ENVIRONMENTAL IMPACT ASSESSMENT
DRAFT BASIC ASSESSMENT REPORT

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ESKOM PARADISE - FONDWE POWER LINE DEVIATION

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GLOSSARY OF TERMS

Activity (Development) – an action either planned or existing that may result in environmental impacts through pollution or resource use.

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.

Alternative – a possible course of action, in place of another, of achieving the same desired goal of the proposed project. Alternatives can refer to any of the following but are not limited to: site alternatives, site layout alternatives, design or technology alternatives, process alternatives or a no-go alternative. All reasonable alternatives must be rigorously explored and objectively evaluated.

Applicant – the project proponent or developer responsible for submitting an environmental application to the relevant environmental authority for environmental authorisation.

Biodiversity – the diversity of animals, plants and other organisms found within and between ecosystems, habitats, and the ecological complexes.

Construction – means the building, erection or establishment of a facility, structure or infrastructure that is necessary for the undertaking of a listed or specified activity but excludes any modification, alteration or expansion of such a facility, structure or infrastructure and excluding the reconstruction of the same facility in the same location, with the same capacity and footprint.

Cumulative Impacts – impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities to produce a greater impact or different impacts.

Direct impacts – impacts that are caused directly by the activity and generally occur at the same time and at the same place of the activity. These impacts are usually associated with the construction, operation or maintenance of an activity and are generally quantifiable.

Ecosystem – a dynamic system of plant, animal (including humans) and micro-organism communities and their non-living physical environment interacting as a functional unit. The basic structural unit of the biosphere, ecosystems are characterised by interdependent interaction between the component species and their physical surroundings. Each ecosystem occupies a space in which macro-scale conditions and interactions are relatively homogenous.

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

Environment – In terms of the National Environmental Management Act (NEMA) (Act No 107 of 1998) (as amended), “Environment” means the surroundings within which humans exist and that are made up of:

a) the land, water and atmosphere of the earth;
b) micro-organisms, plants and animal life;
c) any part or combination of (i) of (ii) and the interrelationships among and between them; and
d) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing.

Environmental Assessment (EA) – the generic term for all forms of environmental assessment for projects, plans, programmes or policies and includes methodologies or tools such as environmental impact assessments, strategic environmental assessments and risk assessments.

Environmental Authorisation – an authorisation issued by the competent authority in respect of a listed activity, or an activity which takes place within a sensitive environment.

Environmental Assessment Practitioner – the individual responsible for planning, management and coordination of environmental impact assessments, strategic environmental assessments, environmental management programmes or any other appropriate environmental instrument introduced through the EIA Regulations.

Environmental Impact – a change to the environment (biophysical, social and/ or economic), whether adverse or beneficial, wholly or partially, resulting from an organisation's activities, products or services.

Environmental Impact Assessment (EIA) – the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made.

Environmental Issue – a concern raised by a stakeholder, interested or affected parties about an existing or perceived environmental impact of an activity.

Environmental Management - ensuring that environmental concerns are included in all stages of development, so that development is sustainable and does not exceed the carrying capacity of the environment.

Environmental Management Programme - A detailed plan of action prepared to ensure that recommendations for enhancing or ensuring positive impacts and limiting or preventing negative environmental impacts are implemented during the life cycle of a project. The EMPr focuses on the construction phase, operation (maintenance) phase and decommissioning phase of the proposed project.

Expansion - means the modification, extension, alteration or upgrading of a facility, structure or infrastructure at which an activity takes place in such a manner that the capacity of the facility or the footprint of the activity is increased.

Fatal Flaw – issue or conflict (real or perceived) that could result in developments being rejected or stopped.

General Waste – household water, construction rubble, garden waste and certain dry industrial and commercial waste which does not pose an immediate threat to man or the environment.

Hazardous Waste – waste that may cause ill health or increase mortality in humans, flora and fauna.

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

Indirect impacts – indirect or induced changes that may occur as a result of the activity. These types if impacts include all of the potential impacts that do not manifest immediately when the activity is undertaken or which occur at a different place as a result of the activity.

Integrated Environmental Management – a philosophy that prescribes a code of practice for ensuring that environmental considerations are fully integrated into all stages of the development and decision-making process. The IEM philosophy (and principles) is interpreted as applying to the planning, assessment, implementation and management of any proposal (project, plan, programme or policy) or activity – at local, national and international level - that has a potentially significant effect on the environment. Implementation of this philosophy relies on the selection and application of appropriate tools for a particular proposal or activity. These may include environmental assessment tools (such as strategic environmental assessment and risk assessment), environmental management tools (such as monitoring, auditing and reporting) and decision-making tools (such as multi-criteria decision support systems or advisory councils).

Mitigate – the implementation of practical measures designed to avoid, reduce or remedy adverse impacts or enhance beneficial impacts of an action.

No-Go Option – in this instance the proposed activity would not take place, and the resulting environmental effects from taking no action are compared with the effects of permitting the proposed activity to go forward.

Open Space – environmentally sensitive areas which are not suitable for development and consist of watercourses, buffers, floodplains, steep slopes, sensitive biodiversity and/or areas of cultural or heritage significance.

Registered Interested and Affected Party – an interested and affected party whose name is recorded in the register opened for that application.

Rehabilitation – a measure aimed at reinstating an ecosystem to its original function and state (or as close as possible to its original function and state) following activities that have disrupted those functions.

Scoping – the process of determining the spatial and temporal boundaries (i.e. extent) and key issues to be addressed in an environmental assessment. The main purpose of scoping is to focus the environmental assessment on a manageable number of important questions. Scoping should also ensure that only significant issues and reasonable alternatives are examined.

Sensitive environment – any environment identified as being sensitive to the impacts of the development.

Significance – significance can be differentiated into impact magnitude and impact significance. Impact magnitude is the measurable change (i.e. magnitude, intensity, duration and likelihood). Impact significance is the value placed on the change by different affected parties (i.e. level of significance and

acceptability). It is an anthropocentric concept, which makes use of value judgements and science-based criteria (i.e. biophysical, social and economic).

Stakeholder engagement – the process of engagement between stakeholders (the proponent, authorities and I&APs) during the planning, assessment, implementation and/or management of proposals or activities.

Sustainable Development – development which meets the needs of current generations without hindering future generations from meeting their own needs.

Watercourse – means:
a) a river or spring;
b) a natural channel or depression in which water flows regularly or intermittently;
c) a wetland, lake or dam into which, or from which, water flows; and
d) any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse as defined in the National Water Act, 1998 (Act No. 36 of 1998) and a reference to a watercourse includes, where relevant, its bed and banks.

Wetland – means land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil.

ACRONYMS

CBA	Critical Biodiversity Areas
CBD	Central Business District
CMA	Catchment Management Agencies
CSIR	Council for Scientific and Industrial Research
DFEE	Department of Forestry, Fisheries and Environment
DMRE	Department of Mineral Resources and Energy
DSOE	Desired State of the Environment
DWS	Department of Water and Sanitation
ECF	Environmental Constraints Framework
EAP	Environmental Assessment Practitioner
ECA	Environment Conservation Act, 1989 (Act No. 73 of 1989)
EIA	Environmental Impact Assessment
EIS	Ecological Importance & Sensitivity
EMC	Environmental Management Class
EMP	Environmental Management Plan
EWR	Ecological Water Requirements
GIS	Geographic Information System
HGM	Hydrogeomorphic
IBA	Important Bird Area(s)
IDP	Integrated Development Plan
I&AP	Interested and/or affected parties
MAP	Mean Annual Precipitation
MASL	Metres above sea level
NBA	National Biodiversity Assessment
NEMA	National Environmental Management Act
NFEPA	National Freshwater Ecosystem Priority Areas
NHRA	National Heritage Resources Act
NPAES	National Protected Areas Expansion Strategy
NWA	National Water Act
PAES	Protected Areas Expansion Strategy
PES	Present Ecological State
PDA	Primary Drainage Area
PPP	Public participation process
QDA	Quaternary Drainage Area
REC	Recommended Ecological Category (or Class)
REMC	Recommended Ecological Management Category (or Class)
RVI	Riparian Vegetation Index
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
SWSA	Strategic Water areas of South Africa
WMA	Water Management Areas
WUL	Water Use Licence
WULA	Water Use Licence Application

1 INTRODUCTION

Eskom Holdings SOC Ltd (the applicant) appointed Setala Environmental (Pty) Ltd as the independent environmental assessment practitioner (EAP) to undertake the Environmental Impact Assessment (EIA) for a proposed electricity strengthening project.

The National Department of Environmental Affais (DEA) issued Environmental Authorisation for the construction of a 132kV power line from the existing Paradise Substation to the proposed Fondwe Substation, on 05 October 2015, (DEA Ref 14/12/16/3/3/1/1337) and a subsequent amendment authorised on 25 March 2019. DEA Ref 14/12/16/3/3/1/1337/AM3.

Following on the above, an application for authorisation for deviation of a section of the abovementioned powerline is submitted to the National Department of Forestry, Fisheries and the Environment (DFFE), in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and the Environmental Impact Assessment (EIA) Regulations of 2014, as amended.

This Basic Assessment will provide information about the proposed deviation of a section of the authorised Eskom 132kV overhead power line. The scope is restricted to this component of the project.

2 APPROACH TO THE BASIC ASSESSMENT PROCESS

The approach followed by the consultants is based on the specifications for the 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.
The Department of Forestry, Fisheries and the Environment (DFFE) is the lead authority for this Environmental Impact Assessment (EIA) process and the development needs to be authorised by this Department in accordance with the National Environmental Management Act 107 of 1998 (NEMA) (as amended).

To ensure that all requirements and processes in terms of the Acts are followed, the following tasks need to be conducted. The following has to be submitted to the DFFE:

- Application form for Authorisation
- Draft Basic Assessment Report
- Environmental Management Programme (EMPr)
- Final Basic Assessment Report

The environmental authority will review the Application and final Basic Assessment Report and the following decisions may be made:

- Grant authorisation of the activity
- Refuse the activity
- Request further information or investigations
- Refer the application to a scoping process where substantial additional investigations or assessments are required in order to make a decision.

3 PROJECT LOCALITY

The proposed project is located ± 35kms to the northeast of Louis Trichardt in the jurisdiction of Thulamela Local Municipality, Vhembe District Municipality, Limpopo Province. The project is proposed on the Remainder of the farm Tondonwe 198 MT. (The final pylon/structure positions to be confirmed). The proposed project is set out in the Location Map below. (Refer to Appendix A for Site Location maps.)

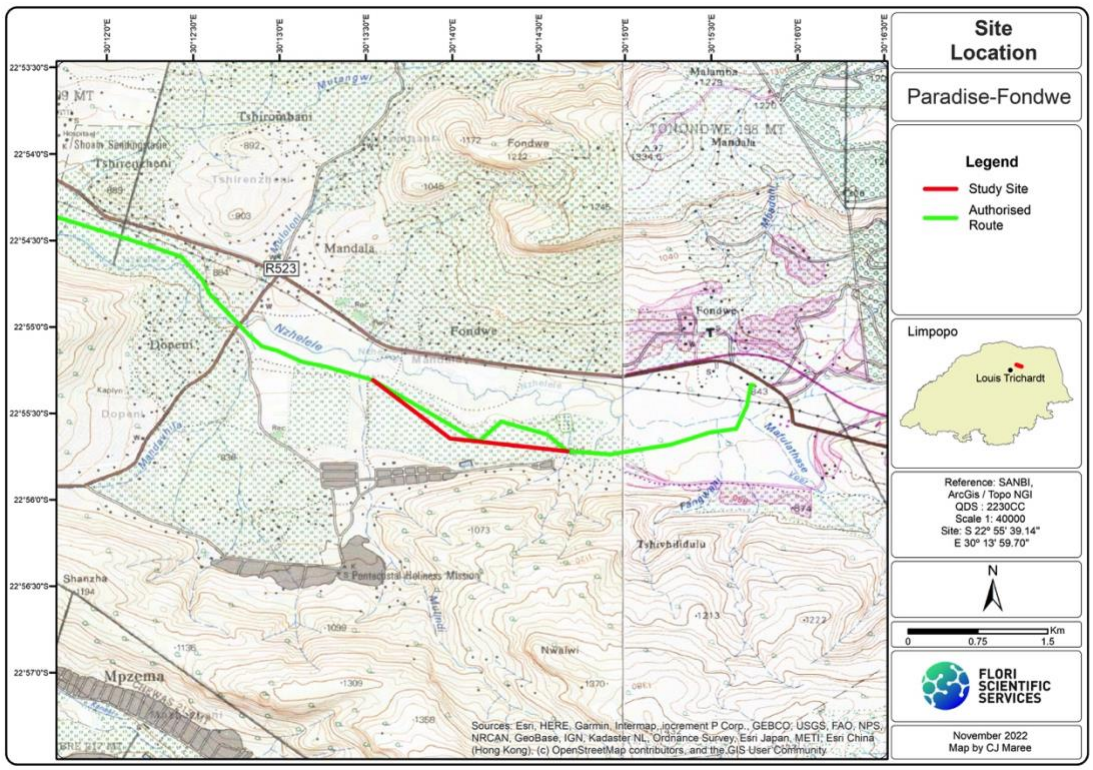

Figure 1: Site Location

The proposed line deviation (study site) is approximately 2,16km in length and is situated south of the R523, east of Louis Trichardt Rd; and west of Fondwe Substation (Figure 1, Figure 2).

- Existing Fondwe Substation: 22°55'20.94"S; 30°15'46.24"E.
- Start of Line Deviation at Pole 73: 22°55'18.50"S; 30°13'32.48"E.
- End of Line Deviation at Pole 82: 22°55'43.24"S; 30°14'40.10"E.
- Quarter Degree Square (QDS): 2230CC.
- Quaternary Drainage Area (QDA): A80A.

Figure 2: Site location (Goorgle Earth)

4 PROPERTY DESCRIPTION

The proposed project is located on Remainder of the farm Tondonwe 198 MT, in the jurisdiction of Thulamela Local Municipality, Vhembe District Municipality, Limpopo Province.

5 PROJECT DESCRIPTION

Eskom Holdings SOC 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 reliable provision of electricity by Eskom is critical for industrial development and related employment and sustainable development in South Africa. As electricity cannot practically be stored on a significant scale, 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.

The activity will ensure that the electrical needs of the province, as stated in the Provincial Spatial Development Framework (PSDF), are satisfied. This project is initiated by Eskom to ensure continuous reliable supply for the wider Makhado Area.

Background to the project

1 Environmental Authorisation was issued on 05 October 2015 (DEA Ref 14/12/16/3/3/1/1337) for the construction of a 132kV power line from the existing Paradise Substation to the proposed Fondwe Substation within the Thulamela and Makhado Local Municipalities, Limpopo Province. Refer to Appendix I1.

The environmental authorisation was for the following:
GN R 544 Item 10(i):
The construction 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.
Activity description: A 20km 132KV line to be constructed outside an urban area from Paradise sub to the proposed Fondwe sub.
GN R 546 Item 3:
The construction of masts or towers of any material or type used for telecommunication broadcasting or radio transmission purposes where the mast (b) will exceed 15 metres in height.
Activity description: A 36 metres communication tower to be constructed within proposed Fondwe substation.
Note: Subsequent to the abovementioned Authorisation the Fondwe substation was constructed.

2 Subsequently, an amendment to the above project was authorised on 25 March 2019. DEA Ref 14/12/16/3/3/1/1337/AM3.
The amendment was in respect of four (4) deviations in the alignment of the originally authorised 132kV powerline. (Amendment hereto attached as App I2).

3 Subsequent to the above the following is now required:

- Deviation of a section of the 20km overhead 132kV line, authorised in 2019, from the existing Paradise Substation to the existing Fondwe substation. (Listing Notice 1 Activity 11)

The deviation as investigated in this current report, is required to avoid new dwellings in the authorised corridor of 2019. Since the original authorisation of 2015, the power line route had to be amended a number of times. The section between pylon 73 to 84 is presented as part of the final alignment between Paradise substation and Fondwe substation. At this stage, no viable alternatives for the deviation could be identified or investigated.

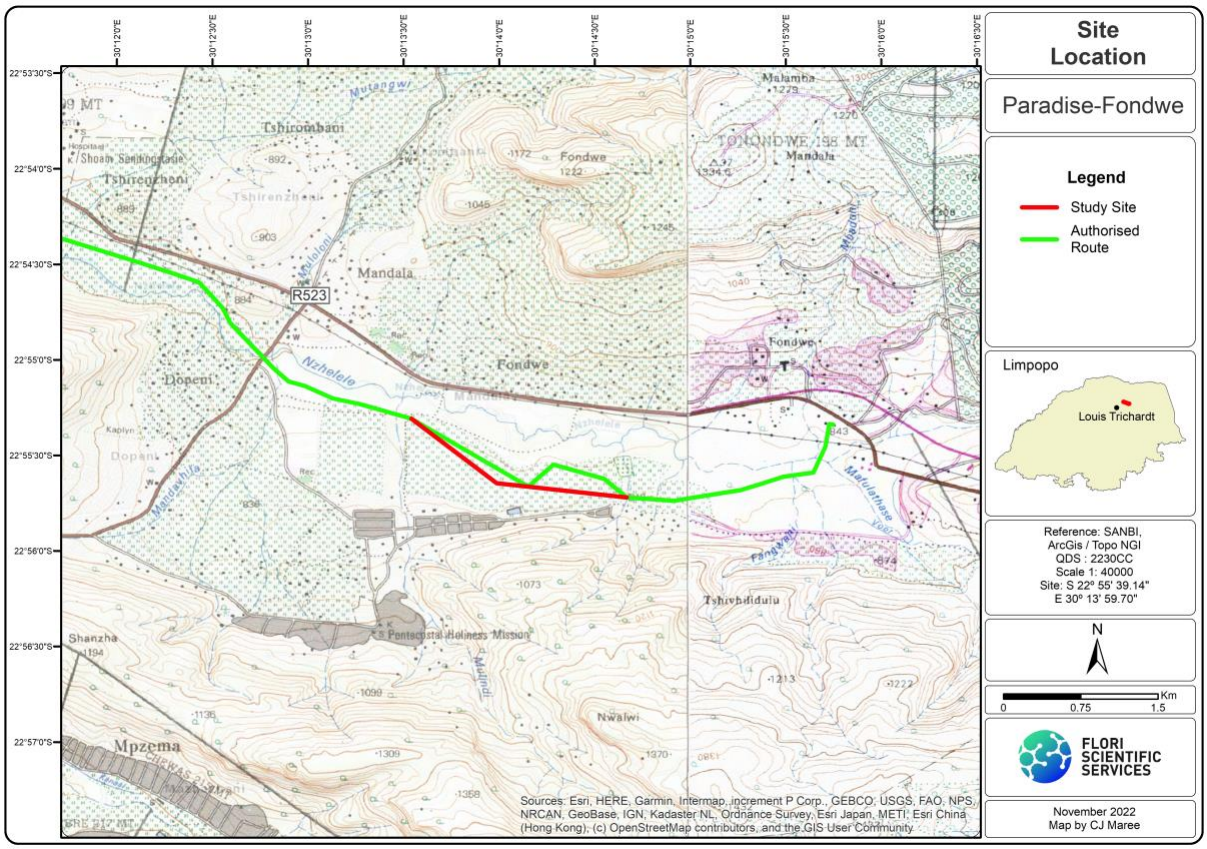

Figure 3: Authorised Paradise-Fondwe power line (2019) in green. Proposed deviation in red.

The following is relevant:

- A deviation to the authorised power line (2019) is now required.
- The deviation was not assessed as part of the environmental application done in 2019. Therefore, a new Basic Assessment process is followed. (this current application). The current application is indicated in red in Figure 3 above.
- In pre-application communication with DFFE it was advised, to assess only the required deviation from pylon 73 to pylon 84.

6 COORDINATES OF DEVELOPMENT PROPOSAL

1 Paradise-Fondwe 132kV power line deviation route

Table 1: The GPS coordinates of the Paradise -Fondwe line deviation are as follows:

Length: 2,16 Km
Starting Point: 22°55'18.57"S; 22°55'18.57"S
Middle Point: 22°55'39.11"S; 30°14'2.56"E
End Point: 22°55'43.24"S; 30°14'40.11"E.

Table 2: Co-ordinates every 250m

Distance (m)	Latitude (S) – dd mm ss	Longitude (E) = dd mm ss
Starting Point (Pole 73) – 0m	22°55'18.57"S	22°55'18.57"S
250 m	22°55'23.65"S	30°13'39.30"E
500 m	22°55'28.81"S	30°13'46.09"E
750 m	22°55'33.99"S	30°13'52.86"E
1 000 m	22°55'38.81"S	30°13'59.80"E
1 250 m	22°55'39.80"S	30°14'8.54"E
1 500 m	22°55'40.73"S	30°14'17.22"E
1 750 m	22°55'41.71"S	30°14'25.93"E
2 000 m	22°55'42.68"S	30°14'34.68"E
End Point (Pole 82) – 2 157 m	22°55'43.24"S	30°14'40.11"E

7 PHYSICAL SIZE OF THE ACTIVITY

The physical size of the preferred and alternative activity/ (footprint):

1 Paradise-Fondwe 132kV power line deviation route

Table 3: The Paradise-Fondwe 132kV power line deviation

Alternative:	Length of the activity:
Route 1 (Preferred)	2,16 km / 2 160 m

The size of the servitudes (within which the above footprints will occur):

1 Paradise-Fondwe 132kV power line deviation route

Table 4: The Paradise-Fondwe 132kV power line deviation

Alternative:	Size of the site/servitude:
Route 1 (Preferred)	31m servitude x 2 160 m = 66 960m^2 / 6,696 ha

The EIA will seek to authorise a corridor for the power line, and not just for the actual width of the power line servitude. The wider corridor of 500m that was investigated will allow for potential amendments to the Environmental Authorisation (should it be required at a later stage).

8 ACCESS TO THE SITE

No new access to the site is planned. During construction all vehicle movement must be along existing roads. The servitude area of the new power lines will also be used to gain access during construction. A temporary construction road will be selectively cleared in the new servitude area underneath the future power lines 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.

9 TOPOGRAPHY

The topography of the study area is open flat to slightly undulating agricultural (ploughed and cultivated) lands with no rocky outcrops (koppies) or deep valleys, at the lower foothills of mountains to the south. The average elevation above sea level across the study site is about 830m, with a maximum and minimum of 846m and 818m, respectively. The average gradient (slope) across the site is 2,7% to 1,7%, with the higher ground to the east in the area of Pole 82. The study site is within a broad valley area between large mountain peaks and ranges.

10 GRADIENT OF THE SITE

Table 5: Gradient

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

Note: The average slope / gradient across the entire project is: **1:50 to 1:25.**

11 LOCATION IN LANDSCAPE

The landform(s) that best describes the site.
Table 6: Landform

Ridgeline	Plateau	Side slope of hill/ridge	Valley	Plain	Undulating plain/low hills	River front

12 GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site located on any of the following?

Table 7: Site stability

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

13 GROUNDCOVER

The types of groundcover present on the site and the estimated percentage found on site

Table 8: Groundcover

Natural veld - good condition % = 0	Natural veld with scattered aliens % = 0	Natural veld with heavy alien infestation % = 0	Veld dominated by alien species % = 0	Landscaped (vegetation) % = 0
Sport field % = 0	Cultivated land % = 100	Paved surface (Hard landscaping) % = 0	Building or other structure % = 0	Bare soil % = 0

14 LAND USE CHARACTER OF SURROUNDING AREA

The landcover of the region is a mix of medium to large settlements and villages interspersed with agricultural lands and patches of bushveld. The study site consists of existing cultivated farmlands where open-field dry crops such as maize and vegetables are grown year-round, mostly in the form of subsistence farming practices. Livestock also roam and graze freely through the area.

Table 9: Current land use

1. Vacant land	2. River, stream, wetland	3. Nature conservation area	4. Public open space	5. Koppie or ridge
6. Dam or reservoir	7. Agriculture	8. Low density residential	9. Medium to high density residential	10. Informal residential
11. Old age home	12. Retail	13. Offices	14. Commercial & warehousing	15. Light industrial
16. Heavy industrial[AN]	17. Hospitality facility	18. Church	19. Education facilities	20. Sport facilities
21. Golf course/polo fields	22. Airport[N]	23. Train station or shunting yard[N]	24. Railway line[N]	25. Major road (4 lanes or more)[N]
26. Sewage treatment plant[A]	27. Landfill or waste treatment site[A]	28. Historical building	29. Graveyard	30. Archeological site
31. Open cast mine	32. Underground mine	33.Spoil heap or slimes dam[A]	34. Small Holdings	
Other land uses (describe):				

The block below represents the position of the current land uses, using the associated number from the table above. The position of the land-uses represent a 500m radius around the site. Each block represents an area of 250m X 250m.

NORTH						
WEST	2	2, 7, 9	2, 7, 9	2, 7	2, 7	EAST
	7	7, 9	7, 9	7, 9	7	
	2, 7, 9	2, 7, 9		7	7	
	7, 9	2, 7, 9	7	7,9	7,9	
	7, 9	9	9	9	9	
SOUTH						

15 SOCIO-ECONOMIC ASPECTS

Thulamela Local Municipality is one of the four local municipalities comprising Vhembe District Municipality. It is the eastern most local municipality in the district. The Kruger National Park forms the boundary in the east. The municipality borders Mutale Municipality in the north-east and Makhado Municipality in the south-west.

According to StatsSA 47,7% of the entire Vhembe district's population lives in Thulamela Local municipality. More than 85% of the people in this municipality live in tribal areas. The population in the Vhembe district is dominated by the young generation with 37,6% of people aged 15–35 years, followed by those aged 5–14 years at 22,6%. Adults (36–64) are 20,9%, those aged 0–4 are 12,7%, and lastly, those aged 65+ amount to 6%.

Only 4,7% of the population have tertiary education and more than 40% are still in Grade 8– Grade 12 (secondary school). 10% had no schooling.

There are over 156 594 household in Thulamela Municipality, with an average of 3,9 persons per household. The majority of these households live in houses or brick/concrete block structures, which make up 85%, followed by those who live in traditional dwellings (13%). The majority of households in the district have access to piped water at 88% and 87,2% of households have electricity for lighting.

The municipality's economic growth potential is in agriculture and eco-tourism. Most people in the district derive their livelihood through agricultural pursuits. The main occupation sector is agriculture (commercial and subsistence).

16 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. 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.

Eskom Holdings SOC 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 reliable provision of electricity by Eskom is critical for industrial development and related employment and sustainable development in South Africa. As electricity cannot practically be stored on a significant scale, power is generated and delivered over long distances at the instant that it is required. In South Africa, thousands of kilometres 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.

The activity will ensure that the electrical needs of the province, as stated in the Provincial Spatial Development Framework (PSDF), are satisfied. This project is initiated by Eskom to ensure continuous reliable supply for the Makhado Area.

17 LEGAL REQUIREMENTS

1 APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

The National Environmental Management Act (Act No. 107 of 1998) and the Environmental Impact Assessment (EIA) Regulations, of 2017
An application for authorisation of the project is submitted to the National Department of Forestry, Fisheries and Environment (DFFE), in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and the Environmental Impact Assessment (EIA) Regulations of 2014, as amended.
The proposed project is a listed activity in terms of Sections 24(2) and 24(d) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) (as amended).

National Water Act (Act No. 36 of 1998)
No application required to be submitted to the Department of Water and Sanitation (DWS), for a water use authorisation in terms of the General Notice 509, Government Gazette 40229, dated 26 August 2016, “General Authorisation in terms of Section 39 of the National Water Act, 1998 (Act No. 36 of 1998) (NWA)”.

National Heritage Resources Act (Act No. 25 of 1999)
In addition to the above, A Phase I Heritage Impact Assessment (HIA) study is generally required in terms of Section 38 of the National Heritage Resources Act (No 25 of 1999) to establish whether any of the types and ranges of heritage resources (‘national estate’) as outlined in Section 3 of the National Heritage

Resources Act (No 25 of 1999) do occur on the property and, if so to determine the significance of these heritage resources, and to make recommendations regarding the mitigation and management of significant heritage resources that may be affected. No heritage resources are present within the study area.

National Forests Act (Act No. 84 of 1998)

The project might involve the cutting, disturbing, damaging or destroying of protected trees declared in terms of section 12 of the National Forest Act (NFA) (Act 84 of 1998), as amended. A licence in terms of section 15 of the NFA will be required should any protected tree be impacted. No national or provincial protected tree species are present within the study site.

National Veld and Forest Fire Act (Act No. 101 of 1998)

The applicant should provide fire breaks in accordance with Chapter 4 of the National Veld and Forest Fire Act (Act 101 of 1998) and should consider amongst other the following:

- Fire rating
- Consultation of adjoining owners and the fire protection association (if any)
- be present at such burning or have an agent attend.

The fire break should be:

- wide and long enough to prevent to have a reasonable chance of preventing a veldfire from spreading to or from neighbouring land;
- it does not cause soil erosion; and is reasonably free of inflammable material capable of carrying a veldfire across it.

2 NATIONAL ENVIRONMENTAL MANAGEMENT ACT

In the South African legislative framework, the National Environmental Management Act No. 107 of 1998, as amended (NEMA) regulates development activities, which may pose a risk to the integrity of the ecological and human environment. Coupled with NEMA, listed activities are provided, which describe the types, limits, expanse and nature of developments that require a Basic Environmental Assessment Process, in application for Environmental Authorisation prior to commencement.
The following construction activities will require Environmental Authorisation:

2.1 The listed activities for the proposed project are the following

Table 10: Listed Activities

Activity No(s):	Provide the relevant **Basic Assessment Activity(ies)** as set out in **Listing Notice 1** of the EIA Regulations, 2014 as amended	Describe the portion of the proposed project to which the applicable listed activity relates.
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 132kV overhead distribution Paradise-Fondwe power line will be constructed over approximately 2,16 km, outside an urban area, from pylon 73 to pylon 84.
Activity No(s):	Provide the relevant **Scoping and EIA Activity(ies**) as set out in **Listing Notice 2** of the EIA Regulations, 2014 as amended	Describe the portion of the proposed project to which the applicable listed activity relates.
	N/A	
Activity No(s):	Provide the relevant **Basic Assessment Activity(ies)** as set out in **Listing Notice 3** of the EIA Regulations, 2014 as amended	Describe the portion of the proposed project to which the applicable listed activity relates.
	N/A	

2.2 The Description of Listed activities associated with the Project activities

1 Listing Notice 1 Activity 11: Construct a 132kV overhead power line outside an urban area

132kV Design specifications

It is proposed to construct the 132kV overhead distribution Paradise-Fondwe power line over approximately 2,16 km, outside an urban area, from Pole 73 to Pole 84.

The proposed structure for the 132kV overhead power lines, is a monopole steel structure. In general, these structures could be placed 220-350 metres apart, over the length of a power line. The structures for a power line are between 14 and 30 metres 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 metres plus 10% of the height of the structure above ground = 0.6 metres plus 2.1 metres = structure is planted 2.7 metres deep. Should stays be needed then the stays will be at a 45° angle to the structure and planted 21 metres 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 C* in the BAR for visuals of the monopole steel structure.

The Paradise-Fondwe 132kV line requires a servitude width of 31 metres (15,5 metres on either side of the centre line of the power line). A servitude area is a no building area, except for Eskom structures.

18 FEASIBLE AND REASONABLE ALTERNATIVES

1 POWER LINE ROUTE ALTERNATIVES

As mentioned, the deviation as investigated in this current report, is required to avoid new dwellings in the authorised corridor of 2019. Since the original authorisation of 2015, the power line route had to be amended a number of times. The section between pylons 73 to 84 is presented as part of the final alignment between Paradise substation and Fondwe substation. At this stage, no viable alternatives for the deviation could be identified or investigated.

This EIA investigated a 500m corridor to accommodate any future deviation of the power lines. The EIA will seek to authorise the total corridor. The wider area that was investigated will allow future potential amendments to the EA should it be necessary (at a later stage). Should small changes be done to the route alignment after authorisation it will not be considered crucial and will not warrant a new application.

Although a 500m corridor was investigated, the project team narrowed down the corridor to site specific placement of the structures. The positions of the pylons are in pre-limanary design but the detail design might necessitate changes in the final design. Stay positions are indicative only and the site specific requirements will be incorporated upon construction. The final design might affect structure type selection. There may be a requirement to add a structure in the line route pending on final clearances with the ground. This will however not change the alignment.

2 NO-GO ALTERNATIVE

Taking all aspects into consideration including, ecological sensitivities, red data listed species (RDL), protected trees, the type of project and related activities, as well as mitigating measures and existing basic procedures for power lines, there are no fatal flaws and the project may go ahead.

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 sustainable development and related employment, and sustainable human settlements in South Africa.

As mentioned, bulk electricity supply infrastructure is needed to supply the mentioned areas. The peak electricity load required in this area is further anticipated to increase significantly in the near future Should this application not be approved the required demand will not be provided for.

This proposed project is therefore essential 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.

19 SPECIALIST INPUT

Specialist input was obtained to investigate the impact of the various alternatives that could accomplish the purpose of the project. The specialist input is summarised as follows:

1 BIODIVERSITY ASESSMENT

A Biodiversity Assessment has been conducted by Flori Scientific Services . Refer to Appendix D of the BAR. The report identified the following:

Watercourses

There are no watercourses in the study site. The closest watercourses are the Nzhelele River to the north and a small, unnamed stream to the west. The Nzhelele River is within a shallow valley and has associated valley bottom wetlands. The latest National Wetland Map (Map 5, 2018) also highlight these wetlands, but their demarcations are over a much wider area than is actually the case. The wetlands do not infringe on the study site (Figure 5).

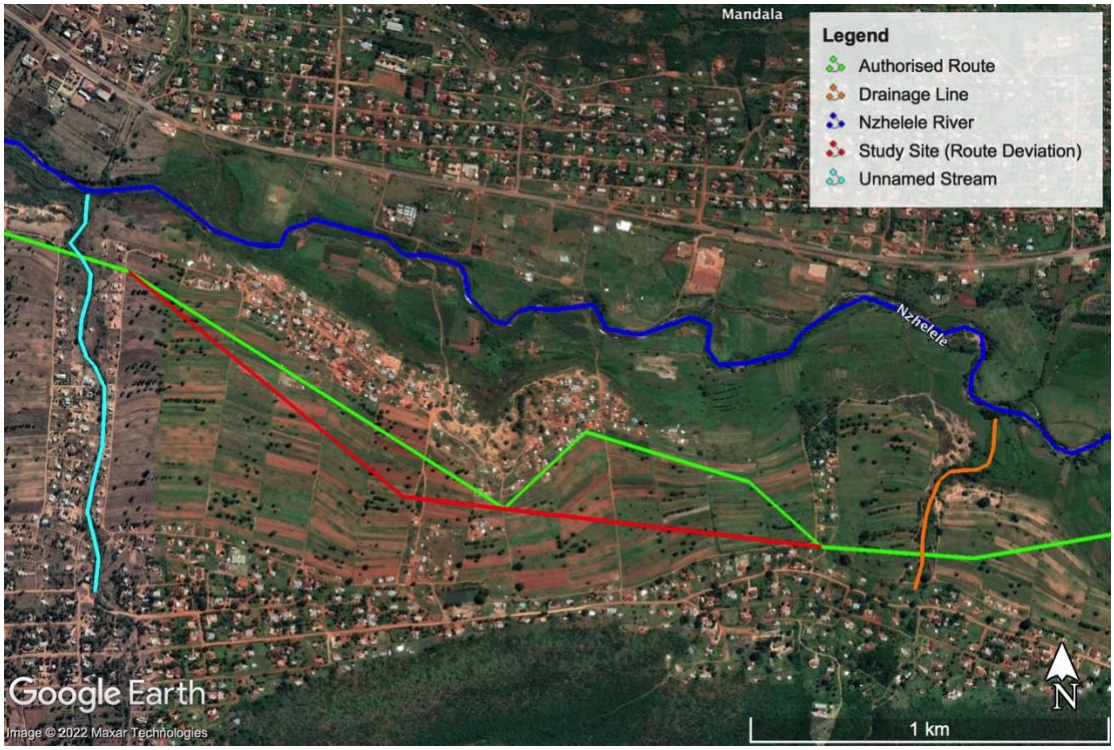

Figure 4: Main Watercourses in the region

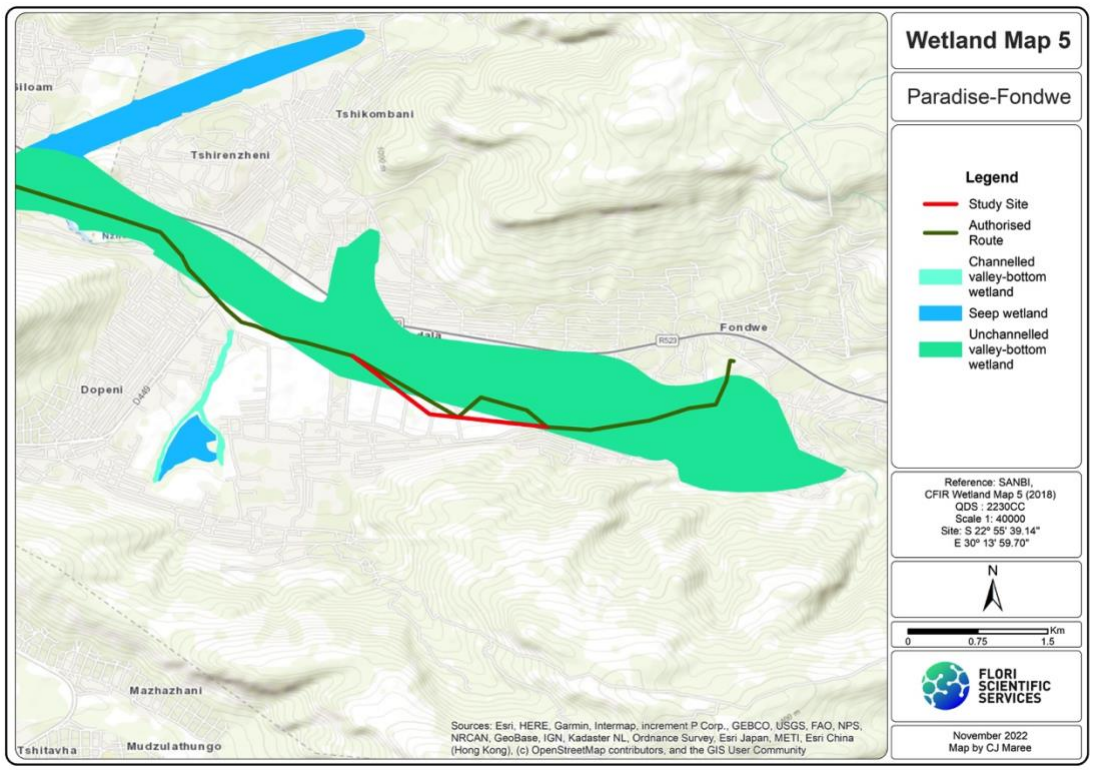

Figure 5: National Wetland Map (Map 5, 2018)

Drainage Regions

Below is a summary of the drainage region / catchment area for the study site.

Level	Category
Primary Drainage Area (PDA)	A
Quaternary Drainage Area (QDA)	A80A
Water Management Area (WMA) – Previous / Old	Limpopo
Water Management Area (WMA) – New (as of Sept. 2016)	Limpopo (WMA 1)
Sub-Water Management Area	Nzhelele / Nwanedzi
Catchment Management Agency (CMA)	Limpopo (CMA 1)
Wetland Vegetation Ecoregion (WetVeg)	Mesic Highveld Grassland (Group 4)
RAMSAR Site	No
River FEPA	No
Wetland FEPA	No
Fish FEPA	No
Fish FSA	No
Fish Corridor	No
Fish Migratory	No
National Strategic Water Source Area (SWSA)	No
Provincial important Water Source Area (WSA)	No
Priority Quaternary Catchment	No

Vegetation

The study site is within the original extent of Soutpansberg Mountain Bushveld, which is not a threatened veldtype / ecosystem. The study site is totally transformed and there is no natural vegetation remaining. The site is within cultivated farmlands.

Fauna

No faunal species of conservation concern (SCC) were observed during field investigations and none are expected to occur. There are also no ideal habitats present on site.

Priority areas

The Study Site is within the national priority areas of Soutpansberg IBA and the larger demarcated Informal Protected Area of the Vhembe Biosphere Reserve (Figure 6).

National priority areas include formal and informal (private) protected areas (nature reserves); important bird areas (IBAs); RAMSAR sites; National fresh water ecosystem priority areas (NFEPA) and National protected areas expansion strategy focus areas (NPAES).

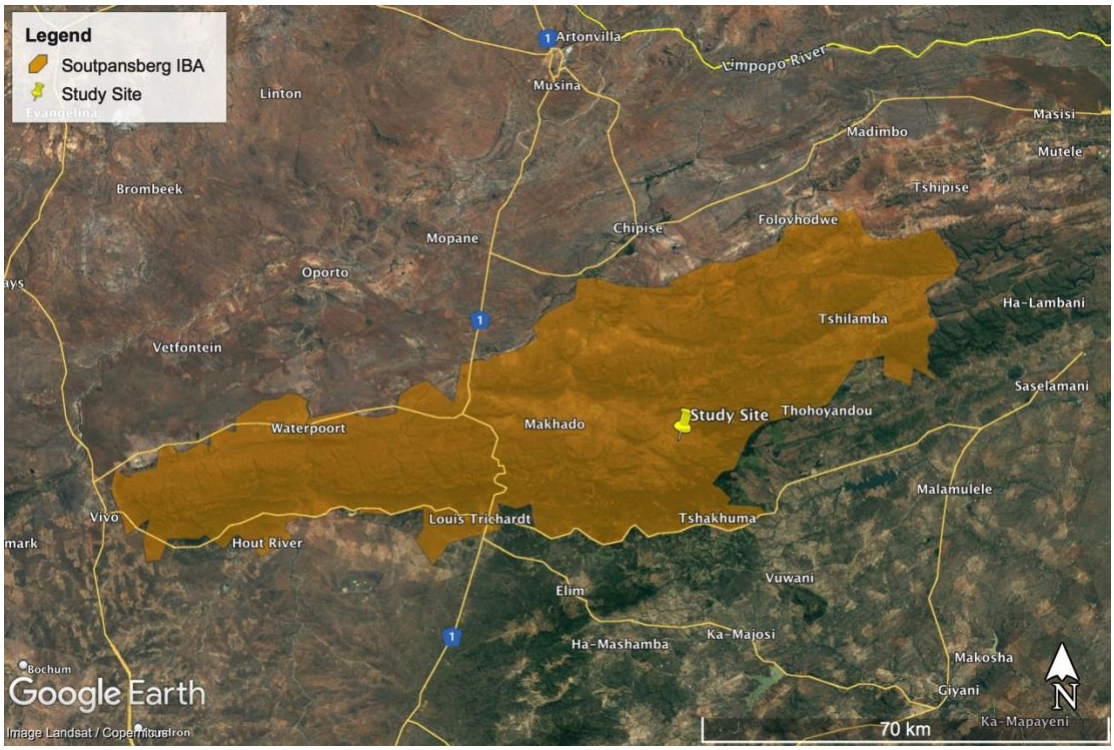

Figure 6: Important Bird Areas (IBAs)

Fatal flaws

There are no fatal flaws and the project may proceed.

Sensitivity Maps

There are no 'high sensitive' or 'medium sensitive' areas within the study site. The sensitivity map for the study site (200m wide corridor for the power line) is shown below.

A summary of the sensitivities of the Study Area is as follows:

- The study site is within a totally transformed area of cultivated farmlands. There is no sensitive habitats present, both in terms of fauna and flora.
- According to the DEA Screening Tool and site investigations, the overall terrestrial biodiversity sensitivity is 'Very High'. However, the study site is transformed and the biodiveristy sensitivity is actually 'Low'.
- There are no highly sensitive habitats, or no-go zones, present.
- There are no protected areas, although the site is within the larger Vhembe Biosphere, which includes the Soutpansberg Mountain Range.
- The study site is not within a CBA, but is within a demarcated ESA.

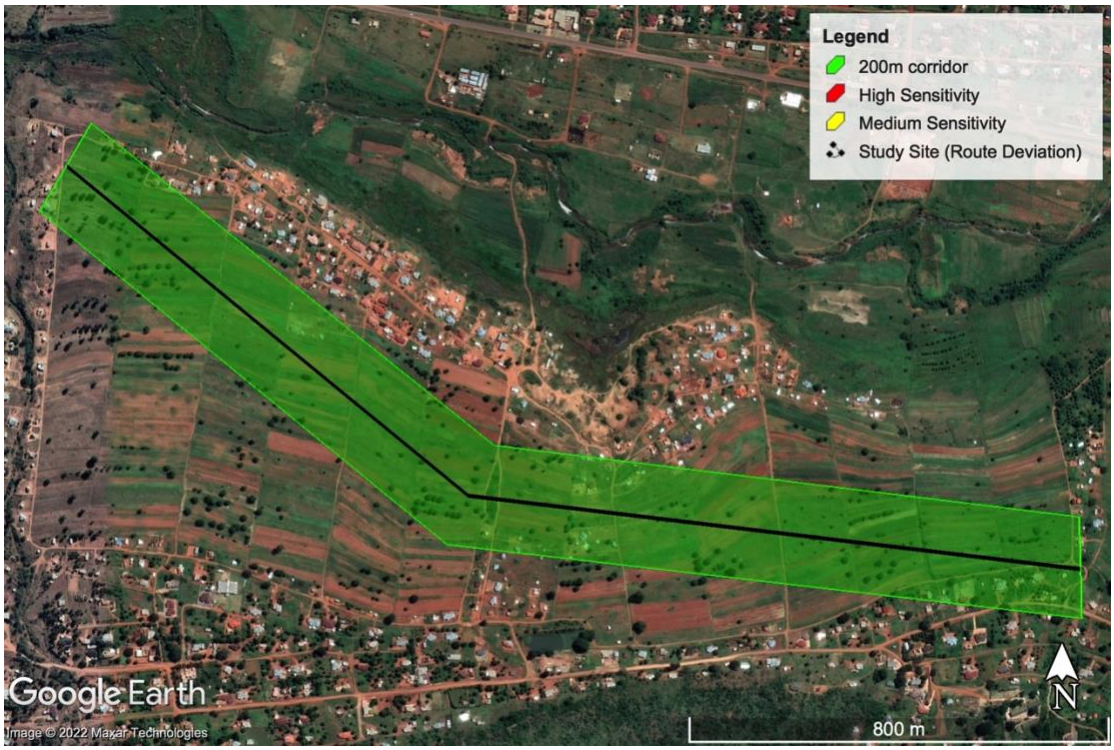

Figure 7: Sensitivity map

Buffer Zones

No buffer zones or 'no-go' zone are required.

Conclusions

The conclusions of the study are as follows:

- The study site is within a totally transformed environment of cultivated farmlands.
- The site is within the original extent of Soutpansberg Mountain Bushveld, which is not a threatened veldtype / ecosystem and has a status of 'Least Concern'.
- There are no watercourses within the study site.
- The study site is within the Soutpansberg IBA and the larger demarcation of the Vhembe Biosphere.
- There are no RDL and ODL flora or fauna species within the study site.
- There are no sensitive or ideal habitats present for fauna and flora.
- Taking all findings and recommendations into account it is the reasonable opinion of the author / specialist that the activity may be authorised. The project and related activities should be allowed to proceed.

Recommendations

The recommendations of the study are as follows:

- All recommended mitigating measures as proposed in this study and report should be implemented if the findings of this report are to remain pertinent. All of the recommended mitigating measures must be part of the conditions in the EMP.
- No buffer zones are required.

2 AVIFAUNAL ASSESSMENT

An Avifaunal Assessment has been conducted by Flori Scientific Services. Refer to Appendix D2 of the BAR. The report identified the following:

Bird Habitats

The presence of bird species is strongly linked to the availability of ideal habitats for foraging, breeding and nesting. In terms of bird habitats, the study site is totally transformed, open cultivated farmlands. More important and ideal bird habitats are the watercourses and the higher mountain peaks that are still wooded and have less human impacts, including houses.

Important bird habitats for the study site, and surrounding areas are therefore seen as follows:

1. Cultivated Fields (Farmlands);
2. Watercourses (rivers and associated riparian vegetation); and
3. Mountains (Mountaintops covered with bushveld (wooded), but no montane forests).

Conclusions

The conclusions of the biodiversity study are as follows:

- The study site is within the original extent of Soutpansberg Mountain Bushveld, which is not a threatened veldtype / ecosystem.
- The entire power line route is within transformed and cleared cultivated farmlands.
- There are no watercourse crossings or open bodies of water in the study site (power line servitude) . However, the Nzhelele River is a few hundred metres north of the site and a small, seasonal unnamed stream west of the site.
- The study site is within the extent of the Soutpansberg IBA.
- There are no ideal bird habitats within the study site.
- No priority birds / species of conservation concern were observed in the study area. However, it is likely that some priority birds will traverse the area occasionally.
- Taking all findings and recommendations into account it is the reasonable opinion of the author / specialist that the activity may be authorised. The project and related activities should be allowed to proceed.

Recommendations

The recommendations of the study are as follows:

- All mitigating measures put forward in this report and other specialist reports must be implemented and included in the conditions of the EMP.
- Bird Flight Diverters (BFDs) do not need to be installed across the length of the proposed power line deviation (study site / project site). Note: This recommendation does not speak to the rest of the authorised line between Paradise and Fondwe Substations.
- Bird perches must be placed on top of all steel-mono poles. On H-poles spikes must be installed along the horizontal to deter birds from perching or nesting on these beams / structures.
- Only Eskom approved 'bird-friendly' poles to be used.

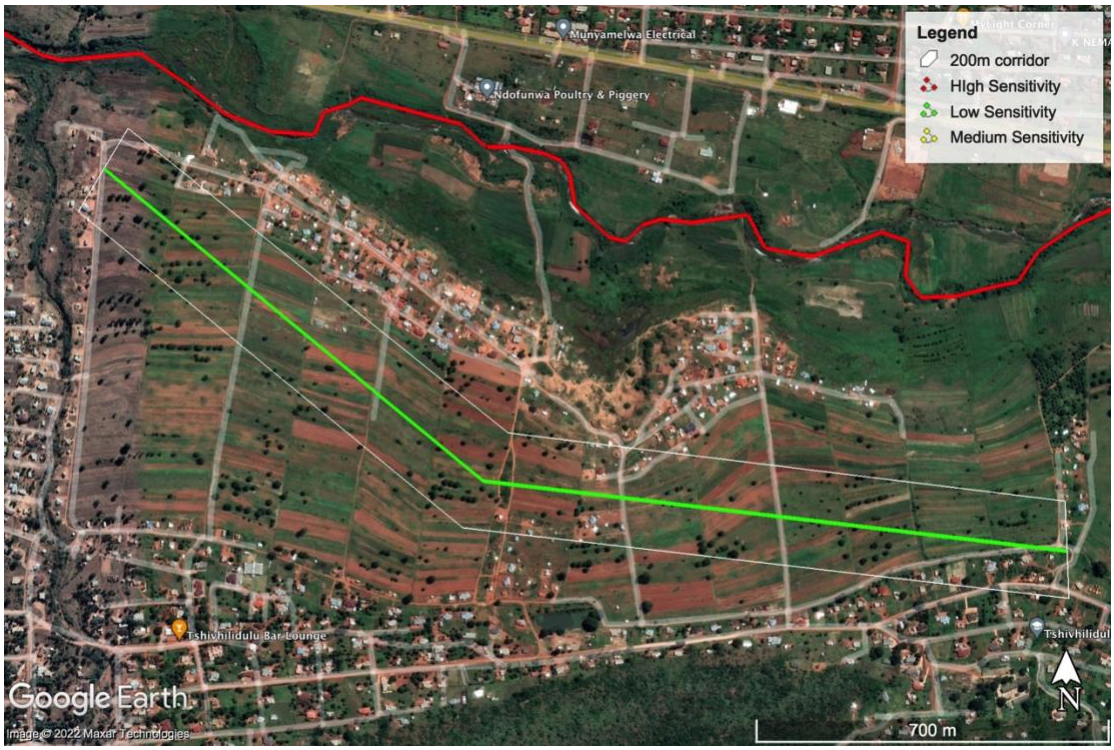

Figure 8: Avifauna Sensitivity Map

3 HERITAGE IMPACT ASSESSMENT

A Heritage Impact Assessment Phase 1 has been conducted by Integrated Specialist Services. Refer to Appendix D of the BAR. A Heritage Impact Assessment (HIA) is the process to be followed in order to determine whether any heritage resources are located within the area to be developed as well as the possible impact of the proposed development thereon.

The report makes the following observations:

The immediate project area is predominantly communal agricultural fields and rural residetntial. No known features will be directly impacted on within the proposed powerline coridor between Pylon 73 to Pylon 82. The study identified one burial site located approximately 200m from the centre of the proposed powerline route at GPS Coordinates 22° 55' 46" S; 30° 14' 10" E. The burial site is located under a huge tree between pylons 78 &7 9) and there are two marked tombstones and inscribed headstones. It can safely be avoided without realigning the powerline route.

Figure 9: Impact of the proposed power line on recorded features.

Recommendations:

- Mitigation for the proposed powerline development is required for the protection of the recorded burial site approximately 200m from the proposed powerline route. The site must be clearly marked to avoid any accidental damage to graves.
- A copy of the chance finds procedure must be kept at the site office to ensure appropriate management of any accidental finds at the project site.

4 PALEONTOLOGICAL SENSITIVITY

According to the National Web based Environmental Screening Tool the sensitivity for the study site and immediate surroundings in terms of Palaeontology is as follows:

- Palaeontology theme sensitivity: Medium.

Integrated Specialist Services (Pty) Ltd indicted in the Heritage Impact Assessment that no paleontological resources were found in the project area during the time of the study. A Fossil Chance Find Protocol was added to the EMPr.

20 SPATIAL DEVELOPMENT TOOLS

Spatial development tools used included ArcGIS v.10.2; Google Earth Professional; SANBI's BGIS MapViewer (www.bgis.sanbi.org) and Garmin Maps.

These tools, along with relevant datasets such as vegetation types, rivers, Limpopo Conservation Plan (Version 2), etc. were used in the desktop assessment as well as the final biodiversity specialist reports. ArcGIS as well as Google Earth Professional were used to produce the detailed maps used in the reports. The outcome is that these spatial development tools give accurate layouts and positions of important data such as Critical Biodiversity Areas. The tools are also used to create accurate and visual maps showing floodlines, watercourses, sensitive areas, etc.

1 NATIONAL PRIORITY AREAS

The Study Site is within the national priority areas of Soutpansberg IBA and the larger demarcated Informal Protected Area of the Vhembe Biosphere Reserve (Figure 10).
National priority areas include formal and informal (private) protected areas (nature reserves); important bird areas (IBAs); RAMSAR sites; National fresh water ecosystem priority areas (NFEPA) and National protected areas expansion strategy focus areas (NPAES).

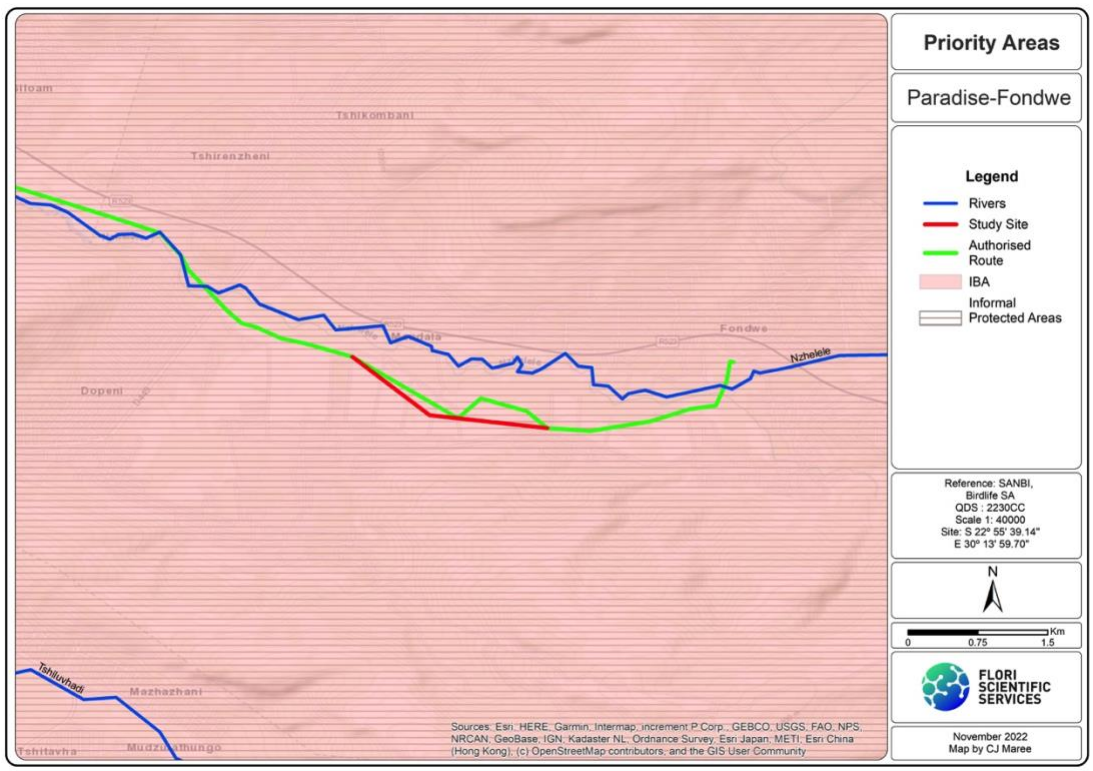

Figure 10: Priority areas

2 LIMPOPO CONSERVATION PLAN

According to the Limpopo Conservation Plan (Version 2) the entire study site is not within a critical biodiversity area (CBA), but is within a demarcated ecological support area (ESA) (Figure 11).

Critical biodiversity areas (CBAs) are terrestrial and aquatic features in the landscape that are critical for retaining biodiversity and supporting continued ecosystem functioning and services (SANBI, 2007). These form the key outputs of a systematic conservation assessment and are the biodiversity sectors inputs into multi-sectoral planning and decision-making tools. CBAs are areas of the landscape that need to be maintained in a natural or near-natural state in order to ensure the continued existence and functioning of species and ecosystems and the delivery of ecosystem services (SANBI).
Ecological Support Areas (ESAs) are areas that are often seen as buffer areas for CBAs as well as corridors and connective areas between CBAs and/or other priority areas. ESAs are also often designated buffer and support areas along rivers and streams.

Figure 11: CBAs and ESAs

3 NATIONAL ENVIRONMENTAL SCREENING TOOL

The National Web based Environmental Screening Tool is a geospatial web-enabled application providing for screening of sites for environmental sensitivity and the placement of proposed developments in relation to the impact avoidance hierarchy. It produces the report required in terms of regulation 16(1)(v) of the EIA regulations.

The screening tool is a guideline tool that needs to be verified during site investigations (ground truthing). Depending on the levels of sensitivity shown in the screening assessment certain criteria in terms of

assessments, studies, etc. may be required by the competent authorities. According to the screening tool (accessed in November 2022) the various sensitivities for the study site and immediate surroundings are as follows:

- Terrestrial biodiversity combined theme sensitivity: Very High.
- Aquatic biodiversity combined theme sensitivity: Very High.
- Plant species theme sensitivity: Low.
- Animal species theme sensitivity: Medium.

During site investigations the sensitivities, were assessed and ground-truthed. The site investigations disagree with the screening tool sensitivities. The study site is totally transformed cultivated farmlands. Much of the surrounding area is also transformed settlements and villages.
The site investigations determined sensitivities for the study area are as follows:

- Terrestrial biodiversity combined theme sensitivity: Low.
- Aquatic biodiversity combined theme sensitivity: Low.
- Plant species theme sensitivity: Low.
- Animal species theme sensitivity: Medium.

Note: The animal sensitivity will be 'Medium' not because of the presence of wild fauna in the study area, but because of potential movement of animals through the area.

21 PUBLIC PARTICIPATION

Setala Environmental has taken cognisance of the requirements for public participation in terms of the 2014 EIA Regulations, as amended 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.
Refer to Comments and Response Report attached as *Appendix E6.*

1 ADVERTISEMENT AND NOTICE

Site notice positions	Notices displayed at the following locations: • Notice 1 - At beginning of deviation (Furthest end from Fondwe Substation). Lat 22° 55' 17,832" S; Long 30° 13' 32,19" E • Notice 2 - At Fondwe Substation. Lat 22° 55' 19,59" S; Long 30° 15' 46,788" E
Date placed	25/10/2022
Publication name	Limpopo Mirror
Date published	28/10/2022

(Refer to Appendix E1b: Proof of site notices)

(Refer to Appendix E1a: Proof of newspaper notice)

2 PUBLIC NOTIFICATION

A consultation process was undertaken with the intent of informing key stakeholders, comprising the Municipal structures, State Departments, other interested parties as well as the affected landowners about the proposed development and the Basic Assessment process underway.

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. Key stakeholders were identified at the beginning of the PPP, these included: Key stakeholders, commenting authorities and landowners/ land users. Refer to Appendix E4a: Register of Interested and Affected Parties for a complete list.

- Limpopo Dept of Economic Development, Environment & Tourism (LEDET)
- Department of Water and Sanitation, Limpopo Water Management Area (WMA1) QDA A80A
- SA Heritage Resources Agency
- Dept of Sports, Art and Culture, Limpopo Heritage Authority
- Department of Mineral Resources and Energy
- Department of Agriculture, Land Reform and Rural Development (DALRRD): Commission on Restitution of Land Rights, Regional Land Claims Commissioner
- Department of Agriculture, Land Reform & Rural Development: Land and Soil Management
- Fetakgomo Tubatse Local Municipality
- Thulamela Local Municipality
- Vhembe District Municipality
- Endangered Wildlife Trust
- Sasol Gas Limited
- Eskom Transmission, Property Rights Assets Management (PRAM)
- Eskom Distribution, Limpopo Operating Unit
- Affected landowners

Background Information Document

- A comprehensive background information document (BID) 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). BID attached as Appendix E2a.
- On 25/10/2022 the documentation was submitted for comment to all I&APs.
- The due date for comment was 25/11/2022. This allowed for a comment period of 30 days.
- Copies of the notification to I&APs are included as Appendix E2b.

Landowner notification

The landowners throughout a project area in general play an important role in assisting with the identification of issues and project alternatives. The landowners/ land users are being engaged with to secure the servitude for the power line. The deviation is on the remainder of the farm Tondonwe 198 MT which has been allocated to Chief Tshivhilidulu.

3 MEETINGS AND SITE VISITS

Site visits with key stakeholders

- 25/10/2022 - Eskom Distribution, Limpopo Operating Unit

Public engagement

- The I&APs are provided with various options to provide comment / request more information. In writing, via fax or email, and verbally, via telephone calls, text messages, WhatsApp, zoom or teams sessions.
- Engagements to be held virtual via teams/zoom, telephone conversations, text messages etc.
- Copies of the invitations to comment, included as Appendix E2c of the final BAR.
- The interested and affected parties all provided comment via email and no request for a physical meeting was received.

4 DISTRIBUTION OF DRAFT BASIC ASSESSMENT REPORT FOR COMMENT

On 12/12/2022 notification of the availability of the Draft Basic Assessment Report (DBAR) was submitted to all I&APs. (Proof in Appendix E2c of the final BAR).
The DBAR was available for comment on the Setala website using a given link. The comment period was for 30 days until 08/02/2023.
Hard copies and/or electronic copies of the DBAR were submitted to the following key stakeholders:

- Limpopo Dept of Economic Development, Environment & Tourism (LEDET), Environmental Impact Management
- Thulamela Local Municipality, Environmental Management Services
- Department of Water and Sanitation, Limpopo Water Management Area (WMA1) QDA A80A
- SA Heritage Resources Agency (via Sahris)

5 COMMENTS AND RESPONSE REPORT

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 E3*). Refer to Comments and Response Report attached as *Appendix E6 for detailed information.*

Key stakeholder from whom comment has been received:

- Sasol Gas Limited

6 CONCLUSION OF PUBLIC PARTICIPATION PROGRAMME

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

Activity	Description and Purpose
Pre-Application	
Preparation of a preliminary stakeholder database	A preliminary database has been compiled of authorities (local and provincial), Non-Governmental Organisations, land users and other key stakeholders. Refer to Appendix E4. This database of registered I&APs will be maintained and updated during the ongoing process.

Preparation and Distribution of a Background Information Document (BID)	BIDs and registration forms to be distributed via email to all I&APs on the database. See Appendix E2b for proof of written submissions. The BID to provide an introduction to the Project and the process. Submitted 25/10/2022 - 25/11/2022. See Appendix E2a for the BID and Registration form.
Advertisement of the Project and Erection of Site Notices	The Project was advertised on 28/10/2022 in the Limpopo Mirror. See proof of notice in Appendix E1a. Site notices were placed on 25/10/2022 on the power line alignment. See proof of placement in Appendix E1b.
Development of an Initial Comments and Response Report	All comments received during the initial consultation period are recorded in a Comments and Response Report.
BA Phase	
Release of draft Basic Assessment Report for Public Comment	The draft BA Report was released for the required 30-day public comment period: dates 12/12/2022 - 08/02/2023. Notifications were submitted to all stakeholders on the database and included details of how to engage in providing comments. The DBAR are available for comment on the Setala website using a given link. Proof attached as Appendix E2c of the FBAR.
Development of a Comments and Response Report	All comments received to be recorded into a Comments and Response Report.
Public review	Engagements to be held virtual via teams/zoom, telephone conversations, text messages etc. All comments received, along with responses to be included in the final BAR. All comments received, along with responses, included in the final BAR as Appendix E3.
Submission of final Basic Assessment Report to Environmental Authority	Subsequently the final BAR to be submitted to DFFE. The final BAR to include all concerns raised to the DBAR, and the responses thereto.
Environmental Decision	
Notification of Environmental Decision	I&APs will be notified of the Environmental Decision and the statutory appeal period.

22 IMPACT ASSESSMENT

The 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 have been addressed in this Basic Assessment Report.

The assessment of impacts adheres to the minimum requirements in the EIA Regulations, 2014, and took applicable official guidelines into account. The issues raised by interested and affected parties were also addressed in the assessment of impacts, as well as the impacts of not implementing the activity.

The potential impacts of the proposed development were identified through a desktop study, a site visit, specialist studies and comments received during the public participation process. It is evident that the biggest impact of the project on the environment is expected to occur during the construction phase. It is expected that with the proposed mitigation of impacts and the implementation of the Environmental Management Programme, the expected negative impact could be mitigated to acceptable measures.

METHODOLOGY UTILISED IN THE RATING OF SIGNIFICANCE OF IMPACTS

The potential environmental impacts associated with the project will be evaluated according to its nature, extent, duration, intensity, probability and significance of the impacts, whereby:

(a) Nature: A brief written statement of the environmental aspect being impacted upon by a particular action or activity.
(b) Extent: The area over which the impact will be expressed. Typically, the severity and significance of an impact have different scales and as such bracketing ranges are often required. This is often useful during the detailed assessment phase of a project in terms of further defining the determined significance or intensity of an impact. For example, high at a local scale, but low at a regional scale.
(c) Duration: Indicates what the lifetime of the impact will be.
(d) Intensity: Describes whether an impact is destructive or benign.
(e) Probability: Describes the likelihood of an impact actually occurring; and
(f) Cumulative: In relation to an activity, means the impact of an activity that in itself may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.

Table 11: Criteria to be used for rating of impacts

Criteria	Description			
Extent	**National (4)** The whole of South Africa	**Regional (3)** Provincial and parts of neighbouring provinces	**Local (2)** Within a radius of 2 km of the construction site	**Site (1)** Within the construction site
Duration	**Permanent (4)** Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient	**Long-term (3)** The impact will continue or last for the entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter. The only class of impact which will be non-transitory	**Medium-term (2)** The impact will last for the period of the construction phase, where after it will be entirely negated	**Short-term (1)** The impact will either disappear with mitigation or will be mitigated through natural process in a span shorter than the construction phase
Intensity	**Very High (4)** Natural, cultural and social functions and processes are altered to extent that they permanently cease	**High (3)** Natural, cultural and social functions and processes are altered to extent that they temporarily cease	**Moderate (2)** Affected environment is altered, but natural, cultural and social functions and processes continue albeit in a modified way	**Low (1)** Impact affects the environment in such a way that natural, cultural and social functions and processes are not affected
Probability of occurrence	**Definite (4)** Impact will certainly occur	**Highly Probable (3)** Most likely that the impact will occur	**Possible (2)** The impact may occur	**Improbable (1)** Likelihood of the impact materialising is very low

Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The total number of points scored for each impact indicates the level of significance of the impact.

Table 12: Criteria for the rating of classified impacts

Low impact (4 - 6 points)	A low impact has no permanent impact of significance. Mitigation measures are feasible and are readily instituted as part of a standing design, construction or operating procedure.

Medium impact (7 - 9 points)	Mitigation is possible with additional design and construction inputs.
High impact (10 - 12 points)	The design of the site may be affected. Mitigation and possible remediation are needed during the construction and/or operational phases. The effects of the impact may affect the broader environment.
Very high impact (13 - 20 points)	Permanent and important impacts. The design of the site may be affected. Intensive remediation is needed during construction and/or operational phases. Any activity which results in a "very high impact" is likely to be a fatal flaw.
Status	Denotes the perceived effect of the impact on the affected area.
Positive (+)	Beneficial impact.
Negative (-)	Deleterious or adverse impact.
Neutral (/)	Impact is neither beneficial nor adverse.
It is important to note that the status of an impact is assigned based on the status quo – i.e. should the project not proceed. Therefore not all negative impacts are equally significant.	

1 PLANNING AND DESIGN PHASE

The potential impacts, significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the planning phase for the various alternatives of the proposed development.

Paradise – Fondwe (PROPOSAL)				
DIRECT IMPACTS				
Potential Impacts	Significance Rating	Mitigation Measures	Significance rating of impacts after mitigation	Risk of the impact and mitigation not being implemented
Impact on the Natural Habitat <u>Design</u> Insensitive design of the power line routes can cause a negative impact on the natural habitat of not only the site itself, but also on the surrounding natural environment. The context of the development site/route corridor within the macro area in terms of conservation areas also plays a major role when suitable areas for development are being considered. The development site/route corridor (or parts thereof) could form part of important ecological corridors and such corridors could be destroyed if the functioning thereof is not being supported by the development proposal. <u>The development site</u> The study site is within a totally transformed environment of cultivated farmlands. There are no highly sensitive habitats, or no-go zones, present.	NEGATIVE LOW	• Site-specific measures in terms of biodiversity as identified by Johannes Maree (Tel 082 564 1211), must be included in the contract with the Contractor and implemented by the Contractor during the construction phase.	NEGATIVE LOW	LOW
INDIRECT IMPACTS				

No indirect impacts were identified during the planning and design phase.				
CUMULATIVE IMPACTS				
No cumulative impacts were identified during the planning and design phase				

NO GO ALTERNATIVE				
DIRECT IMPACTS				
Potential Impacts	Significance Rating	Mitigation Measures	Significance rating of impacts after mitigation	Risk of the impact and mitigation not being implemented
No direct impacts were identified during the planning and design phase.				
INDIRECT IMPACTS				
No indirect impacts were identified during the planning and design phase.				
CUMULATIVE IMPACTS				
No cumulative impacts were identified during the planning and design phase.				

2 CONSTRUCTION PHASE

Paradise-Fondwe (PROPOSAL)				
DIRECT IMPACTS				
Potential Impacts	Significance Rating	Mitigation Measures	Significance rating of impacts after mitigation	Risk of the impact and mitigation not being implemented
Impact on the vegetation This impact is associated with disturbance to and/or destruction of the flora component. During construction the activities could cause a negative impact where insensitive clearing for construction and access purposes, etc. is required. Insensitive clearing can cause the destruction of habitat. Not only does vegetation removal represent a loss of seed and organic matter, but it is also a loss of protection to plants and small animals. Insensitive vegetation clearance can also cause erosion. Pressure on the natural environment will occur as a result of an influx of labourers into the area that could involve the collection of	NEGATIVE MEDIUM	• Detail mitigation measures are stipulated in the EMPr and include the following: • No temporary site offices or lay-down areas are allowed within 50m of the edge of any watercourses. • Temporary site offices or lay-down areas are not allowed on top of any rocky hills or along any steep hill slopes or gradients. All laydown areas must be on flat, plains / surfaces, and not within a 100m of the edge of any watercourse. Ensure as small a footprint as possible during the construction phase. • All hazardous materials inter alia paints, turpentine and thinners must be stored appropriately to prevent these contaminants from entering the natural environment and especially the water environment. • All excess materials brought onto site for construction to be removed after construction, but as part of the construction phase.	NEGATIVE MEDIUM	LOW

firewood and medicinal plants, as well as uncontrolled veld fires. The development site There are no highly sensitive or medium sensitive habitats, or no-go zones present with the proposed power line servitude. The study site is totally transformed and there is no natural vegetation remaining. The site is within cultivated farmlands. There are no protected trees within the study area. The project footprint is within disturbed and altered areas. There are no RDL and ODL flora or fauna species within the study site.		• Proper rubbish/waste bins to be provided. These to be emptied weekly and the waste to be removed to an official waste disposal site. • Rehabilitation plan for disturbed temporary set up areas to be compiled and implemented as part of the construction phase. • Special attention must be given to the rehabilitation of temporary construction and set up areas. • Re-seeding of bare areas with local indigenous grasses to be part of the rehabilitation plan. No exotic species to be used for rehabilitation. • Only existing gravel / sand roads to be used by heavy vehicles during the construction phase. • Access roads to be maintained at all times.		
Impacts on avifauna Disturbance Collisions Electrocutions The development site The study site is within the Soutpansberg IBA and the larger demarcation of the Vhembe Biosphere.	NEGATIVE MEDIUM	• A steel mono-pole (structure) to be used for the new 132kV line, that reduces bird collisions and electrocutions. • Bird Flight Diverters (BFDs) DO NOT need to be installed along the length of the power line (the deviation section). • Bird perches must be place on top of all steel monopoles along the power line route. This helps to draw large birds (eg. Vultures) away from the dangerous / risky insulators that can result in electrocutions. • Eskom will use the latest structure designs that further help reduce bird collisions and electrocutions. • No interaction is allowed with any birds, even common species. • Should a nest be found during the construction phase, work in that particular spot must be halted and a bird specialist consulted. Any nesting sites found should be cordoned off with tape and signs and declared a 'no-go' zone. • If the nest is within the actual servitude it might be able to be relocated, depending on the species and the advice from the bird specialist.	NEGATIVE LOW	LOW
Impacts on fauna • Noise and vibration during construction • Loss of habitat The Development site There are no RDL and ODL fauna species within the study site. There are no sensitive or ideal habitats present for fauna.	NEGATIVE MEDIUM	• All operations should meet the noise standard requirements of the Occupational Health and Safety Act (Act No. 85 of 1993). • No poaching of wildlife or selling of firewood will be allowed. • No animals or birds may be fed, disturbed, hunted or trapped.	NEGATIVE LOW	LOW
Impact on Water Sources During construction, the risk of pollution of surface and	NEGATIVE HIGH	• Mitigation measures in the Environmental Management Programme include measures to	NEGATIVE MEDIUM	LOW

groundwater can generally be related to diesel, oil and concrete spills that may result in a change in water quality with the associated negative impact on humans and the natural habitat. Groundwater pollution during the construction phase is also associated with poor construction techniques. Diesel, oil and lubricant spills are the main concern in respect of water pollution during construction together with organic pollution caused by inadequately managed facilities at the work sites. <u>The development site</u> There are no watercourses in the study site. The closest watercourses are the Nzhelele River to the north and a small, unnamed stream to the west.		ensure acceptable construction practices to minimise or avoid the risk of contamination of water sources. These include: <u>Construction Site</u> • No heavy vehicles are allowed to drive through watercourses, unless on existing gravel and farm roads. • 32m Buffer zones, from the edge of the banks of all watercourses need to be implemented. These are 'No-Go' zones in terms of construction. No pylons may be placed / erected within these buffer zones of 32m. • Any temporary storage, lay-down areas or accommodation facilities to be setup in existing built-up areas or disturbed areas only. • Ensure as small a footprint as possible during the construction phase. • All hazardous materials inter alia paints, turpentine and thinners must be stored appropriately to prevent these contaminants from entering the natural environment and especially the water environment. • During and after construction, stormwater control measures should be implemented especially around stockpiled soil, excavated areas, trenches etc. so that export of soil into any watercourse is avoided. <u>Diesel, hydraulic fluid and lubricants</u> • Minimise on-site storage of petroleum products; • Ensure measures to contain spills readily available on site (spill kits). • All petrochemical leaks and spills must be appropriately contained and disposed of at a licensed waste disposal site. <u>Construction Vehicles</u> • All earth moving vehicles and equipment must be regularly maintained to ensure their integrity and reliability. No repairs may be undertaken beyond the contractor laydown area. • Should any transfer of vehicle fuel take place on site, it is important to demarcate a specific area for this purpose. This area should be covered with an impermeable layer to prevent any penetration of fuel and oil spillage into the soil. The area could also be sloped towards an oil trap or sump to ease collection of spilled substances. • All construction vehicles should be serviced on a regular basis to minimise the risk of oil spillage on site. • Servicing of vehicles or equipment must take place off-site at appropriate workshop facilities. • When not in use, construction vehicles must be parked at the hardpark, with		

		'impermeable layers', at the workshops to prevent leaks and spills from penetrating the substrate. <u>Construction site domestic waste and sewage</u> • Deposit solid waste in containers and dispose at authorised waste disposal sites regularly or as per the Waste Management Plan. • Dispose of liquid waste (grey water) with sewerage. • Temporary install appropriate ablution facilities. • Preferably utilise onsite ablution facilities or chemical toilets. <u>Construction site inert waste (waste concrete, reinforcing rods, waste bags, wire, timber etc)</u> • Ensure compliance with stringent daily clean up requirements on site. • Dispose at authorised waste disposal sites. <u>Construction site hazardous waste</u> • All hazardous substances must be stored on an impervious surface in a designated bunded area, able to contain 110% of the total volume of materials stored at any given time. • Material safety data sheets (MSDSs) are to be clearly displayed for all hazardous materials. • The integrity of the impervious surface and bunded area must be inspected regularly and any maintenance work conducted must be recorded in a maintenance report. • Employees should be provided with absorbent spill kits and disposal containers to handle spillages. • Train employees and contractors on the correct handling of spillages and precautionary measures that need to be implemented to minimise potential spillages. • Employees should record and report any spillages to the responsible person. • An Emergency Preparedness and Response Plan will be developed and implemented as part of the existing emergency response plan, should and incident occur. • Access to storage areas on site must be restricted to authorised employees only. • Contractors will be held liable for any environmental damages caused by spillages.		
Topographical Impacts Alteration of topography due to stockpiling of soil, building material and debris and waste material on site.	NEGATIVE MEDIUM	• All stockpiles must be restricted to designated areas and are not to exceed a height of 2 metres. • Stockpiles created during the construction phase are not to remain during the operational phase. • The contractor must be limited to clearly defined access routes to ensure	NEGATIVE LOW	LOW

		that sensitive and undisturbed areas are not disturbed.		
Impact of erosion Unnecessary clearing of vegetation can result in exposed soil prone to erosive conditions. Insufficient soil coverage after placing of topsoil especially during construction where large surface areas are applicable could also cause erosion. To cause the loss of soil by erosion is an offence under the law. <u>The development site</u> The average gradient (slope) across the site is 2,7% to 1,7%, with the higher ground to the east in the area of Pole 82. The study site is within a broad valley area between large mountain peaks and ranges.	NEGATIVE MEDIUM	• A combination of erosion prevention principles is discussed in detail in the EMPr. These include the use of mulch / fertiliser, matting, vegetation, retaining walls, topsoil coverage, diversion channels and berms, etc. • Other factors which should be taken into account during the construction phase are the following: • Unnecessary clearing of flora resulting in exposed soil prone to erosive conditions should be avoided. • Land disturbance must be minimized in order to prevent erosion and run-off - this includes leaving exposed soils open for a prolonged period of time. As soon as vegetation is cleared (including alien) the area must be re-vegetated. • Large exposed areas during the construction phases should be limited. Where possible areas earmarked for construction during later phases should remain covered with vegetation coverage until the actual construction phase. This will prevent unnecessary erosion and siltation in these areas. • The total area of exposed soil must be reduced during the rainy season. • Specifications for topsoil storage and replacement to ensure sufficient soil coverage as soon as possible after construction must be implemented. • Rehabilitation plan for disturbed temporary set up areas to be compiled and implemented as part of the construction phase. • Special attention must be given to the rehabilitation of temporary construction and set up areas. • Re-seeding of bare areas with local indigenous grasses to be part of the rehabilitation plan. No exotic species to be used for rehabilitation. • A Rehabilitation plan for disturbed areas to be compiled and implemented as part of the construction phase of the project. This plan can be the existing plan for the entire power line route from Paradise to Fondwe Substations. A new plan does not need to be specifically complied.	NEGATIVE LOW	LOW
Soils Impacts Removal and compaction of soil during construction activities. Erosion, degradation and loss of topsoil due to construction activities as well as surface and stormwater run-off.	NEGATIVE MEDIUM	• Strip topsoil prior to any construction activities. • Reuse topsoil to rehabilitate disturbed areas. • Topsoil must be kept separate from overburden and must not be used for building purposes or maintenance or access roads.	NEGATIVE LOW	LOW

		• Minimise the clearance of vegetation to avoid exposure of soil. • Protect areas susceptible to erosion with mulch or a suitable alternative. • Implement the appropriate topsoil and stormwater runoff control management measures as per the EMPr to prevent the loss of topsoil. • Topsoil should only be exposed for minimal periods of time and adequately stockpiled to prevent the topsoil loss and run-off.		
Air Quality Impacts Dust and emissions during construction generated by debris handling and debris piles, truck transport, bulldozing, general construction.	NEGATIVE MEDIUM	• Dust must be suppressed on the construction site and during the transportation of material during dry periods by the regular application of water. Water used for this purpose must be used in quantities that will not result in the generation of run-off. • Loads could be covered to avoid loss of material in transport, especially if material is transported off site. • Dust and mud should be controlled at vehicle exit and entry points to prevent the dispersion of dust and mud beyond the site boundary. • A speed limit of 40 km/hr should be set for all vehicles travelling over exposed areas. • During the transfer of materials, drop heights should be minimised to control the dispersion of mater being transferred. • The height of all stockpiles on site should be a maximum of 2m. • Use of dust retardant road surfacing if required due to the exceedance of Air Quality Guidelines.	NEGATIVE LOW	LOW
Impacts associated with construction activities such as noise, and safety The negative impact of noise, generally associated with construction activities, are temporary, occurring mostly during the construction phase. In terms of safety, it should be noted that the project involves deep excavations and open trenches. Excavations and open trenches can act as a trap for snakes, small mammals and lizards.	NEGATIVE MEDIUM	<u>Noise mitigation measures</u> • All construction activities should be undertaken according to daylight working hours between the hours of 07:00 – 17:00 on weekdays and 7:00 – 17:00 on Saturdays. • Construction activities may be undertaken on Sundays in cases of emergencies. • Provide all equipment with standard silencers. • Maintain silencer units in vehicles and equipment in good working order. • All earth moving vehicles and equipment must be regularly maintained to ensure their integrity and reliability. • Construction staff working in area where the 8-hour ambient noise levels exceed 85 dBA must have the appropriate Personal Protective Equipment (PPE). • All operations should meet the noise standard requirements of the Occupational Health and Safety Act (Act No. 85 of 1993). <u>Safety mitigation measures</u>	NEGATIVE MEDIUM	LOW

		• The area affected by construction must be fenced prior to any activities taking place. • All excavated areas must be clearly marked and barrier tape must be placed around them for safety purposes. • A Fire Management Plan has to be identified during the pre-construction phase and must be implemented throughout the construction and operation phases of the development.		
Traffic (construction vehicles) The construction phase is likely to generate additional traffic in terms of construction vehicles and heavy vehicles delivering materials to the site. However, the number of vehicles will be minimal.	NEGATIVE MEDIUM	• The heavy construction vehicles should avoid the local roads during peak traffic times and large deliveries should also be scheduled outside the peak traffic times. • Signs should be erected in the vicinity of the site. • Construction vehicles are to avoid main roads during peak traffic hours. • All vehicles entering the Site are to be roadworthy. • When using heavy or large vehicles / equipment, "spotters" are to be present to assist the driver with his blind spots. • Any incident or damage to a vehicle must be reported immediately.	NEGATIVE MEDIUM	LOW
Impact of Labourers An uncontrolled influx of labourers with resulting increase in crime and squatting would place pressure on the natural environment (placement of snares, removal of trees for firewood, careless waste disposal, etc.). This could be severe, resulting in permanent damage to the environment if not mitigated properly. <u>The development site</u> A small number of construction workers will be on site. A large workforce is thus not expected. Even if all the required labourers (highly skilled to unskilled) are sourced from outside the study area (worst case scenario) it is not anticipated that the relatively small construction workforce will have an impact on the population size and density of the local communities within the study area.	NEGATIVE MEDIUM	• Mitigation measures to counter impact on the natural environment and limit potential for crime during the construction phase should 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. • No temporary accommodation or temporary storage facilities may be setup within 50m of the any watercourse. • Part of the adjudication process for the successful contractor to undertake the civil works must be the use of casual and unskilled labour to stimulate local job creation through the use of labour intensive methods where possible. • If possible all labour should be sourced locally. • Contractors and their families may not stay on site. • No informal settlements will be allowed.	NEGATIVE LOW	LOW

Safety Public safety during construction.	NEGATIVE MEDIUM	• Members of the public adjacent to the construction site should be notified of construction activities in order to limit unnecessary disturbance or interference. • Construction activities will be undertaken during daylight hours and only on Sundays in cases of emergency.	NEGATIVE LOW	LOW
Safety Construction staff safety during construction.	NEGATIVE MEDIUM	• Ensure the appointment of a Safety Officer to continuously monitor the safety conditions during construction. • All construction staff must have the appropriate PPE. • The construction staff handling chemicals or hazardous materials must be trained in the use of the substances and the environmental, health and safety consequences of incidents. • Report and record any environmental, health and safety incidents to the responsible person.	NEGATIVE MEDIUM	LOW
Impact on Cultural Heritage Resources The field survey identified one burial site approximately 200m from the centre of the proposed powerline route at GPS Coordinates 22º 55¹ 46¹¹S 30º 14¹ 10¹¹E. The burial site is located under a huge tree between proposed Tower 78 & 79 and there are two graves. The burial site can be safely avoided without changing the route of the proposed powerline. There is always a probability that additional archaeological resources might be identified during excavations.	NEGATIVE LOW	• Mitigation for the proposed powerline development is required for the protection of the recorded burial site approximately 200m from the proposed powerline route. • The site must be clearly marked to avoid any accidental damage to graves. • The planners of the project must ensure that they provide at 30m buffer zone from the recorded burial site. • A copy of the chance finds procedure must be kept at the site office to ensure appropriate management of any accidental finds at the project site. • A 'Chance find Procedure' should be followed: • If there are any new heritages resources are discovered during construction and operation phases of the proposed development, then a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the findings at the expense of the developer. • If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required at the expense of the developer. Mitigation will only be carried out after the archaeologist or palaeontologist obtains a permit in terms of section 35 of the NHRA (Act 25 of 1999). • The applicant/ ECO may contact SAHRA APM Unit for further	NEGATIVE LOW	LOW

		details: (Nokukhanya Khumalo/ Phillip Hine 021 202 8654). • If any unmarked human burials are uncovered and the archaeologist called in to inspect the finds and/or the police find them to be heritage graves, then mitigation may be necessary and the SAHRA Burial Grounds and Graves (BGG) Unit must be contacted for processes to follow (Thingahangwi Tshivase/Mimi Seetelo 072 802 1251).		
Impact on Palaeontological Resources	NEGATIVE LOW	• In the unlikely event that fossils are uncovered during construction then construction must cease within the immediate vicinity, a buffer of 30 m must be established, and a palaeontologist called in to inspect the finds. • The palaeontologist must obtain a section 35(4) permit in terms of NHRA and Chapter IV NHRA Regulations, before any fossils are collected. • If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required at the expense of the developer. Mitigation will only be carried out after the archaeologist or palaeontologist obtains a permit in terms of section 35 of the NHRA (Act 25 of 1999). • The applicant/ ECO may contact SAHRA APM Unit for further details: (Nokukhanya Khumalo/ Phillip Hine 021 202 8654).	NEGATIVE LOW	LOW
Existing services and infrastructure Damage to the existing services and infrastructure during the construction phase and disruptions in services (i.e. Telkom lines, electricity) during the construction phase.	NEGATIVE LOW	• Discuss possible disruptions with affected parties to determine most convenient times for service disruptions and warn affected parties well in advance of dates that service disruptions will take place.	NEGATIVE LOW	LOW
Waste Management <u>Builder's and domestic waste</u> The construction phase will create small quantities of contractor's and domestic waste to be accommodated by local legal landfill sites.	NEGATIVE MEDIUM	• Develop a central waste temporary holding site to be used during construction. This site should comply with the following: • Skips for the containment and disposal of waste that could cause soil and water pollution, i.e. paint, lubricants, etc.; • Small lightweight waste items should be contained in skips with lids to prevent wind littering; • Bunded areas for containment and holding of dry building waste. • These areas shall be predetermined and located in areas that is already disturbed.	NEGATIVE LOW	LOW

		• These areas shall not be in close proximity of any watercourse.		
Sewage waste Generation and disposal of sewage waste of temporary construction toilets.	NEGATIVE MEDIUM	• On-site chemical toilets will be provided for domestic purposes during construction phase. • The contractors will be responsible for the maintenance of the chemical toilets. • No temporary facilities or portable toilets to be setup within 50m of any watercourse. • No French drain systems may be installed. • Should any spills or incidents occur; the material will be cleaned up immediately and disposed off appropriately. • All incidents must be reported to the responsible site officer as soon as it occurs.	NEGATIVE LOW	LOW
Economic impacts Positive economic impacts are anticipated. The impact on employment would be positive, and although the impact is expected to be small; any contribution to more employment is an achievement in South Africa.	POSITIVE HIGH	• Employment opportunities will be generated. • All labour (skilled and unskilled) and contractors should be sourced locally where possible. • A labour and recruitment policy must be developed, displayed and implemented by the contractor. • Recruitment at the construction site will not be allowed. • Where possible, labour intensive practices (as opposed to mechanised) should be practiced. • The principles of equality, BEE, gender equality and non-discrimination will be implemented.		
INDIRECT IMPACTS				
No indirect impacts were identified during the construction phase.				
CUMULATIVE IMPACTS				
Visual Impact The development of the site would contribute to the cumulative effects of the gradual transformation of the area from an area with part rural landscape components to an area dominated by infrastructure. Development site It is also important to take into consideration that, the landcover of the region is a mix of medium to large settlements and villages interspersed with agricultural lands and patches of bushveld. The study site consists of existing cultivated farmlands where open-field dry crops such as maize and vegetables		Project should adhere to the stipulated mitigation measures to limit impact to the natural habitat, to surface water, erosion etc.		

are grown year-round, mostly in the form of subsistence farming practices. Livestock also roam and graze freely through the area. The proposed power line route (servitude) will literally need to weave between villages. In other words, the power line servitude will be mostly within or next to disturbed areas. In general the overall cumulative impact will be 'Low' to 'Non-measurable'.				

NO GO ALTERNATIVE				
DIRECT IMPACTS				
Potential Impacts	Significance Rating	Mitigation Measures	Significance rating of impacts after mitigation	Risk of the impact and mitigation not being implemented
All the impacts outlined above will not apply to the No-Go alternative as the status quo will apply and the environment will remain as it is currently. However, it is important to note that the benefits associated with the development will also not materialise, and it must be noted that the majority of the impacts identified for the development were mitigated to a negative low or positive impact once the measures for mitigation were applied, indicating that maintaining the status quo is to lose the opportunity of a beneficial development with negligible environmental impacts.				
INDIRECT IMPACTS				
No indirect impacts were identified during the construction phase.				
CUMULATIVE IMPACTS				
No cumulative impacts were identified during the construction phase.				

3 OPERATIONAL PHASE

Paradise-Fondwe (PROPOSAL)				
DIRECT IMPACTS				
Potential Impacts	Significance Rating	Mitigation Measures	Significance rating of impacts after mitigation	Risk of the impact and mitigation not being implemented

Impact on the natural habitat The removal of any alien invasive plants will have a positive effect on the biodiversity of not only the site itself, but also its surrounds.	POSITIVE HIGH	Vegetation guidelines as stipulated in the EMPr must be followed during the operational phase of the project.		
Impact of alien vegetation	POSITIVE HIGH	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 power line. 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.		
Impact on avifauna	NEGATIVE MEDIUM	• Maintenance access roads to be limited to car tracks or small gravel roads under the power lines (This does not include existing roads or public gravel roads in the area that can be used to access the power line). • Access roads to be maintained and any erosion gullies to be rehabilitated as part of the maintenance programme on the power lines. • Any dead birds found in the power line servitude to be photographed, position recorded and reported to Eskom.	NEGATIVE LOW	LOW
Socio-Economic Impact The impact on employment would be positive, and although the impact is expected to be small; any contribution to more employment is an achievement in South Africa. POSITIVE IMPACT	POSITIVE LOW			
INDIRECT IMPACTS				
No indirect impacts were identified during the operational phase.				
CUMULATIVE IMPACTS				
No cumulative impacts were identified during the operational phase.				

NO GO ALTERNATIVE				
DIRECT IMPACTS				
Potential Impacts	Significance Rating	Mitigation Measures	Significance rating of impacts after mitigation	Risk of the impact and mitigation not being implemented
All the impacts outlined above will not apply to the No-Go alternative as the status quo will apply and the				

environment will remain as it is currently. However, it is important to note that the benefits associated with the electrical infrastructure development will also not materialise, and it must be noted that the majority of the impacts identified for the infrastructure development were mitigated to a negative low or positive impact once the measures for mitigation were applied, indicating that maintaining the status quo is to lose the opportunity of a beneficial infrastructure development with negligible environmental impacts.				
DIRECT IMPACTS				
No indirect impacts were identified during the operational phase.				
CUMULATIVE IMPACTS				
No cumulative impacts were identified during the operational phase.				

4 IMPACTS THAT MAY RESULT FROM THE DECOMISSIONING AND CLOSURE PHASE

Due to the permanent nature of this development proposal, decommissioning is highly unlikely and decommissioning therefore does not form part of this project proposal.

5 ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, an environmental impact statement will be completed. This will sum up the impact and its alternatives 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 and the significance of impact).

PLANNING & DESIGN PHASE (PROPOSAL)

Impact Description	Intensity	Extent	Duration	Probability it would occur	Significance rating After Mitigation
Impact on Natural Habitat and watercourses	1	1	1	1	Low

CONSTRUCTION PHASE (PROPOSAL)

Impact Description	Intensity	Extent	Duration	Probability it would occur	Significance rating After Mitigation
Impact on Natural Habitat	1	1	2	2	Low
Impact on Water Resources	1	1	1	1	Low
Impact on Avifauna	1	2	1	2	Low

Geology: Stability of structures, stability of excavations	1	1	3	1	Low
Impact on Erosion	2	1	1	2	Low
Impact of Noise, Safety and Dust	2	2	1	1	Low
Traffic Impact	2	2	1	1	Low
Impact of Labourers	2	2	1	1	Low
Impact on Cultural Heritage Resources	2	1	2	2	Low
Existing Services and Infrastructure	1	1	2	1	Low
Waste Management	2	1	1	2	Low
Economic Impacts This will be a POSITIVE impact	3	2	2	3	High

OPERATIONAL PHASE (PROPOSAL)

Impact Description	Intensity	Extent	Duration	Probability Probability it would occur	Significance rating After Mitigation
Impact on Natural Habitat This will be a POSITIVE impact	2	2	3	3	High
Impact on Avifauna	1	2	1	2	Low
Impact on Alien vegetation This will be a POSITIVE impact	2	2	3	3	High
Economic Impacts This will be a POSITIVE impact	3	2	2	3	High

NO-GO (Compulsory)
All the impacts outlined above will not apply to the No-Go alternative as the status quo will apply and the environment will remain as it is currently. However, it is important to note that the benefits associated with the development will also not materialise, and it must be noted that the majority of the impacts identified for the development were mitigated to a negative low or positive impact once the measures for mitigation were applied, indicating that maintaining the status quo is to lose the opportunity of a beneficial development with negligible environmental impacts.

6 IMPACT SUMMARY OF THE PROPOSAL OR PREFERRED ALTERNATIVE

The significance of impacts of the proposal and alternative(s), and reasons for selecting the proposal or preferred alternative are as follows:

Paradise-Fondwe Overhead Power line deviation

The project and related activities will have limited potentially negative impacts on the natural environment. The impacts will be at a very localised level (Study Site). The nature of the project is also known to have low levels of negative impacts on the natural environment. The overall footprint is small with poles/pylons every few hundred metres and bush clearing of approximately 8 wide under the line. With the implementation of mitigating measures and general standards and procedures for power line construction, the potential impacts can be reduced slightly and contained to the specific study site. Most of the negative impacts will be short-term

(during the construction phase), with the only measurable long-term potential impacts being those of potential bird electrocutions and collisions.

Proposal: Ecological
The proposed power line deviation is within a totally transformed environment of cultivated farmlands. The site is within the original extent of Soutpansberg Mountain Bushveld, however it is not a threatened veldtype / ecosystem and has a status of 'Least Concern'. No watercourses will be impacted on nor any RDL and ODL flora or fauna species. There are no sensitive or ideal habitats present for fauna and flora.
Taking all findings and recommendations into account it is the reasonable opinion of the author / specialist that the activity may be authorised.

Proposal: Avifauna
There are no watercourse crossings or open bodies of water in the study site (power line servitude). However, the Nzhelele River is a few hundred metres north of the site and a small, seasonal unnamed stream west of the site. The study site is within the extent of the Soutpansberg IBA, however, no ideal bird habitats exist. No priority birds / species of conservation concern were observed in the study area. It is however likely that some priority birds will traverse the area occasionally.
Taking all findings and recommendations into account it is the reasonable opinion of the author / specialist that the activity should be allowed to proceed.

Route alternative recommendations: Heritage
The field survey identified one burial site approximately 200m from the centre of the proposed powerline route it can be safely avoided without changing the proposed powerline route. The impact of the proposed project on heritage resources can be mitigated to an acceptable level and it is recommended that the proposed project can commence. The impact of the proposed project on heritage resources is low.

In summary, the potential negative impacts arising from the proposed project are very low. The footprint of the power line is small, with the biggest potential negative impacts being on birds regarding power line collisions and electrocutions. Besides birds, the project will have no measurable negative impacts on fauna and flora. The impacts are lessened by the fact that the entire study site (power line servitude) is within totally transformed agricultural farmlands.

Proposal for authorisation

1 **Paradise-Fondwe Overhead deviation power line**

23 RECOMMENDATION OF PRACTITIONER

The majority of the negative environmental impacts will be experienced during the construction phase. The majority of these impacts will have a LOW significance. It is envisaged that these impacts can be easily mitigated and satisfactorily managed. The management of the impacts identified in the BAR for the construction and operational phases, are outlined in the technical specialist report recommendations and the EMPr.

It is the opinion of Setala Environmental that there are presently no environmental impacts emanating from the proposed activity that cannot be adequately managed. The management of the negative impacts will require the implementation of the necessary mitigatory measures detailed in the Environmental Management Programme (EMPr, refer to Appendix F) of this report.

Based on the assumption that the mitigation measures will be effectively implemented for the proposed project

and its associated infrastructure and that no fatal flaws have been identified to date, it is the opinion of the EAP that this activity should be authorised to proceed to the final stages of decision making.

24 ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR)

An Environmental Management Programme was prepared to detail a plan of action to ensure that recommendations for preventing the negative environmental impacts (and where possible improving the environment) are implemented during the life-cycle of the project. The applicant has to sign and implement a Generic EMPr approved by the DFFE for the overhead lines. The Generic EMPr template are available in soft copy and in Appendix F. In addition, refer to Part C: Site Specific Environmental Attributes of the EMPr.

25 THE PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED

As per the Appendix 1(3)(1)(q) of the NEMA EIA Regulations 2014, as amended, the period for which the environmental authorisation is required, is five (5) years and the activity is expected to be concluded within 2 years from the date of authorisation.

26 CONCLUSION

In summary the following is recommended for authorisation:

This EIA investigated a 500m corridor to accommodate any future deviation of the power lines. The EIA will seek to authorise the total corridor. The wider area that was investigated will allow future potential amendments to the EA should it be necessary (at a later stage).
Should small changes be done to the route alignment after authorisation it will not be considered crucial and will not warrant a new application.

The EIA recommends the following for construction.
1 **Paradise-Fondwe Overhead power line deviation**

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