and then north. It enters the Ngwedi MTS from the south end.
The veld through which the servitude passes is predominantly open grassland with a few, short thorn trees/ shrubs. No sensitive areas are crossed and no watercourses either.

Route Alternative 2
Route Alternative 2 is the alternative route investigated as a possible option for the proposed 132kV powerline. It is however, not the preferred route.
Route 2 also runs between Impofu Substation and Ngwedi MTS. The entire route is within the mine complex in disturbed areas and open grassland bushveld. Route 2 is also short, but slightly longer than Route 1, at approximately 1,5km in total length.
Both route alternatives follow the exact same servitude when leaving / entering the two electrical stations (Impofu and Ngwedi).
The central section of Route 2 turns within the delineated area of the small drainage line. This is seen as a sensitive area, eventhough the drainage line is highly seasonal in nature, seldom active and has little to no distinct riparian zone.

Route Alternative recommendations
Recommendations on the preferred route alternative in terms of biodiversity are made on the strength and combination of all the impacts and mitigating actions. As well as on the sensitivities of the various biophysical features, faunal habitats and vegetation types that each proposed route alternative impacts on. A summary comparison between the two alternative routes, as to the number of ecologically sensitive units each one potentially impacts on, river crossings, etc. is shown in Table 4.

Table 4: Comparison of Potential Impacts by Alternative Routes

Ecological Sensitive Units	Alternative Route 1	Alternative Route 2
Areas of High ecological sensitivity	0	0
No-Go areas in close proximity	0	0
No. of river & stream crossings	0	0

No. of major drainage line crossings	0	1
Rocky outcrops in corridor	0	0
Ridges in corridor	0	0
Major Wetlands encountered	0	0
Total impacts per route	**0**	**1**

When taking all impacts into account there is the issue of the higher potential impact in relation to watercourses by Alternative Route 2.
As can be seen from a close up of the delineated watercourse, Alternative Route 2 will turn directly within the main channel of the drainage line. This is not acceptable in terms of the natural environment. It is also highly likely that a WULA will be required for Route Alternative 2 in terms of a Section 21 (c) & (i) application should this route alternative be utilised.

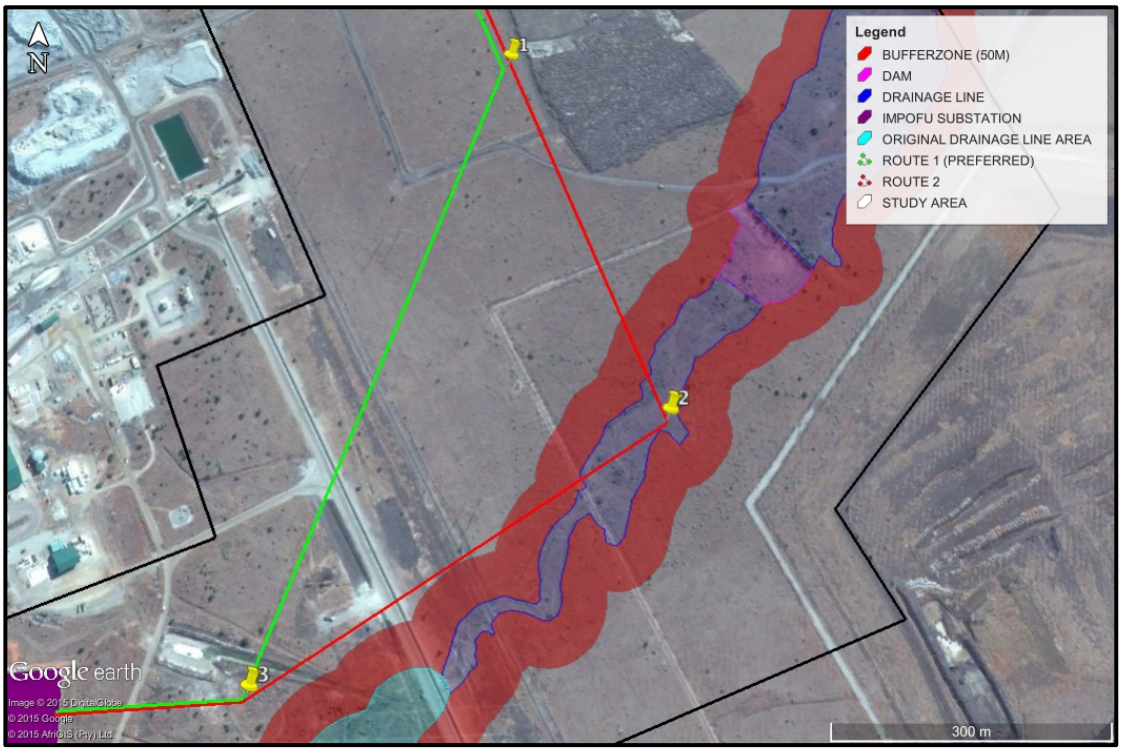

Figure 8: Potential WULA area along Route Alternative 2

Taking all of the above issues into account, the Ecological (Biodiversity) recommended line variant for the proposed project is: **Route Alternative 1**. From a Heritage (and Palaeontological) perspective there are no specific preference for any of the alternative routes. The Avifauna Impact Assessment found that Alternative 2 impacts directly on a drainage line. The drainage line is delineated along with a 50m bufferzone. It is recommended that Bird Flight Diverters be placed along Route Alternative 2 across these sections highlighted and marked (GPS coordinates). The recommended line variant route, in terms of avifauna therefore is: **Route Alternative 1**.

b) Lay-out alternatives (none)

c) Technology alternatives

Alternative Distribution of Electricity

Alternative ways of distributing electricity have been investigated in several studies. Of particular concern is the problem of collision of birds with overhead powerlines. Several investigations dealing with the collision problem

have focused on finding suitable mitigation measures. The most proactive measures are: power line route planning (and the subsequent avoidance of areas with a high potential for bird strikes) and the modification of power line designs (this option includes line relocations, underground burial of lines, removal of over-head ground wires, and the marking of ground wires to make them more visible to birds in flight). In many instances, decisions on power line placement and possible mitigation measures are however eventually based on economic factors. The relocation of an existing line is the last option that is usually considered when trying to mitigate avian collisions. The huge expense of creating a new line and servitude usually cannot be justified unless there are biologically significant mortalities. Underground burial of power lines is another option available to managers in areas of high collision risk. This will obviously eliminate collisions, but the method has many drawbacks. This costs of burying lines can be from 20-30 times (or more) higher than constructing overhead lines, and such costs are related to the line voltage, type and length of cable, cable insulation, soil conditions, local regulations, reliability requirements, and requirement of termination areas. Limitations of cable burial include: no economically feasible methods of burying extra high voltage lines have been developed, there is a potential to contaminate underground water supplies if leakage of oil used in insulating the lines occurs, and extended outage risks due to the difficulty in locating cable failures. Therefore this alternative could not be considered a viable one.

d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives): None

e) No-go alternative

It is suggested that **to maintain the status quo is not the best option for the macro environment**.
The reliable provision of electricity by Eskom is critical for industrial development and related employment and sustainable development in South Africa. If the network is operated at voltages which are below these limits, voltage collapse problems and power outages may be experienced.

Demand in the Rustenburg area is increasing rapidly due to various mining developments. The peak electricity load required in this area is further anticipated to increase significantly in the near future due to planned mines underway.

As mentioned, bulk electricity supply infrastructure is needed to augment the supply to the Maseve mining project on the farm Frischgewaagd 96 JQ, in the Rustenburg Local Municipality. Once constructed, the 132kV overhead line will be transferred to Eskom, who will become the owner and operator thereof.

This proposed project is therefore part of the infrastructure to improve the supply of electricity to the network. Should this application not be approved then the supply will not be reliable and this can result in major disturbances in provision to the customer base. The No-Go development alternative could therefore not be considered the responsible way to manage the site.

Paragraphs 3 – 13 below should be completed for each alternative.

3. PHYSICAL SIZE OF THE ACTIVITY

a) Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

for linear activities:

The 132kV line from Impofu Substation to Ngwedi MTS

Alternative:	**Length of the activity:**
Alternative A1 (preferred alternative)	1.37km
Alternative A2	1.47km

b) Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

The 132kV line from Impofu Substation to Ngwedi MTS

Alternative:	**Size of the site/servitude:**
Alternative A1 (preferred alternative)	31m servitude x 1370m = 42 470m^2
Alternative A2	31m servitude x 1470m = 45 570m^2

4. SITE ACCESS

Does ready access to the site exist?	YES	NO
If NO, what is the distance over which a new access road will be built		0m

Describe the type of access road planned:

No new access to the site is planned. During construction all vehicle movement must be along existing roads. In addition, any existing servitude areas (of existing power lines) should be used.
The servitude area of the new power line will also be used to gain access during construction. A temporary construction road will be cleared in the new servitude area underneath the future power line to enable the construction activities. An area of 8m will be cleared of major trees and bushes, 4m on either side of the proposed alignment of the line.
As mentioned the existing servitudes and existing roads should be used during construction. Therefore road alternatives are not being investigated for this project.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

5. LOCALITY MAP

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.). The map must indicate the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;

- indication of all the alternatives identified;
- closest town(s;)
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection).

6. LAYOUT/ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

7. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWS);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

8. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report**.** It must be supplemented with additional photographs of relevant features on the site, if applicable.

9. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of at least 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

10. ACTIVITY MOTIVATION

Motivate and explain the need and desirability of the activity (including demand for the activity):

1. **Is the activity permitted in terms of the property's existing land use rights?**	YES	NO	Please explain
There will not be a change in the land use of the properties.			
2. **Will the activity be in line with the following?**			
(a) Provincial Spatial Development Framework (PSDF)	YES	NO	Please explain
In the North West province particular focus will be placed on both the rural economy (due to the predominant rural character of the province) as well as on the upgrading, the provisioning and the maintenance of economic infrastructure as the precondition of overall economic growth and development and for its significant potential to sustain employment. The province will also prioritise the transformation of human settlements (mainly due to the challenges presented with housing and living conditions in mining communities) and the eradication of corruption. All of the above will be done while building and establishing a capable and developmental state. The chosen top 4 development priorities are the following: 1. Economy and employment 2. Economic infrastructure 3. An integrated and inclusive rural economy 4. Human settlement and spatial transformation The current project can be viewed as a development in infrastructure to ensure economic development .			
(b) Urban edge / Edge of Built environment for the area	YES	NO	Please explain
The project will not compromise the integrity of the urban edge.			

(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	YES	NO	Please explain

Bojanala Platinum District Municipality identifies as their Key Performance Areas or strategic priorities the following:

- Municipal Transformation and Institutional Development
- Local Economic Development
- Basic Service Delivery and Infrastructure Investment
- Financial Viability and Financial Management
- Good Governance and Community Participation

Universal access to quality, affordable and reliable municipal services (e.g. water, sanitation, electricity, refuse removal, transportation) is a mentioned as a priority.

Rustenburg Local Municipality (RLM) is one of five municipalities within the Bojanala District Municipality and is divided into 38 wards. The total population is 475 232 people, comprising of 54% males and 46% females. The significant growth in Rustenburg is largely attributed to the impact of the world's four largest mines in the immediate vicinity of the town, namely, Anglo Platinum, Impala Platinum, Xstrata and Lonmin. Approximately 97% of the total platinum production occurs in Rustenburg, with the mining sector providing around 50% of all formal employment.

The RLM adopted five key areas of performance in ensuring that they achieve their intended goals especially in the following areas:

- Municipal Infrastructure development and Basic Service Delivery
- Municipal Transformation and Organisational Development
- Sustainable Economic Development
- Municipal Financial Viability ans Management
- Good Governance and Public Participation.

In respect to the third priority, Sustainable Economic Development, they identified the following issues:

- Diversification of the Economy
- Partnership formulation for service delivery

Relevance

The proposed activity will provide support to electrical infrastructure that will contribute to sustainable economic growth, provide for sustainable human settlements. The application will therefore not compromise the integrity of the IDP of the Local Municipality.

(d) Approved Structure Plan of the Municipality	YES	NO	Please explain

The development will not conflict/compromise the structure plan of the municipality.

(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	YES	NO	Please explain

This application will not compromise the integrity of the existing environmental management priorities for the area.

(f) Any other Plans (e.g. Guide Plan)	YES	NO	Please explain

3. **Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?**	YES	NO	Please explain
Refer to 2(a) and 2(c)			
4. **Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)**	YES	NO	Please explain
The Eskom Conversion Act, 2001 (Act No. 13 of 2001) established Eskom as a State Owned Company (SOC) with the Government of South Africa as the only shareholder, represented by the Minister of Public Enterprises. The main objective of Eskom is to "provide energy and related services including the generation, transmission, distribution and supply of electricity, and to hold interests in other entities". In 2012, Government adopted the National Infrastructure Plan, wherein it highlighted that South Africa would be embarking on a process to accelerate infrastructure development, in order to deal with service delivery backlogs and to build a platform for future economic growth and employment. This infrastructure growth would be spearheaded by Strategic Infrastructure Projects (SIPs), which are large-scale infrastructure projects that were also projected to have numerous environmental impacts, which in turn would trigger many EIAs. SIP 10: Electricity Transmission and Distribution for All, has been identified as a major infrastructure development need by the Presidential Infrastructure Coordinating Committee (PICC). Eskom North West Operating Unit (NWOU) is embarking on projects to provide infrastructure to support the customer base. This project is in line with the above-mentioned SIP. The proposed activity will provide support to electrical infrastructure on a local level that will contribute to sustainable economic growth, provide for sustainable human settlements and support the mining industry.			
5. **Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)**	YES	NO	Please explain
The local municipality will not be requested to cater for the development in its operational phase. The waste generated during construction will be transported off site by the contractor. Any waste that cannot be recycled will be transported to an appropriate landfill site licenced in terms of section 20 (b) of the National Environment Management Waste Act, 2008 (Act No 59 of 2008). The disposal of any construction waste will be the responsibility of the developer and should be done at least twice a week. A letter of agreement between the developer and the Permit Holder of the waste disposal site shall be kept on site. Adequate ablution facilities, toilets and change rooms must be provided on site in terms of the National Building Regulations and Building Standards Act. All drainage pipes from ablution facilities, toilets, hand wash basins, sinks, showers, etc must be connected either to the municipal sewer system or septic tanks and french drains. The septic tanks and french drains must be approved by the Department of Water Affairs. If mobile chemical toilets are used, the contents thereof must be disposed of regularly at an approved sewage treatment facility, permission for which must be obtained from the relevant local municipality. These portable toilets to be administered and serviced by a certified, registered company only. Proof that the toilets are serviced - to be kept on site.			

6. **Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)**	YES	NO	Please explain
Refer to above responses.			
7. **Is this project part of a national programme to address an issue of national concern or importance?**	YES	NO	Please explain
Over the past 20 years, South Africa and Eskom have increased access to electricity from 34% to 81% but they have made limited investments in new large-scale power generation. While other countries have built up enormous power generation capacity, South Africa (and the neighboring countries) have scraped by with power plants built many years ago. Today the South African energy system is under enormous stress and unable to meet the demand. South Africa aims to add a significant amount of base load power to the main grid and jump-start their investments in renewable technologies. This project will provide support to electrical infrastructure that will contribute to sustainable economic growth, provide for sustainable human settlements and support the mining industry.			
8. **Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)**	YES	NO	Please explain
Presently, the study area is situated within a new, active and developing mining complex. Large areas of the study area consist of roads, powerlines, a powerline servitude for large transmission lines, electrical substations, soil stockpiles, buildings and other mining-related infrastructure. The proposed infrastructure project will not affect the land use on the proposed site. In addition, it only requires a consent use and the current land use can continue.			
9. **Is the development the best practicable environmental option for this land/site?**	YES	NO	Please explain
Refer to the above. Specialist inputs guided the decision.			
10. **Will the benefits of the proposed land use/development outweigh the negative impacts of it?**	YES	NO	Please explain
Chronic power problems take a heavy toll on society. Without reliable energy, the basic services that people in rich countries take for granted cannot be offered. Since South Africa's electricity crisis began in December 2007, it has been obvious that without an immediate increase in its energy supply South Africa's economy will suffer, public services will become more expensive, and businesses will have to scale back. Failing to address South Africa's energy crisis will have dire consequences for the poor, for industry, and for neighbouring countries.			
11. **Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?**	YES	NO	Please explain
Eskom Distibution has a master plan for electricity strenghtening/supply. Similar activities will be conducted in future, as well as possible energy supply projects conducted by the local municipality.			
12. **Will any person's rights be negatively affected by the proposed activity/ies?**	YES	NO	Please explain
During the course of an EIA, all affected landowners are identified and consulted with regarding the proposed project. In this case the applicant is the landowner.			
13. **Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?**	YES	NO	Please explain
The project will not compromise the integrity of the urban edge.			

14. **Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?**	YES	NO	Please explain
"SIP 10: Electricity transmission and distribution for all: Expand the transmission and distribution network to address historical imbalances, provide access to electricity for all and support economic development." The current project contributes to the above SIP. The project provides support to the distribution network in the area and thus supports economic development.			
15. **What will the benefits be to society in general and to the local communities?**			Please explain
The project will assist to stimulate economic growth and poverty reduction.			
16. **Any other need and desirability considerations related to the proposed activity?**			Please explain
No.			
17. **How does the project fit into the National Development Plan for 2030?**			Please explain
The National Development Plan aims to elimate poverty and reduce inequality by 2030. In short, the plan amongst others, aims by 2030 to produce sufficient energy to support industry at competitive prices, ensuring access for poor households, while reducing carbon emissions per unit or power by about one-third. This current EIA application fits into the National Development Plan for 2030 in addressing the first two targets as described above.			
18. **Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.**			

IEM as set out in NEMA section 23	How has it been taken into account?
a) Promote the integration of the Principles of NEMA in terms of section 2 into the making of all decisions that may have a significant effect on the environment;	See 19. below
b) Identify, predict and evaluate the actual and potential impacts on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimizing negative impacts, maximizing benefits, and promoting compliance with the principles of environmental management as set out in Section 2;	See section D: Impact Assessment.
c) Ensure that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them;	See section D: Impact Assessment.
d) Ensure adequate and appropriate opportunity for public participation in decisions that may affect the environment;	Details of the public announcements and engagements already made are recorded in Section C: Public Participation as well as in the Comment and Response Report.
e) Ensure the consideration of environmental attributes in management and decision-making which may have a significant effect on the environment; and	See section D: Impact Assessment.
f) Identify and employ the modes of environmental management best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management as set out in Section 2 of NEMA.	See EMP attached as Appendix G.

19. **Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.**	
NEMA Principle	How has it been taken into account?
2) Environmental management must place people and their	The EAP has recognised the advantages

needs at the forefront of its concern and serve their physical, psychological, developmental, cultural and social interests equitably.	and disadvantages of the alternative sites in terms of the effects its usage would have on people (see Appendix F: Impact assessment).
3) Development must be socially, environmentally and economically sustainable.	The social, environmental and economic impacts of the use of the sites have been evaluated in the Environmental Impact Assessment.
4) a) Sustainable development requires the consideration of all relevant factors including;	
(i) That the disturbance of ecosystems and loss of biological diversity are avoided, or where they cannot be altogether avoided, are minimised and remedied	The impact of the alternatives on biodiversity have been shown to be of low significance (see Section B:9).
(ii) That pollution and degradation of the environment are avoided or, where they cannot be altogether avoided, are minimised and remedied	Means to avoid or mitigate pollution have been described in the Environmental Management Plan (EMP).
(iii) That the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where is cannot be altogether avoided, is minimised and remedied	The cultural value/features of the sites have been assessed (see Appendices D3 and D4).
(iv) That waste is avoided, or where it cannot be altogether avoided, minimised and reused or recycled where possible and otherwise disposed of in a responsible manner	Waste management measures have been suggested in the EMP.
(v) That the use and exploitation of non-renewable natural resources is responsible and equitable and takes into account the consequences of the depletion of the resource	This principle is not of key relevance in this particular project as well as not within the scope of this project.
(vi) That the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised	This principle is not of key relevance in this particular project as well as not within the scope of this project.
(vii) That a risk averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; and	A cautious approach was applied and recommendations informed by specialist's input.
(viii) That the negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.	The EMP sets out possible measures to prevent or minimise impacts.
b) Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option.	This assessment acknowledges the need for integrated environmental management and evaluates the potential consequences of use of these sites on people and the environment.
c) Environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons.	The affected parties have been identified and the equity of these impacts assessed. Thorough consultation took place between landowners and the EAP (EIA team).
d) Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing must be pursued and special measures may be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination.	This project aims to provide as an outcome for basic human needs and wellbeing.
e) Responsibility for the environmental health and safety	The health and safety consequences of the

consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle.	use of the sites for support for electricity distribution are evaluated in the assessment.
f) The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured.	Participation opportunities have been provided.
g) Decisions must take into account the interests, needs and values of all interested and affected parties, and this includes recognising all forms of knowledge, including traditional and ordinary knowledge.	The interests, needs and values of interested and affected parties are being determined through participation processes and reflected in the assessment of the impacts.
h) Community wellbeing and empowerment must be promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means.	The EMP makes suggestions for environmental awareness raising with regards to the contruction workers.
i) The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.	The environmental assessment fulfills this role and should inform decision making.
j) The right of workers to refuse work that is harmful to human health or the environment and to be informed of dangers must be respected and protected.	This priniciple is not of particular relevance in this project.
k) Decisions must be taken in an open and transparent manner and access to information must be provided in accordance with the law.	Decisions are to be taken by the relevant state department. The reasons for these decisions are expected to be documented and accessible.
l) There must be intergovernmental coordination and harmonisation of policies, legislation and actions relating to the environment	Intergovernmental coordination is being pursued through the NEMA process.
m) Actual or potential conflicts of interest between organs of state should be resolved through conflict resolution procedures.	Noted.
n) Global and international responsibilities relating to the environment must be discharged in the national interest.	Noted. This project is of local and regional relevance.
o) The environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage.	The IEM process and environmental impact assessment for this project recognise the need to protect people's common heritage.
p) The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.	Noted. The EMP makes suggestions for prevention of pollution.
q) The vital role of women and youth in environmental management and development must be recognised and their full participation therein must be promoted.	Noted.
r) Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetland and similar systems require specific attention in management and planning	No ecological communities in the study area were found to have a high ecological sensitivity.

procedures, especially where they are subject to significant human resource usage and development pressure.	

11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

The following legislation is applicable to the proposed project:
National Environmental Management Act (Act No 107 of 1998) – NEMA EIA Regulations of 2014
National Heritage Resources Act, 1999 (Act No 25 of 1999)
All provisions of the Occupational Health and Safety Act, 1993 (Act No 85 of 1993)
All provisions of the National Water Act, 1998 (Act No 36 of 1998)
National Environmental Management: Biodiversity Act, 2004 (Act No 10 of 2004)
National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) (NEM:PAA).
National Environmental Management: Waste Act (Act 59 of 2008) (NEM:WA)
National Environmental Management Air Quality Act 39 of 2004 (NEM:AQA)
Minerals and Petroleum Resources Development Act, 2002 (Act No 28 of 2002) administered by Department of Mineral Resources
Minerals and Petroleum Resources Development Amendment Act, 2008 (Act No 49 of 2008)
National Forests Act (Act No 84 of 1998)
Protected species – provincial ordinances
Conservation of Agricultural Resources Act (Act No 43 of 1983)
National Veld and Forest Fire Act (Act No 101 of 1998)
Soil Conservation Act, 1969 (Act No 76 of 1969)
Civil Aviation Technical Standards (CATS)
National Roads Act 7 of 1998
Conservation of Agricultural Resources Act 43 of 1983
National Building Regulations and Building Standards Act 103 of 1977
Health Act 63 of 1977
Hazardous Substances Act 15 of 1973
Fertiliser, Farm Feeds, Agricultural Remedies and Stock Remedies Act 36 of 1947

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?	YES	NO
If YES, what estimated quantity will be produced per month?	approximately 2,5m^3	

How will the construction solid waste be disposed of (describe)?

The disposal of any construction waste will be the responsibility of the developer and should be done at least twice a week. A letter of agreement between the developer and the Permit Holder of the waste disposal site shall be kept on site.

Where will the construction solid waste be disposed of (describe)?

An integrated waste management approach must be implemented that is based on waste minimisation and must incorporate reduction, recycling, re-use and disposal where appropriate. Any solid waste that cannot be recycled shall be disposed of at an appropriate landfill site licensed in terms of section 20 (b) of the National Environment Management Waste Act, 2008 (Act No 59 of 2008). These above measures are included as requirements in the EMP under the heading "Waste Management". Also refer to the other mitigation measures under the same heading.

Will the activity produce solid waste during its operational phase?	YES	NO

If YES, what estimated quantity will be produced per month?	0m^3

How will the solid waste be disposed of (describe)?

N/a

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

Appropriate Landfill sites in the Rustenburg Local Municipality - To be advised by the Local Municipality. A letter of agreement between the developer and the Permit Holder of the waste disposal site to be kept on site.

Where will the solid waste be disposed of if it does not feed into a municipal waste stream (describe)?

N/a

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?	YES	NO

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility?	YES	NO

If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?	YES	NO
If YES, what estimated quantity will be produced per month?		0m^3
Will the activity produce any effluent that will be treated and/or disposed of on site?	YES	NO

If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility?	YES	NO

If YES, provide the particulars of the facility:

Facility name:			
Contact person:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other that exhaust emissions and dust associated with construction phase activities?	YES	NO
If YES, is it controlled by any legislation of any sphere of government?	YES	NO

If YES, the applicant must consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If NO, describe the emissions in terms of type and concentration:

Limited dust emissions are expected as result of the construction phase activities. Mitigating measures are proposed and included in the EMP to limit impact.

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?	YES	NO

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

e) Generation of noise

Will the activity generate noise?	YES	NO
If YES, is it controlled by any legislation of any sphere of government?	YES	NO

Describe the noise in terms of type and level:

Generation of noise is expected to occur during the construction phase, but it will be a low level of noise and will occur for a limited time only. Measures, as included in the EMP, will be implemented to avoid or minimise generation of noise during construction.

13. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

Municipal	Water board	Groundwater	River, stream, dam or lake	Other	The activity will not use water

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:	0 litres	
Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water and Sanitation?	YES	NO

If YES, please provide proof that the application has been submitted to the Department of Water and Sanitation.

Relevant to this project:

- The water used to supply the site with potable water is sourced from the Maseve mine. The contractor should deliver the water to the site in an applicable water tanker. These requirements are included in the EMP under the headings “Site establishment” and “Water use”.
- The water used during construction is minimal.
- The need for dust suppression will be minimal due to the following reasons:
  - The servitude areas receive minimal bush clearance. Indigenous vegetation which does not interfere with the safe operation of the power line is left undisturbed. Further to the above, vegetation is not ploughed, but mowed and therefore no areas are left without vegetation cover.
  - In terms of access roads, existing roads are used and the impact to these roads is insignificant. The reason is that construction material is minimal (a structure - planted approximately 250 - 330m apart, cement - to plant the structure, and cable - for the overhead wires). Therefore a small number, of construction vehicles deliver the material to the site. Speed of above 30km/hour will not be exceeded. A limited/ insignificant amount of dust is therefore emitted in the atmosphere. In other words, there will be no significant construction, ground-clearing, leveling or grading of soils, moving or compacting of soils which are often associated with other forms of construction, but not with erecting of powerlines.

14. ENERGY EFFICIENCY

Describe the design measures, if any, which have been taken to ensure that the activity is energy efficient:

N/a

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

N/a

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

1. *For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area, which is covered by each copy No. on the Site Plan.*
2. *Paragraphs 1 - 6 below must be completed for each alternative.*

3. Has a specialist been consulted to assist with the completion of this section?	YES	NO
If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. - The declaration of Mr J Maree is attached in App I. All specialist reports must be contained in Appendix D.		

Property description/physical address:	**Province**	North West Province
	District Municipality	Bojanala Platinum District Municipality
	Local Municipality	Rustenburg Local Municipality
	Ward Number(s)	
	Farm name and number	Frischgewaagd 96 JQ
	Portion number	Portions 7, 10 and 14
	SG Code	
	Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.	
Current land-use zoning as per local municipality IDP/records:	Mining	
	In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.	
Is a change of land-use or a consent use application required?	YES	NO

Section B Copy No. 1:	

ALTERNATIVES 1 AND 2: 132KV LINE FROM IMPOFU SUBSTATION TO NGWEDI MTS

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

Alternative S2 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

Alternative S3 (if any): N/A

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

2.1 Ridgeline		2.4 Closed valley		2.7 Undulating plain / low hills	
2.2 Plateau		2.5 Open valley		2.8 Dune	
2.3 Side slope of hill/mountain		2.6 Plain		2.9 Seafront	
2.10 At sea					

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following?

	Alternative S1:		**Alternative S2 (if any):**		**Alternative S3 (if any): N/A**	
Shallow water table (less than 1.5m deep)	YES	NO	YES	NO	YES	NO
Dolomite, sinkhole or doline areas	YES	NO	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)	YES	NO	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO	YES	NO	YES	NO
Any other unstable soil or geological feature	YES	NO	YES	NO	YES	NO
An area sensitive to erosion	YES	NO	YES	NO	YES	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

4. GROUNDCOVER

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition[E]	Natural veld with scattered aliens[E]	Natural veld with heavy alien infestation[E]	Veld dominated by alien species[E]	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an "[E] "is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

5. SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River	YES	NO	UNSURE
Non-Perennial River	YES	NO	UNSURE
Permanent Wetland	YES	NO	UNSURE
Seasonal Wetland	YES	NO	UNSURE
Artificial Wetland	YES	NO	UNSURE
Estuarine / Lagoonal wetland	YES	NO	UNSURE

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

No perennial rivers or streams present
No wetlands (including pans)
Only watercourse is a highly seasonal, erratic shallow drainage line with a small catchment area (Marked above as non-perennial river)

6. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

Natural area	Dam or reservoir	Polo fields
Low density residential	Hospital/medical centre	Filling station [H]
Medium density residential	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation
Informal residential[A]	Church	Agriculture
Retail commercial & warehousing	Old age home	River, stream or wetland
Light industrial	Sewage treatment plant[A]	Nature conservation area
Medium industrial [AN]	Train station or shunting yard [N]	Mountain, koppie or ridge
Heavy industrial [AN]	Railway line [N]	Museum
Power station	Major road (4 lanes or more) [N]	Historical building
Office/consulting room	Airport [N]	Protected Area

Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam[A]	Sport facilities	Archaeological site
Quarry, sand or borrow pit	Golf course	Other land uses (describe)

If any of the boxes marked with an "[N] "are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

A few closed reservoirs for potable water for the mine and nearby township Sewage works – two closed dry systems exclusively for the mine

If any of the boxes marked with an "[An]" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

Heavy industrial – entire study area is within the working grounds of a platinum mine (Maseve Mine) A – Spoil heap / slimes dam – a tailings dump for the platinum mine rock is within 500m of the study site

If any of the boxes marked with an "[H]" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/a

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)	YES	NO
Core area of a protected area?	YES	NO
Buffer area of a protected area?	YES	NO
Planned expansion area of an existing protected area?	YES	NO
Existing offset area associated with a previous Environmental Authorisation?	YES	NO
Buffer area of the SKA?	YES	NO

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

7. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:	YES	NO
	Uncertain	
During the survey no sites of cultural heritage significance were located on or close (within 20m) to the site.		

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

A Phase I Heritage Impact Assessment (HIA) study was done and no heritage resources as outlined in Section 3 of the National Heritage Resources Act 25 of 1999 were found in the project area.
From a heritage perspective there are no specific preference for any of the alternative routes.
If any evidence of archaeological sites or remains (eg, remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, marine shell and charcoal/ash concentrations), unmarked human burials, or other categories of heritage resources are found during the proposed activities, SAHRA APM Unit (Colette Scheermeyer 021 462 4502) must be alerted immediately, and a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contacted as soon as possible to inspect the findings. If the newly discovered heritage resources prove to be of archaeological significance, a Phase 2 rescue operation might be necessary.

	YES	NO
Will any building or structure older than 60 years be affected in any way?		
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES	NO

If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

Rustenburg Local Municipality
There has been a steady increase in the labour force participation rate between 1996 and 2010. This has been in line with the national labour force participation rate which has also indicated a steady increase. It is positive to see that the RLM unemployment rate has steadily decreased over the period from 1996 to 2010.
266 471 people are economically active (employed or unemployed but looking for work), and of these, 26,4% are unemployed.
34,7% of the 142 219 economically active youth (15 – 34 years) in the municipality are unemployed. Half of the people are employed in the mining sector (98 956 individuals), followed by trade (28 075) and community services (15 190). Apart from the mining sector, the RLM is quite diversified in terms of the other sectors found in the area.

Economic profile of local municipality:

Rustenburg Local Municipality

266 471 people are economically active (employed or unemployed but looking for work), and of these, 26,4% are unemployed.

Employment Status	Number
Employed	196080
Unemployed	70391
Discouraged Work Seeker	11265
Not Economically Active	120867

Income	Percentage
None income	16,8%
R1 - R4,800	2,7%
R4,801 - R9,600	4,1%
R9,601 - R19,600	11,2%
R19,601 - R38,200	17,2%
R38,201 - R76,4000	23,1%
R76,401 - R153,800	12,1%
R153,801 - R307,600	7,1%
R307,601 - R614,400	4%
R614,001 - R1,228,800	1,2%
R1,228,801 - R2,457,600	0,3%
R2,457,601+	0,2%
R2,457,601+	0,1%

Level of education:

Rustenburg Local Municipality

Of those aged 20 years and older, 5,4% have completed primary school, 36,2% have some secondary education, 31,1% have completed matric, and 8,9% have some form of higher education, while 5,4% of those aged 20 years and older have no form of schooling.

Group	Percentage
No Schooling	4,4%
Some Primary	37%
Completed Primary	5,6%
Some Secondary	31,7%
Completed Secondary	17,8%
Higher Education	2,1%
Not Applicable	1,4%

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	Unknown	
What is the expected yearly income that will be generated by or as a result of the activity?	Unknown	
Will the activity contribute to service infrastructure?	YES	NO
Is the activity a public amenity?	YES	NO

How many new employment opportunities will be created in the development and construction phase of the activity/ies?	Unknown
What is the expected value of the employment opportunities during the development and construction phase?	Unknown
What percentage of this will accrue to previously disadvantaged individuals?	0%
How many permanent new employment opportunities will be created during the operational phase of the activity?	0
What is the expected current value of the employment opportunities during the first 10 years?	R0
What percentage of this will accrue to previously disadvantaged individuals?	0%

9. BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult http://bgis.sanbi.org or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

a) Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)

Systematic Biodiversity Planning Category				**If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan**
Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	Most of the study area was historically cultivated. It is now under intense mining operations.

b) Indicate and describe the habitat condition on site

Habitat Condition	**Percentage of habitat condition class (adding up to 100%)**	**Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).**
Natural	20%	There are no pristine, natural habitats within the study area. Natural areas have moderate impacts over the years.
Near Natural (includes areas with low to moderate level of alien invasive plants)	30%	Low levels of alien infestation. These 'near natural' areas have historically been heavily cultivated but now slowly recovering. Future mining activities on these areas are not known
Degraded (includes areas heavily invaded by alien plants)	0%	Degraded areas are more as a result of over-utilisation of natural resources. Also the study area is in a region with a low rainfall regime.
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	50%	Transformed by mining activities such as roads, buildings, etc. Other transforming areas include electrical substations and MTS.

c) Complete the table to indicate:

(i) the type of vegetation, including its ecosystem status, present on the site; and

(ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		**Aquatic Ecosystems**						
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Critical	Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands)			Estuary		Coastline	
	Endangered							
	Vulnerable							
	Least Threatened	YES	NO	UNSURE	YES	NO	YES	NO

d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

Terrestrial Ecosystems

The vegetation of the study area is representative of Zeerust Thornveld (Status – LT). However, the study area is small and is confined within a mining complex. A few acacia thorn trees are present with little to no middle layer and a fairly well developed grassy, lower layer.

No red data (endangered & threatened) species were observed during field investigations. An orange data species (*Brunsvigia radulosa*) was observed in the study area. The status of this species is Least Concern (LT).

Aquatic Ecosystems

No major aquatic ecosystems are present. Only a single highly seasonal and erratic drainge line is present. PES – C; EIS - C

SECTION C: PUBLIC PARTICIPATION

Public participation plays an important role in the compilation of environmental reports as well as the planning, design, and ultimately the implementation of the project. Public participation is a process leading to informed decision-making, through joint effort by the proponent, technical experts, governmental authorities, and systematically identified I&APs.

Texture has taken cognisance of the requirements for public participation in terms of the current 2014 EIA Regulations, and has ensured that the public participation principles are upheld. A successful Public Participation Programme (PPP) is one that is inclusive, actively engages the public and provides ample opportunity for the public to participate in the process. This document provides an overview of the PPP undertaken as part of the BA process for the proposed project.

The purpose of the PPP is to ensure that the issues, inputs and concerns of Interested and Affected Parties (I&APs) are taken into account during the decision-making process. This requires the identification of I&APs (including authorities and the public), communication of the process and findings to these I&APs and the facilitation of their input and comment on the process and environmental impacts, including issues and alternatives that are to be investigated. The steps taken during the execution of the PPP undertaken for this project are detailed in the section that follows.

1. ADVERTISEMENT AND NOTICE

Publication name	Rustenburg Herald
Date published	23 September 2015
Publication name	Beeld
Date published	23 September 2015
Site notice position	At the visitor's/ induction centre at the entrance to Maseve Mine
	At the entrance to Maseve Mine
Date placed	22 September 2015

(Refer to Appendix E1a: Proof of newspaper ads)
(Refer to Appendix E1b: Proof of site notices)

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN 733.
Include proof that the key stakeholder (other than organs of state), identified in terms of Regulation 54(2)(b) of GN R.543, received written notification of the proposed activities - Attached as Appendix E2.
Include proof that the Authorities and Organs of State identified as key stakeholders received written notification of the proposed activities - Attached as Appendix E4.

2.1 Public notification

A consultation process was undertaken with the intent of informing key community stakeholders, comprising any Tribal Authorities, the Municipal structures and the local communities (directly affected people) about the proposed development and the Basic Assessment process underway.

2.1.1 Identification of Interested and Affected Parties

- The PPP for the project was initiated with the development of a comprehensive I&AP database. The list of I&APs was updated on a regular basis during the course of the project. Refer to Appendix E5a: Register of Interested and Affected Parties for a complete list.

  - Department of Rural, Environment and Agricultural Development, Environmental Services: North West
  - Department of Rural, Environment and Agricultural Development: North West
  - Department of Agriculture, Forestry and Fisheries: Land Use and Soil Management
  - Department of Agriculture, Forestry and Fisheries: Forestry Management: North West
  - Department of Water and Sanitation: North West Regional Office
  - South African Heritage Resources Authority (submitted via SAHRIS)
  - North West Provincial Heritage Resources Authority
  - Department of Mineral Resources: North West
  - Department of Rural Development and Land Reform: North West
  - Department of Community Safety and Transport Management: North West
  - Department of Public Works and Roads: North West
  - South African National Roads Agency SOC Ltd
  - Rustenburg Local Municipality
  - Bojanala Platinum District Municipality
  - The Cradle of Humankind World Heritage Site Management Authority
  - North West Parks and Tourism Board
  - Wildlife and Environmental Society of SA: Northern Areas Region
  - Endangered Wildlife Trust
  - SA Civil Aviation Authority
  - Transnet Freight Rail
  - Eskom Transmission
  - Eskom Distribution North West Operating Unit
  - Royal Bafokeng

2.1.2 Background Information Document

- A comprehensive background information document was compiled with the main aim to identify issues, and potential impacts associated with this project. It included a description of the status quo of all relevant environmental components as well as the proceedings of the PPP and communication with registered Interested & Affected Parties (I&APs).
- On 22 September 2015 the documentation was submitted for comment to all I&APs.
- The due date for comment was 26 October 2015. This allowed for a comment period of 30 days.
- Copies of the notification to key stakeholders are included as Appendix E2a and to authorities and organs of state in Appendix E4a.

2.1.3 Landowner notification

Eskom relies on the goodwill of landowners and interested and affected parties (I&APs) to obtain rights of way, or servitudes for power lines. Hence, the landowners throughout the project area play an important roll in assisting with the identification of potential powerline corridors and substation site locations. Only one landowner (Maseve Mine) is affected by this project.

2.2 Meetings and site visits

2.2.1 Public meeting/ Open day

- Notification of an information meeting/ open day was sent to all I&APs on 22 October 2015. The meeting was conducted on 5 November 2015 at the Sundown Ranch Hotel, close to the Maseve Mine.
- The purpose of this meeting was to furnish all interested parties with information regarding the extent of the project, the proposed alternatives, and the extent of the Environmental Impact Assessment Process.

- The information meeting was conducted in the format of an open day with an invitation for attendance between 10h00 to 12h30. Project posters with information and maps of the routes were presented at the open day. (Refer to Appendix E6a for the attendance register of this meeting).
- Copies of the notification to key stakeholders are included as Appendix E2b and to authorities and organs of state in Appendix E4b.

2.2.2 Focus group meetings / One-on-one meetings

Key stakeholders were identified at the beginning of the PPP, these included: Key stakeholders, commenting authorities and landowner(s). A site visit was conducted with the client and landowner on 22 September 2015. (Refer to Appendix E5b for the register of property owners).

2.3 Distribution of Draft Basic Assessment Report for comment

On 24 November 2015 notification of the availibility of the Draft Basic Assessment Report (BAR) was submitted to all I&APs. The Draft BAR was available for comment on the Texture website using a given link. The comment period was 30 days until 15 January 2016 to allow for the festive season.

Copies of the draft BAR were submitted to the following key stakeholders:

- National Department of Environmental Affairs, Integrated Environmental Authorisations, Environment House, 473 Steve Biko Road, Arcadia, Pretoria. For Attention: The Director: Integrated Environmental Authorisations. Tel 012 399 9000.
- North West Province Department of Rural, Environment and Agricultural Development: Environmental Services, 80 Kerkstraat, RUSTENBURG, 0299. For Attention: Ms Queen Imasiku. NWP/DEA/24/2015. Tel 014 597 3597.
- South African Heritage Resource Agency, 111 Harrington Street, CAPE TOWN, 8000. For Attention: Colette Scheermeyer. Tel 021 462 4502 - (submitted via SAHRIS).
- The Department of Water and Sanitation, North West Regional Office, A22F Quaternary Catchment Crocodile West and Marico WMA. 285 Schoeman street, Botongo Plaza Oos, 15th Floor, Reception, PRETORIA. For Attention: Rens Botha, Maumela Doris, Tait Natasha, Ntili Tseliso. Tel 012 392 1308/ 082 8089560.
- Department of Agriculture, Forestry and Fisheries, Directorate: Forestry Management: North West. Corner Sekame and Dr Moroka Drive, Megacity Complex, Entrance No 4, Office 824, Unit 7, MMABATHO. For Attention: Mr Nevhufumba Lufuno, cc Mr Julius Kgomanyane. Tel 018 388 9809, Cell 0829076118/0839990119.
- Rustenburg Local Municipality. Mpheni House, C/O Beyers Naude & Nelson Mandela Drive, RUSTENBURG, 0299. For Attention Mrs L Sefike, cc K Mekgoe, Integrated Environmental Management cc Mr Khenisa, Municipal Manager cc Mr T Molwantwa, Town planning. Tel 014 590 3075/3185.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
South African Civil Aviation Authority has no objection to the routing	Noted
Endangered Wildlife Trust comments that the power line structures should be right, lines marked and routing far away from Cape Vulture colonies	The Bird Impact Assessment adressed these issues. Will be submitted to EWT
Eskom Transmisison (Tx) powerlines will be affected by the project	It is taken into account in the design of the 132kV line
Will the project have any potential impact on the operations of Transnet Freight Rail	No railway lines present in the alignment of the new power line

4. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the Final BAR as Appendix E3.

The Public Participation Programme allowed for informed and responsible decision-making by all interested and affected parties. A summary of I&AP comments and the consultant's responses to these comments are provided below. The original I&AP comments are included in Appendix E3b.

List of authorities from whom comments have been received:
South African Civil Aviation Authority
North West Province Department of Rural, Environment and Agricultural Development: Environmental Services
Eskom Transmission, AME Land Management

Key stakeholders from whom comments have been received:
Endangered Wildlife Trust

4.1 Comments received in the notification phase

This section of the report synthesises the issues and concerns identified by interested and affected parties and various stakeholders during the public participation process and can be summarised as follows:
(The original I&AP comments are included in Appendix E3a)

South African Civil Aviation Authority
23 September 2015
Comment:
Registered as an interested and affected party.
16 October 2015
Comment:
The SACAA has no objection to the routing as depicted on the KMZ file accompanying the letter of notification of the project. However should the route differ from that which is depicted, their comment will become null and void and subject to a new review of the route proposed. They request confirmation of the intended height of the structures which would be constructed to carry the power line.
Reply:
The following information was forwarded to SACAA:

- *The height of the structures can vary from 22 - 28 m depending on the terrain. A steel monopole will be used.*
- *The kmz file of the preferred Route Alternative 1 (green route) was attached. The red route is Alternative 2 and is not recommended due to its impact on a drainage line.*
- *The final maps of the proposed project.*

15 November 2015
Comment:
The SACAA position as per the mail dated 16th October remains the same. It is noted that the planned route (green line) is within the predicted routing as provided by your office.
Reply: Noted.

North West Province Department of Rural, Environment and Agricultural Development: Environmental Services
29 September 2015.
Comment:
The Department requests a hard copy of the BAR to be submitted to their official at the Rustenburg office.
Reply: Noted.

Endangered Wildlife Trust
20 October 2015
Comment:
Registered as an interested and affected party.
23 October 2015
Comment:
The Endangered Wildlife Trust's concern is around the type of structures that will be used, will the line be marked for power line collisions and is there an avi-fauna specialist appointed for this line? Please also beware that the closest Cape Vulture colony in the world to a metropolis is in the Magaliesberg which is not far from the proposed area for the power line. The wrong routing, wrong structure and unmarked power lines from a collision point of view could potentially amount to hundreds of vulture and other sources deaths. It is of vital importance that the structures should be right, lines marked and routing far away from colonies etc.
Reply:
The draft BAR and Bird Impact Assessment will be forwarded to EWT for their perusal.
The following mitigating measures are recommended:

- *The steel mono-pole is not a major electrocution hazard to birds, except in specific instances, and then only for vultures. The presence of existing transmission lines which are higher than the proposed 132kV line (and without any risk of electrocution), will most likely serve as the preferred roosting and perching substrate for birds in the study area. No major electrocution risk is therefore foreseen for the new 132kV lines.*
- *Sections of power line that will require the application of bird flight diverters (BFDs) are indicated on the accompanying sensitivity maps. The only sensitive section that will require BFDs is the seasonal drainage line area along Route Alternatives 1 & 2. Although not seen as highly necessary it is still recommended that BFDs be placed across these sections highlighted and marked (GPS coordinates) for the route finally decided upon. The GPS coordinates are provided in this report. The proposed BFD is the Double Loop Bird Flight Diverter. BFDs should be placed on the earthwires, staggered, alternating black and white, 10 metres apart. Diverters must be placed along the line in such as way that they are not only over the water itself, but are also approximately 10m beyond the channel and riparian zones of the watercourses.*
- *The construction of access roads in sensitive watercourses and any other water habitats should be avoided.*
- *No structures to be erected within 50m of the banks of any watercourse.*

Royal Bafokeng Administration
20 October 2015
Comment:
Registered as an interested and affected party.

Eskom Transmission, AME Land Management
19 October 2015
Comment:
The following Eskom Transmisison (Tx) powerlines will be affected by the proposed project:

- Eskom Tx's Matimba-Marang 1 400kV overhead power line,
- Eskom Tx's Marang-Midas 1 400kV power line,
- Eskom Tx's Matimba-Ngwedi 400kV poer line,
- Eskom Tx's Mida-Ngwedi 1&2 400kV power line and
- Eskom Tx's Marang-Ngwedi 400kV power line.

Eskom Tx will raise no objection provided its rights and services are acknowledged and respected at all times.
Reply:
The existing Eskom Tx overhead power line corridor is accommodated in the line design of the new 132kV overhead power line. The design (plan view diagram) will be forwarded to Tx for their final comment.

Department of Agriculture, Forestry and Fisheries
23 October 2015
Comment:
The Directorate: Forestry Management North West, Sub-Directorate: Forestry & Natural Resource management,

Forestry Regulation & Oversight registered as an interested and affected party.
Reply: The draft BAR will be submitted to the Department.

South African National Road Agency SOC Ltd, Northern Regional Office
26 October 2015
Comment:
SANRAL advised whom from their office will be dealing with the application.
Reply: Noted.

Transnet Freight Rail
28 October 2015
Comment:
Transnet requested if there are any railway lines around the proposed area. Will the project have any potential impacts on their operations i.e. is there any Transnet Freight Rail or railway line activity or line near (500m) from the proposed development?
Reply:
On 12 November the EAP forwarded the project maps to them.

North West Provincial Heritage Resources Authority (NWPHRA)
5 November 2015
Comment:
Mr M S Mosiane requested the Heritage Impact Assessment.
Reply:
It was submitted to him on 5 November 2015.

4.2 Written Comment received at the open day

No written comment was received at the open day.

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders.
Proof that the Authorities and Organs of State received written notification of the proposed activities is attached as Appendix E4.

6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.
Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.
A list of registered I&APs must be included as appendix E5.
Copies of any correspondence and minutes of any meetings held must be included in Appendix E6.

7. CONCLUSION OF PUBLIC PARTICIPATION PROGRAMME

In short, the study approach followed by the Consultants, entailed the following steps:

- The first phase of the Public Participation Programme (PPP) commenced on 22 September 2015 allowing for a 30-day comment period. It included the identification of key stakeholders, the distribution of information

letters (BID) with a request for registration and comment, as well as advertising of the project in the local and regional press and on site.

- In addition, notification of an information meeting on 5 November 2015 was submitted to all I&APs on 22 October 2015. The purpose of this meeting was to furnish all interested parties with information regarding the extent of the project, the proposed alternatives, and the extent of the Environmental Impact Assessment Process.
- Written comment was received in the notification phase from:
  - South African Civil Aviation Authority
  - North West Province Department of Rural, Environment and Agricultural Development: Environmental Services
  - Endangered Wildlife Trust
  - Eskom Transmission, AME Land Management
- A draft Basic Assessment Report was compiled with the main aim to identify issues, potential impacts and potential alternatives associated with this project. It included a description of the status quo of all relevant environmental components as well as the proceedings of the PPP and communication with registered Interested & Affected Parties (I&APs).
- On 24 November 2015 the draft Basic Assessment Report was distributed for comment.
- The due date for comment to the draft Basic Assessment Report is 15 January 2016. This allows for a comment period of 30 days, with cognisance of the festive season.
- Subsequent to the above, the final BAR will be submitted to DEA. The final BAR will include all concerns raised on the draft BAR and the responses thereto. The Consultants (EAPs) shall ensure that all concerns raised are addressed in appropriate detail in the final Basic Assessment Report.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

Refer to the below summary as well as Appendix F for a complete impact assessment in terms of Regulation 19(3) of GN 733.

Table 5: Summary of impacts

ACTIVITY	IMPACT SUMMARY	SIGNIFICANCE	PROPOSED MITIGATION
Construction Construction of 132kV power line	**Direct impacts**: Digging of holes and erection of poles. Stringing of wires. Very small footprint size per pole (approx. 3m by 3m). Poles spaced every approx. 200m. Little if any need to level ground, or remove trees.	Low. Study site. Medium-term.	Rehabilitate disturbed areas. Avoid erosion. Remove aliens. Avoid removing any trees. Positioning of poles (structures) to avoid any watercourses, riparian zones, drainage lines, pans and dams. Bufferzones of a minimum of 50m also to be implemented.
	Indirect impacts: Temporary construction facilities; movement of construction vehicles, machinery, workers, etc.	Low. Study Site. Short-term	Stay out of sensitive areas identified. Continually clean up and remove rubbish and unused materials. Rehabilitate temporary sites after construction.
	Cumulative impacts:	Low. Study site.	Enforce and strictly monitor implementation of mitigating measures. Ensure that proper clean up and rehabilitation is done as part of, immediately after construction phase.
Operational Periodical inspection of line. On rare and limited occasions repairs will be carried out. Does not constitute any enlargement of existing infrastructure footprint	**Direct impacts**: No additional impacts on natural environment. Very occasional maintenance in terms of replacing a conductor and even less so a structure.	Low. Study site. Short-term	If needed, temporary storage or accommodation facilities to be setup in existing built up area or disturbed areas only. See mitigating measures.
	Indirect impacts: None. Any activities to take place within the power line servitude.	Low. Study site. Short-term.	None should occur. All activities take place within the power line servitude.
	Cumulative impacts: None	Low. Short-term	None should occur.
Decommissioning	**Direct impacts**: No additional	Low. Study site.	Rehabilitate disturbed areas. Avoid

Dismantling of the 132kV line. This activity is not anticipated. Does not constitute any enlargement of existing infrastructure footprint	impacts on natural environment.	Short-term	erosion. Avoid impact to any watercourses. See mitigating measures
	Indirect impacts: None. Any activities to take place within the existing power line servitude.	Low. Study site. Short-term.	None should occur. All activities take place within the existing power line servitude.
	Cumulative impacts: None	Low. Short-term	None should occur.

2. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, the following environmental impact statement could sum up the impact that the proposed activity may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

The nature of the impact on the environment is the proposed construction and establishment of one 132kV powerline. It is evident that the biggest impact will be during the construction phase when the project is built, but the overall impact of the proposed project was calculated to be low. Post-construction impacts, such as occasional general maintenance will be insignificant. It is expected that with the proposed mitigation of impacts and the implementation of the Environmental Management Plan, the expected negative impact could be mitigated to acceptable measures.

EVALUATION METHOD FOLLOWED

The nature and extent of expected negative impacts are described directly under the heading for each impact.
Below this description for each impact, a table has been designed to facilitate evaluation of the expected negative impact in terms of significance (intensity), duration, probability and significance after mitigation.
The numerical values used for “Impact Severity” (significance / intensity) relates to the potential severity of the proposed project on the specific environmental component without any mitigation and is being evaluated and rated on a scale from 0 to 4 where the following values apply:

0 = no impact
1= low impact
2 = medium impact
3 = significant impact
4 = severe impact

The duration of the expected negative impact is supplied as either “temporary” - 0-3 years (generally during construction) or “permanent”. The probability that the expected negative impact would occur if not mitigated is rated as “low”, “medium” or “high”. The negative impacts are also evaluated in terms of the effectiveness with which it could be mitigated: “Severity of Impact after Mitigation” is rated on a scale from 0 to 4, with a severe impact after mitigation receiving a rating of 4 (and can therefore influence the viability of the project) and no impact after mitigation receiving a rating of 0.

2.1. Impacts that may result from the Planning and Design Phase

Table 6: Impacts that may result from the Planning and Design Phase

Impact on natural habitat	Site	Extent	Duration	Probability	Significance without mitigation	Significance with mitigation	Proposed mitigation
	Alternative 1	Local	Permanent	Low	2	1	The entire power line route is within the mine complex in disturbed areas. Impacts can be reduced with the implementation of mitigating and management measures. Significance of impacts by proposed activities (construction phase and post-construction phase) were calculated to be low. When taking all ecological aspects into consideration there is no significant difference between the powerline route alternatives. But the central section of Route 2 turns within the delineated area of the small drainage line. This is seen as a sensitive area, eventhough the drainage line is highly seasonal in nature, seldom active and has little to no distinct riparian zone.
	Alternative 2	Local	Permanent	Low	3	1	

Social Impact	Site	Extent	Duration	Probability	Significance without mitigation	Significance with mitigation	Proposed mitigation
	Alternative 1	Local	Temporary	High	2	1	All affected landowner(s) were consulted.
	Alternative 2	Local	Temporary	High	2	1	

Impact on avifauna	Site	Extent	Duration	Probability	Significance without mitigation	Significance with mitigation	Proposed mitigation
	Alternative 1	Local	Temporary	High	1	1	A steel mono-pole to be used for the new 132kV line. Sections of line that will require the application of bird flight diverters (BFDs) are indicated on the accompanying sensitivity maps. Sensitive sections will include dams, wetlands, rivers, streams, and drainage line crossings. The proposed BFD is the Double Loop Bird Flight Diverter. BFDs should be placed on the earthwires, staggered, alternating black and white, 10 metres apart.
	Alternative 2	Local	Temporary	High	3	1	

2.2 Impacts that may result from the Construction Phase

Table 7: Impacts that may result from the Construction Phase

Impact on natural habitat	Site	Extent	Duration	Probability	Significance without mitigation	Significance with mitigation	Proposed mitigation
	Alternative 1	Local	Temporary	High	2	1	Proper mitigating measures and recommendations have been put in place to reduce negative impacts on the watercourse. Site-specific measures for the specific property as identified by the

	Alternative 2	Local	Temporary	High	2	1	ecologist must be implemented by the Contractor during the construction phase and by Eskom and the maintenance teams during the operational phase. Refer to mitigation measures provided in App F.

Impact on water courses	Site	Extent	Duration	Probability	Significance without mitigation	Significance with mitigation	Proposed mitigation
	Alternative 1	Local	Temporary	High	2	1	Proper mitigating measures and recommendations have been put in place to reduce negative impacts on the watercourse. Refer to mitigation measures provided in App F. Positioning of poles (structures) to avoid any watercourses, riparian zones, drainage lines, pans and dams. Bufferzones of a minimum of 50m also to be implemented. Ensure small footprint during construction phase. Potential impact of Alternative Route 2 on the unnamed small non-perennial drainage line and especially in the area where the powerline would make a 90^0 turn. It is also highly likely that a WULA will be required for Route Alternative 2 in terms of a Section 21 (c) & (i) application should this route alternative be utilised.
	Alternative 2	Local	Temporary	High	3	1	

Impact on avifauna	Site	Extent	Duration	Probability	Significance without mitigation	Significance with mitigation	Proposed mitigation
	Alternative 1	Local	Temporary	High	1	1	A steel mono-pole to be used for the new 132kV line. Sections of line that will require the application of bird flight diverters (BFDs) are indicated on the accompanying sensitivity maps. Sensitive sections will include dams, wetlands, rivers, streams, and drainage line crossings. The proposed BFD is the Double Loop Bird Flight Diverter. BFDs should be placed on the earthwires, staggered, alternating black and white, 10 metres apart. The construction of access roads in sensitive watercourses and any other water habitats should be avoided. No structures to be erected within 50m of the banks of any watercourse.
	Alternative 2	Local	Temporary	High	2	1	

Risk of surface and ground water pollution	Site	Extent	Duration	Probability	Significance without mitigation	Significance with mitigation	Proposed mitigation
	Alternative 1	Local	Temporary	Medium	2	1	Mitigation measures are included in EMP to minimize impact of construction camp, waste and sewage.
	Alternative 2	Local	Temporary	Medium	2	1	

Erosion	Site	Extent	Duration	Probability	Significance without mitigation	Significance with mitigation	Proposed mitigation

	Alternative 1	Local	Temporary	Low	2	1	Refer to EMP for erosion control measures.
	Alternative 2	Local	Temporary	Low	2	1	

Solid waste	Site	Extent	Duration	Probability	Significance without mitigation	Significance with mitigation	Proposed mitigation
	Alternative 1	Local	Temporary	Medium	2	1	The construction teams should ensure that all waste is removed from the site and that they recycle the items that can be used again. Any waste that cannot be recycled will be transported to the appropriate landfill site licensed in terms of section 20 (b) of the National Environment Management Waste Act, 2008 (Act No 59 of 2008). A copy of the service agreement, to verify the disposal sites that will be accepting the waste, should be kept on site.
	Alternative 2	Local	Temporary	Medium	2	1	

Impact of labourers	Site	Extent	Duration	Probability	Significance without mitigation	Significance with mitigation	Proposed mitigation
	Alternative 1	Local	Temporary	Low	2	1	Mitigation measures to counter impact on the natural environment and limit potential for crime include specifications in terms of control of construction workers (i.e. provision of toilet and cooking facilities, provision of either accommodation facilities or transport facilities, implementation of Environmental Educational Programmes, etc.). Accommodation for labourers must either be limited to guarding personnel on the construction site (with labourers transported to and from existing neighbouring towns) or a separate fenced and controlled area where proper accommodation and relevant facilities are provided. Eskom and the contractors should maximise the use of local labour where possible by developing a strategy to involve local labour in the contractor teams and construction process.
	Alternative 2	Local	Temporary	Low	2	1	

Employ ment	Site	Extent	Duration	Probability	Significance without mitigation	Significance with mitigation	Proposed mitigation
	Alternative 1	Local	Temporary	Medium	2	1	It should be ensured that contractors use local skills, or train semi-skilled people or re-skill appropriate candidates for employment purposes where possible. The applicant must train safety representatives, managers and workers in workplace safety. All applicable safety standards and regulations, including for subcontractors must be enforced.
	Alternative 2	Local	Temporary	Medium	2	1	

Local Procure ment	Site	Extent	Duration	Probability	Significance without mitigation	Significance with mitigation	Proposed mitigation
	Alternative 1	Local	Temporary	Medium	2	1	Local procurement should be aimed at as far as possible. Local sourcing of materials would assist in providing more economic
	Alternative 2	Local	Temporary	Medium	2	1	

							and employment opportunities for the local people.

Local Economic Benefits	Site	Extent	Duration	Probability	Significance without mitigation	Significance with mitigation	Proposed mitigation
	Alternative 1	Regional	Temporary	Medium	2	2	Maximise the use of local labour even if the number of locals that would be employed would be limited. Accommodate, but regulate the activities of vendors in the vicinity of the construction areas and at the construction camps.
	Alternative 2	Regional	Temporary	Medium	2	2	

Daily moving patterns	Site	Extent	Duration	Probability	Significance without mitigation	Significance with mitigation	Proposed mitigation
	Alternative 1	Local	Temporary	Medium	2	2	Property owner that would be affected by the construction should be consulted prior to the construction phase with regards to the construction schedules, transportation corridors, construction of additional access roads and construction methods to be used. The construction of access roads should be kept to a minimum and rather use the existing infrastructure, as the construction and maintenance of these roads are very costly, impact on the daily movement patterns, and create a potential for erosion.
	Alternative 2	Local	Temporary	Medium	2	2	

Impact on Safety and Security	Site	Extent	Duration	Probability	Significance without mitigation	Significance with mitigation	Proposed mitigation
	Alternative 1	Local	Temporary	Medium	2	2	Safety measures are included in the EMP.
	Alternative 2	Local	Temporary	Medium	2	2	

Impact of dust pollution	Site	Extent	Duration	Probability	Significance without mitigation	Significance with mitigation	Proposed mitigation
	Alternative 1	Local	Temporary	Medium	2	1	Water trucks must be used on roads and construction sites to dampen dust. Appropriate dust suppression techniques must be implemented on all exposed surfaces to minimise and control airborne dust. Such measures must be include wet suppression, chemical stabilisation, the use of a wind fence, covering surfaces with straw chippings and re-vegetation of open areas.
	Alternative 2	Local	Temporary	Medium	2	1	

Impact on cultural heritage resources	Site	Extent	Duration	Probability	Significance without mitigation	Significance with mitigation	Proposed mitigation
	Alternative 1	Local	Temporary	Medium	2	1	If archaeological/ palaeontological or other types of heritage resources are uncovered during construction/ground clearance activities SAHRA (Mrs Colette Scheermeyer, tel: 021 462 4502) and a professional archaeologists/ palaeontologist dependent on the finds must be alerted immediately to inspect the finds. A rescue
	Alternative 2	Local	Temporary	Medium	2	1	

							excavation may be required if the identified heritage resource/s is deemed to be significant.

Visual Impact	Site	Extent	Duration	Probability	Significance without mitigation	Significance with mitigation	Proposed mitigation
	Alternative 1	Local	Temporary	Medium	2	1	The procedures for vegetation clearance and maintenance within overhead power line servitudes must be implemented. Refer to App F for these procedures.
	Alternative 2	Local	Temporary	Medium	2	1	

Loss of agricultural land	Site	Extent	Duration	Probability	Significance without mitigation	Significance with mitigation	Proposed mitigation
	Alternative 1	Local	Permanent	Medium	2	1	Should the construction of the power line impact on any agricultural activities, this impact will only be for a limited period during construction. An access road of 8m wide could be cleared to construct the power line. After construction, normal agricultural activites could continue under the power line as usual. It is submitted that for this project, the servitude area will not interfere with any agricultural activities, as this is inside a mine area.
	Alternative 2	Local	Permanent	Medium	2	1	

2.3 Impacts that may result from the Operational Phase

Table 8: Impacts that may result from the Operational Phase

Impact of alien vegetation	Site	Extent	Duration	Probability	Significance without mitigation	Significance with mitigation	Proposed mitigation
	Alternative 1	Local	Permanent	High	2	1	Removal of alien invasive species or other vegetation and follow-up procedures must be in accordance with the Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983). Mechanical control of alien species to be implemented within three (3) months of completion of construction of the powerline. Thereafter ever six months. No chemical control (herbicides) to be used in the control of alien plants. All control of weeds to be mechanical in nature. Cleared alien vegetation must not be dumped on adjacent intact vegetation during clearing, but should be temporarily stored in a demarcated area.
	Alternative 2	Local	Permanent	High	2	1	

Impact on avifauna	Site	Extent	Duration	Probability	Significance without mitigation	Significance with mitigation	Proposed mitigation
	Alternative 1	Local	Temporary	High	1	1	Sections of line that will require the application of bird flight diverters (BFDs) are indicated on the accompanying sensitivity maps. Sensitive sections will include dams, wetlands, rivers, streams, and drainage line crossings. The proposed BFD is the Double Loop
	Alternative 2	Local	Temporary	High	2	1	

							Bird Flight Diverter. BFDs should be placed on the earthwires, staggered, alternating black and white, 10 metres apart.

2.4 Impacts that may result from the Decommissioning Phase

Table 9: Impacts that may result from the Decommissioning Phase

Waste Management	Site	Extent	Duration	Probability	Significance without mitigation	Significance with mitigation	Proposed mitigation
	Alternative 1	Local	Temporary	High	2	1	Waste generated has to be managed accordingly and entails correct on-site storage, transportation and disposal
	Alternative 2	Local	Temporary	High	2	1	

2.5 Cumulative Impacts

Table 10: Cumulative Impacts

Insensitive clearing can cause the destruction of habitat	Site	Extent	Duration	Probability	Significance without mitigation	Significance with mitigation	Proposed mitigation
	Alternative 1	Local	Permanent	High	2	1	Project should adhere to the stipulated mitigation measures to limit impact to the natural habitat, to surface water, erosion etc.
	Alternative 2	Local	Permanent	High	2	1	

SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?	YES	NO

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment).

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application.

- If any evidence of archaeological sites or remains (e.g., remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments and charcoal/ash concentrations), fossils or other categories of heritage resources are found during the proposed activities, SAHRA APM Unit (Colette Scheermeyer 021 462 4502), must be alerted immediately, and a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contacted as soon as possible to inspect the findings. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance a Phase 2 rescue operation might be necessary.
- No temporary accommodation or temporary storage sites to be erected within 100m of the any river, stream, drainage line, pan, wetland or farm dam.
- No temporary facilities (including portable toilets) to be positioned within the 50m bufferzone of the drainage line.
- Only existing roads to be used by vehicles during construction.
- Positioning of the foundation slabs for the structures must be a minimum of 50m away from the edge of all drainage lines. That is, outside of the demarcated 50m buffer zones.
- No foundation slabs or structures to be erected directly within the main channel of any watercourse, including seasonal drainage lines even if dry at the time of construction.
- No foundation slabs or structures to be erected directly within the open water zone of a farm dam or any other artificial impoundment.
- No indigenous trees, shrubs or reeds outside of the powerline corridor to be removed. Patches of exotic trees within the corridor may be totally removed. The stumps of these trees to be treated with the recommended poisons to prevent budding and regrowth, but no poisons to be applied directly to the surrounding soils.
- No construction activities take place directly within the demarcated areas of any watercourse, including its' riparian zone. No vehicles to drive in the demarcated areas and no construction material to be stored or even placed temporarily in these areas.
- Existing watercourse crossings and existing roads must be used during construction and the transporting of materials and equipment. No new watercourse crossing to be created, including simply driving through a watercourse and thus creating a two-track vehicle path. Creating a new access across a watercourse will trigger the need for a water use licence (WUL).
- Sections of line that will require the application of bird flight diverters (BFDs) are indicated on the accompanying sensitivity maps. Sensitive sections will include dams, wetlands, rivers, streams, and drainage line crossings. The proposed BFD is the Double Loop Bird Flight Diverter. BFDs should be placed on the earthwires, staggered, alternating black and white, 10 metres apart.
- The construction of access roads in sensitive watercourses and any other water habitats should be avoided.

In summary the following is recommended for construction:

The 132kV line from Impofu substation to Ngwedi MTS

The EIA will seek to authorise a **corridor** for the power line and not just for the actual servitude width of the power line. The maps attached in Appendix A indicates/highlights the whole area that was investigated to

inform DEA on the area that is part of the authorisation. (Area indicated with a black border and co-ordinates in Table below). The wider area that was investigated will allow future potential amendments to the EA should it be necessary (at a later stage).

Table : Co-ordinates of the corners of the site (wider area) that is investigated

Description	Lat (DDMMSS)	Long (DDMMSS)
North East	25°24'12.97"S	27° 5'23.23"E
North West	25°24'24.43"S	27° 4'54.05"E
South East	25°24'57.72"S	27° 5'28.29"E
South West	25°25'10.62"S	27° 4'51.88"E

The EIA recommends Route Alternative 1 for construction

Table : Coordinates provided for the centre line of the route

Route Alternatives	Latitude (S)	Longitude (E)
Alternative Route 1 (Preferred Route)		
Starting point (Impofu Sub)	25°25'0.65"S	27° 4'55.73"E
Middle point	25°24'48.50"S	27° 5'14.19"E
End point (Ngwedi MTS)	25°24'28.72"S	27° 5'10.20"E
Alternative Route 2		
Starting point (Impofu Sub)	25°25'0.65"S	27° 4'55.73"E
Middle point	25°24'50.41"S	27° 5'19.37"E
End point (Ngwedi MTS)	25°24'28.72"S	27° 5'10.20"E

Route Alternative 1 (preferred alternative)

Route Alternative 1 is the preferred route alternative for the proposed 132kV powerline.

The length of the line is short, at only about 1,4km. The route exists the Impofu Substation in an easterly direction, then turns northeast and then north. It enters the Ngwedi MTS from the south end. The veld through which the servitude passes is predominantly open grassland with a few, short thorn trees/ shrubs. No sensitive areas are crossed and no watercourses either.

Route Alternative 2

Route Alternative 2 is the alternative route investigated as a possible option for the proposed 132kV powerline. It is however, not the preferred route. The entire route is within the mine complex in disturbed areas and open grassland bushveld. Route 2 is also short, but slightly longer than Route 1, at approximately 1,5km in total length. Both route alternatives follow the exact same servitude when leaving / entering the two electrical stations (Impofu and Ngwedi). The central section of Route 2 turns within the delineated area of the small drainage line. This is seen as a sensitive area, eventhough the drainage line is highly seasonal in nature, seldom active and has little to no distinct riparian zone.

Route Alternative recommendations

When taking all impacts into account there is the issue of the higher potential impact in relation to watercourses by Alternative Route 2.

As can be seen from a close up of the delineated watercourse, Alternative Route 2 will turn directly within the main channel of the drainage line. This is not acceptable in terms of the natural environment. It is also highly likely that a WULA will be required for Route Alternative 2 in terms of a Section 21 (c) & (i) application should this route alternative be utilised.

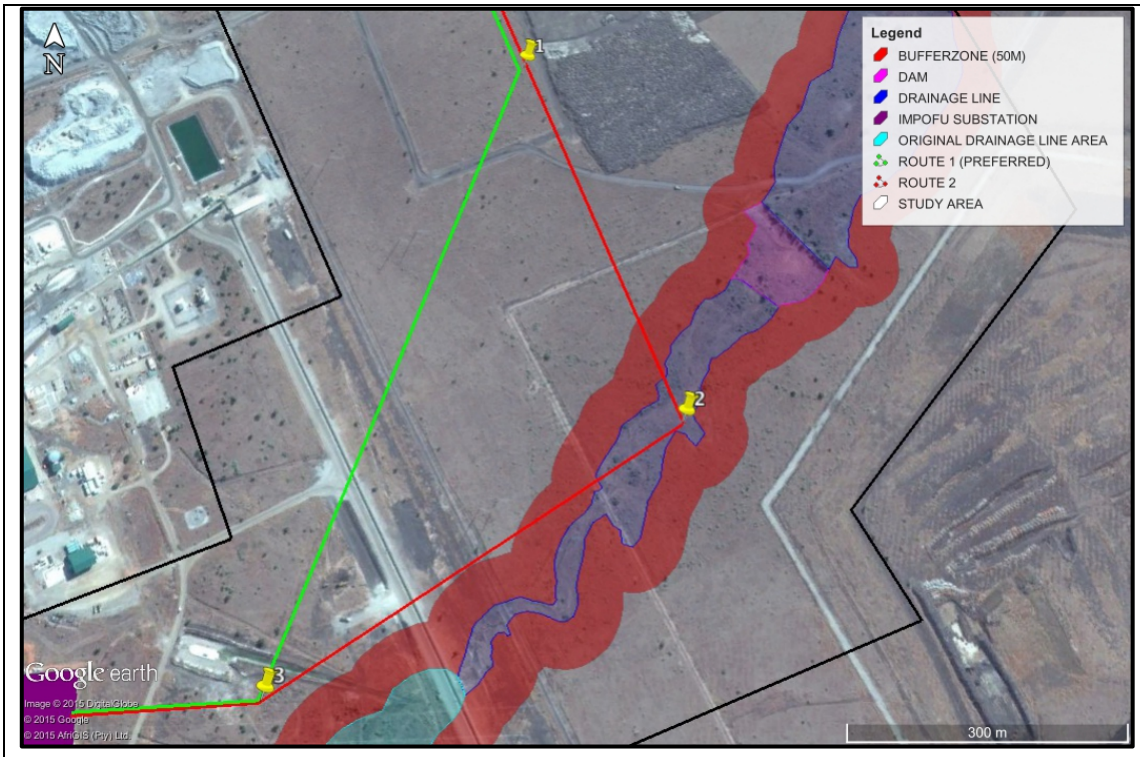

Figure : Potential WULA area along Route Alternative 2

Taking all of the above issues into account, the Ecological (Biodiversity) recommended line variant for the proposed project is: **Route Alternative 1**. From a Heritage (and Palaeontological) perspective there are no specific preference for any of the alternative routes. The Avifauna Impact Assessment confirms that Alternative 2 impacts directly on a drainage line. The drainage line is delineated along with a 50m bufferzone. It is recommended that Bird Flight Diverters be placed along Route Alternative 2 across these sections highlighted and marked (GPS coordinates).
The recommended line variant route, also in terms of avifauna therefore is: **Route Alternative 1**.

Is an EMP attached?	YES	NO

The EMP must be attached as Appendix G.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix H.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix I.

Any other information relevant to this application and not previously included must be attached in Appendix J.

Ria Pretorius

NAME OF EAP

24 November 2015

SIGNATURE OF EAP DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Plan (EMP)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information