environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

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File Reference Number:	
Application Number:	DEA REF NR 14/12/16/3/3/1/497 NEAS REF DEA/EIA 0001056/2012
Date Received:	

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2010, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.

2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.

3. Where applicable **tick** the boxes that are applicable in the report.

4. An incomplete report may be returned to the applicant for revision.

5. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.

6. This report must be handed in at offices of the relevant competent authority as determined by each authority.

7. No faxed or e-mailed reports will be accepted.

8. The report must be compiled by an independent environmental assessment practitioner.

9. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.

10. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.

1. INTRODUCTION

South Africa's new Environmental Impact Assessment (EIA) regulations came into effect on 02 August 2010 signaling the start of the official implementation process of a new regime aimed at improving the efficiency and effectiveness of Environmental Impact Assessment.

EIA is a pro-active and systematic process where potential environmental impacts, both positive and negative, associated with certain activities are assessed, investigated and reported. The process contributes to giving effect to the objectives of integrated environmental management as decision makers are informed of the desirability of such activities and on the conditions which authorisation of the activity should be subject to, where relevant.

The new revised regulations were published by the Minister of Water and Environmental Affairs in Government Gazette 33306 of 18 June 2010. The National Environmental Management Act (NEMA) EIA 2010 regulations and the listing notices thereto replaced the NEMA EIA regulations of 2006 and its associated listing notices.

These regulations signify an important step towards a more efficient and effective EIA system, in that apart from aligning the 2006 Regulations with the new and improved Act, the 2010 EIA Regulations seek to streamline the EIA process. It also introduces an approach where impacts associated with the sensitivity of the receiving environment are treated with more care - this is achieved through the introduction of a Listing Notice dedicated to activities planned for predefined sensitive areas.

The lists of activities requiring environmental authorisation prior to commencement have also been revised. This was a major focus of the amendment process as the EIA system was inter alia overburdened by large numbers of applications associated with insignificant activities; the comprehensive scoping and EIR process with its associated substantial costs was in some instances unjustifiably required for activities for which the impacts were known and thereby potential entrepreneurs could be excluded from the economy; and some critical activities were omitted.

Subsequently, three listing notices have been published in conjunction with the new regulations.
Listing notice one (1) stipulates the activities requiring a basic assessment report (BAR). These are typically activities that have the potential to impact negatively on the environment but due to the nature and scale of such activities, these impacts are generally known. Listing notice two (2) identifies the activities requiring both Scoping and an Environmental Impact Report (EIR). These are typically large scale or highly polluting activities and the full range of potential impacts need to be established through a scoping exercise prior to it being assessed. Listing notice three (3) contains activities that will only require an environmental authorisation through a basic assessment process if the activity is undertaken in one of the specified geographical areas indicated in that listing notice. Geographical areas differ from province to province.

2. LEGAL REQUIREMENTS

An application for environmental authorisation is submitted to the National Department of Environmental Affairs (DEA) in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), read with the Environmental Impact Assessment Regulations, 2010 (GNR 543 of 2010) (EIA Regulations).

Relevant to this project is the activities that are listed in Listing Notices 1 and 3. A Basic Assessment (BA) is the procedure designed for Listing Notices 1 and 3, where the impacts of activities are more generally known and can be easily managed.

This document constitutes the Basic Assessment Report prepared in support of an environmental authorisation application. In addition to the statutory provisions in the NEMA more fully referred to herein below, other legislation and guidelines that have been considered in the preparation of the Report, includes relevant legislation on all levels including the constitutional, national, provincial and local level. A brief summary of the relevant legislation is outlined below.

2.1 The Constitution of the Republic of South Africa (Act 108 of 1996)

Section 2 of the Constitution of the Republic of South Africa (Act 108 of 1996) (CA) states that: "This Constitution is the supreme law of the Republic; law or conduct inconsistent with it is invalid, and the obligations imposed by it must be fulfilled." Section 24 of the CA, states that everyone has the right to an environment that is not harmful to their health or well-being and to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that:

- prevent pollution and ecological degradation;
- promote conservation; and
- secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

Section 24 guarantees the protection of the environment through reasonable legislative (and other measures) and such legislation is continuously in the process of being promulgated. Section 33(1) concerns administrative justice which includes the constitutional right to administrative action that is lawful, reasonable and procedurally fair. This Basic Assessment Report was accordingly prepared, submitted and considered within the constitutional framework set by inter alia section 24 and 33 of the Constitution.

2.2 The National Environmental Management Act (107 of 1998) and the Environmental Impact Assessment Regulations, 2010

The overarching principle of the National Environmental Management Act 1998 (Act 107 of 1998) (NEMA) is sustainable development. It defines sustainability as meaning the integration of social, economic and environmental factors into planning, implementation and decision making so as to ensure the development serves present and future generations.

Section 2 of NEMA (Act no 107 of 1998) provides for National Environmental Management Principles. These principles include inter alia:

- Environmental management must place people and their needs at the forefront of its concern.
- Development must be socially, environmentally and economically sustainable.
- Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated.
- Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing must be pursued.
- The participation of all Interested and Affected Parties (I&APs) in environmental governance must be promoted.
- Decisions must take into account the interests, needs and values of all I&APs.
- The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.
- The environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage.

The Environmental Impact Assessment (EIA) process to be undertaken in respect of the authorisation process of the proposed project is in compliance with the NEMA read with the Environmental Impact Assessment Regulations of 2010 (Government Notice No's R543, 544, 545 and 546 of 2010). The proposed development involves 'listed activities', as identified in terms of the NEMA and in terms of section 24(1), the potential consequences for or impacts on the environment of *inter alia* listed activities must be considered, investigated, assessed and reported on to the competent authority except in respect of those activities that may commence without having to obtain an environmental authorisation in terms of the NEMA.

As stated above, an environmental authorisation application has been submitted to the DEA for consideration. The following activities as listed were identified as applicable to the proposed construction of the project:

Relevant notice:	Activity No:	Description of each listed activity as per project description:
GNR 544 of 18 June 2010	Item 10. The construction of facilities or infrastructure for the transmission and distribution of electricity- (i) outside urban areas with a capacity of more than 33 but less than 275kV or more.	The construction of 132kV distribution lines from the existing Lebowakgomo substation to Dwaalkop substation and a 132kV loop-in-loop-out line to the proposed Boynton substation.
GNR 544 of 18 June 2010	Item 23. The transformation of undeveloped, vacant or derelict land to - residential, retail, commercial, recreational, industrial or institutional use, outside an urban area and where the total area to be transformed is bigger than 1 hectare but less that 20 hectares.	The transformation of undeveloped, vacant or derelict land to institutional use for the construction of a substation on an area of 200mx200m.

2.3 National Water Act (Act No 36 of 1998) (NWA)

In terms of the NWA, the national government, acting through the Minister of Water and Environmental Affairs (previously the Minister of Water Affairs and Forestry), is the public trustee of South Africa's water resources, and must ensure that water is protected, used, development, conserved, managed and controlled in a sustainable and equitable manner for the benefit of all persons (section 3(1)).
In terms of the NWA a person may only use water without a license under certain circumstances. All other use, provided that such use qualify as a use listed in section 21 of the Act, require a water use license. A person may only use water without a license if such water use is permissible under Schedule 1 (generally domestic type use) if that water use constitutes a continuation of an existing lawful water use (water uses being undertaken prior to the commencement of the NWA, generally in terms of the Water Act of 1956), or if that water use is permissible in terms of a general authorisation issued under section 39 (general authorisations allow for the use of certain section 21 uses provided that the criteria and thresholds described in the general authorisation is met). Permissible water use furthermore includes water use authorised by a license issued in terms of the NWA.

Section 21 of the NWA indicates that "water use" includes:
- taking water from a water resource (section 21(a));
- storing water (section 21(b));
- impeding or diverting the flow of water in a water course (section 21(c));
- engaging in a stream flow reduction activity contemplated in section 36 (section 21(d));
- engaging in a controlled activity which has either been declared as such or is identified in section 37(1) (section 21(e));
- discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit (section 21(f));
- disposing of waste in a manner which may detrimentally impact on a water resource (section 21(g);
- disposing in any manner of water which contains waste from, or which has heated in, any industrial or power generation process (section 21 (h));
- altering the bed, banks, course or characteristics of a water course (section 21(i));
- removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people (section 21(j)); and
- using water for recreational purposes (section 21(k)).

Of relevance is, that Alternative Routes traverse near a major water course (Tudumo/Chunies River) as well as a few seasonal streams and drainage lines. Whichever route is finally decided upon, stream crossings will still be necessary and mitigation measures are recommended to prevent any impact on water courses.
- Hence, no construction of any sort should take place within any aquatic and riparian habitats encountered, as these habitats are viewed as sensitive.
- There will therefore be *no impact on any watercourse or waterflow with regards to impeding flow or altering flow, as discussed in Section 21 c & I, or any of the listed water uses of the Water Act and relevant General Authorisations.*
- It is suggested that the applicant is complying with all aspects of the Water Act and General Authorisations, including all of the above points mentioned and there would therefore be **no need to obtain a water use license or register as a water user in terms of the General Authorisations.**

- It should however be noted, that If there are any activities which relates to section 21 water uses of the National Water Act 1998 (Act No. 36 of 1998), the applicant will need to get authorisation from the Department before such activities commences.

2.4 The National Heritage Resources Act (Act 25 of 1999)

The National Heritage Resources Act (Act No 25 of 1999, Art 3) outlines the following types and ranges of heritage resources that qualify as part of the National Estate, namely:

(a) places, buildings structures and equipment of cultural significance;
(b) places to which oral traditions are attached or which are associated with living heritage;
(c) historical settlements and townscapes;
(d) landscapes and natural features of cultural significance;
(e) geological sites of scientific or cultural importance;
(f) archaeological and palaeontological sites;
(g) graves and burial grounds including-
  (i) ancestral graves;
  (ii) royal graves and graves of traditional leaders;
  (iii) graves of victims of conflict;(iv) graves of individuals designated by the Minister by notice in the Gazette;
  (v) historical graves and cemeteries; and
  (vi) other human remains which are not covered by in terms of the Human Tissues Act, 1983 (Act No 65 of 1983);
(h) sites of significance relating to the history of slavery in South Africa;
(i) movable objects, including -
  (i) objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
  (ii) objects to which oral traditions are attached or which are associated with living heritage;
  (iii) ethnographic art and objects;
  (iv) military objects;
  (v) objects of decorative or fine art;
  (vi) objects of scientific or technological interest; and
  (vii) books, records, documents, photographs, positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No 43 of 1996).

The National Heritage Resources Act (Act No 25 of 1999, Art 3) also distinguishes nine criteria for places and objects to qualify as 'part of the national estate if they have cultural significance or other special value …'. These criteria are the following:

a) its importance in the community, or pattern of South Africa's history;
b) its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
c) its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;
g) its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
h) its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa;
(i) sites of significance relating to the history of slavery in South Africa

The current application requires a Phase 1 Heritage Impact Assessment by a qualified archaeologist/cultural heritage management consultant. Report attached in Appendix D2 and summary of results in 2.2.3. In addition, a Palaeontological Assessment was conducted of which the results are available in 2.2.4 and Appendix D4 of this report.

2.5 National Environmental Management: Biodiversity Act (Act 10 of 2004)

The National Environmental Management Biodiversity Act (Act No. 10 of 2004) (NEMBA) aims to provide for the management and conservation of South Africa's biodiversity within the framework of the National Environmental Management Act, 1998; the protection of species and ecosystems that warrant national protection; the sustainable use of indigenous biological resources; the fair and equitable sharing of benefits arising from bio prospecting involving indigenous biological resources; the establishment and functions of a South African National Biodiversity Institute; and for matters connected therewith.

The NEMBA provides for the publishing of various lists of species and ecosystems by the Minister of Water and Environmental Affairs as well as by a Member of the Executive Council responsible for the conservation of biodiversity of a province in relation to which certain activities may not be undertaken without a permit. In terms of Section 57 of the NEMBA, no person may carry out any restricted activity involving any species which has been identified by the Minister as "critically endangered species", "endangered species", "vulnerable species" or "protected species" without a permit. The NEMBA defines "restricted activity" in relation to such identified species so as to include, but not limited to, "hunting, catching, capturing, killing, gathering, collecting, plucking, picking parts of, cutting, chopping off, uprooting, damaging, destroying, having in possession, exercising physical control over, moving or translocating".
The Minister has made regulations in terms of section 97 of the NEMBA with regards to Threatened and Protected Species which came into effect on 1 June 2007. Furthermore, the Minister published lists of critically endangered, endangered, vulnerable and protected species in terms of section 56(1) of the NEMBA.

2.6 National Forests Act (Act 84 of 1998)

The project may involve the cutting, disturbing, damaging or destroying of any protected trees declared in terms of section 12 of the National Forest Act (NFA) (Act 84 of 1998). If this is proven during the EIA a license in terms of section 15 of the NFA will be required from the relevant provincial office of the Department of Agriculture, Forestry and Fisheries in order to cut them. In general all protected trees must be recorded during a walk down phase (once final route is pegged) and the presence of protected trees in the corridor must be confirmed.
Relevant to this project is that Red data species and protected species found in the area include *Sclerocarya birrea*. Although no *Balanites maughamii, Philenoptera violacea* and *Combretum imberbe* were observed during the survey, it should be confirmed. A walk down study is needed for the project to confirm and GPS all protected trees. Permits must be acquired before clearing of the servitudes can commence.

2.7 National Veld and Forest Fire Act (Act 101 of 1998)

The National Veld and Forest Fire Act (Act 101 of 1998) places an obligation on the owner of property to ensure compliance and hence creation of fire-breaks and 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 or to have a reasonable chance of preventing a veldfire from spreading to or from neighbouring land;
- not cause soil erosion; and be reasonably free of inflammable material capable of carrying a veldfire across it.

Servitudes are registered for all Eskom sub-transmission (33 to 132kV) power lines and a way leave agreement is obtained for the reticulation power lines (11 and 22 kV). The Act defines 'owner' as a lessee or other person who controls the land in question in terms of a contract, testamentary document, law or order of a High Court. Hence, the requirements for creating firebreaks or joining Fire Protection Agencies are applicable as far as where Eskom has a substation and not for power lines.

2.8 The Limpopo Environmental Management Act (LEMA), 2003 (Act no 7 of 2003)

The Limpopo Environmental Management Act (LEMA), 2003 (Act no 7 of 2003) took the place of the former Nature Conservation ordinances. The district offices of the Department of Economic Development, Environment & Tourism, Limpopo Province are designated to deal with compliance in terms of LEMA and the protected plants in terms thereof or applicable permits applications.

2.9 National Environmental Management: Waste Act (Act 59 of 2008) (NEMWA)

The NEMWA commenced on 1 July 2009 and as a result of its commencement the relevant provisions in the Environment Conservation Act 73 of 1989 (ECA) in respect of waste management, were repealed.
Section 19 of the NEMWA provides for listed waste management activities and states in terms of section 19(1), the Minister may publish a list of waste management activities that have, or are likely to have a detrimental effect on the

environment. Such a list was published in GN 718 of 3 July 2009 (GN 718).
In accordance with section 19(3), the Schedule to GN 718 provides that a waste management license is required for those activities listed therein prior to the commencement, undertaking or conducting of same. In addition, GN 718 differentiates between Category A and Category B waste management activities. Category A waste management activities are those which require the conducting of a basic assessment process as stipulated in the EIA Regulations, 2006 promulgated in terms of the NEMA as part of the waste management license application and Category B waste management activities are those that require the conducting of a scoping and environmental impact assessment process stipulated in the EIA Regulations, 2006 as part of the waste management license application.
No activity in respect of which a waste management license might be required under NEMWA, is envisaged for this project.

2.10 Civil Aviation Technical Standards (CATS)

Eskom has to adhere to Civil Aviation Technical Standards (CATS) regarding power lines. Power lines, overhead wires and cables are considered as obstacles and the detail shall be communicated to the Commissioner at an early planning stage. The Commissioner shall require the route of the power line, the co-ordinates (*latitude and longitude in degree, minute, seconds and tenth of seconds format*) of turning points in the line, the maximum height of the structures above ground level and the name of the power line. The Commissioner shall evaluate the route and require those sections of the line (if any), which is considered a danger to aviation to be marked or rerouted.
There is no specified definite distance between power lines and runways. The distances depends on various factors such as height of lines, surrounding topography, runway approach, length of airstrip, size of planes landing at aerodrome, etc. A directory of airfields that lists registered airfields around the country ("Airfields Directory for Southern Africa") is available and could be obtained from Aviation Direct cc (Tel 011 465 2669 or 011 465 5291).
The South African Civil Aviation Authority **(**SACAA) suggests that Eskom follows the following procedure for each project:

- Send map showing power line routes with pertinent GPS points (or kmz points – google earth) along power line route as well as co-ordinates of telecommunication towers.
- Highlight any airstrips.
- SACAA (Contact Mr. Chris Isherwood) will then give feedback as to distances from airstrip, possible alterations in routes, etc.

Of relevance to this project is that no telecommunication tower will be used at the Boynton substation as feedback from Eskom indicated that fibre optic cables will be used instead of a tower.

3. STUDY APPROACH

The approach followed by the consultants was based on the specifications for the undertaking of a Basic Assessment as provided in the document "Companion to the EIA Regulations, Integrated Environmental Management Guideline Series 5, Department of Environmental Affairs, 2010".
The study approach followed by the Consultants, in short, entailed the following steps:

- **Preliminary site investigations** to determine the scope of works of the project and to familiarise with the sites were done by the EAP and Eskom in March 2012.
- An **application** for a Basic Assessment was submitted to DEA and the project was issued with reference number DEA Ref 14/12/16/3/3/1/497 and NEAS Ref DEA/EIA 0001056/2012 on 12 March 2012.
- Specialist **ecological input** was obtained to investigate the flora, fauna and the general biophysical environment in an attempt to identify the potential impacts of the project.
- The proposed development is covered by the National Heritage Resources Act which incorporates heritage impact assessments in the Environmental Impact Assessment process. A Phase 1 **Heritage Impact Assessment** was therefore done by a specialist to identify the potential impact on heritage resources. The National Heritage Resources Act 25 of 1999 in addition requires that all heritage resources, that is, all places or objects of aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance be protected. Fossil heritage of national and international significance is found within all provinces of the RSA. Therefore a **Palaeontological Assessment** was also commissioned.

- Input from an **avifauna specialist** was also obtained to determine the impact of the proposed project on birds.
- During the months of March - May 2012 the EAP, the ecologist, the bird impact specialist and the archaeologist/cultural heritage management consultant conducted additional site investigations.
- The **Public Participation Programme** (PPP) started in March 2012 and continued until October 2012. It included the identification of key stakeholders, the distribution of **information letters** with a request for comment, as well as advertising of the project in the local press and on site.
- In addition, notification of an **information meeting** on 16 May 2012 was sent to all IAPs. The purpose of the meeting was to furnish the landowners and other interested parties with information regarding the extent of the project, the proposed alternatives, the process of negotiations for servitudes, and the extent of the Environmental Impact Assessment Process. Project posters with information and maps of the routes were presented at the meeting. Written comment was requested at the meeting.
- **One-on-one meetings** were conducted with all **landowners** to assist in the identification of potential powerline corridors and site locations. In addition to the above **several meetings** were conducted with the **relevant Tribal Authorities** to address their specific requirements.
- A **draft Basic Assessment Report** was compiled with the main aim to identify issues, potential impacts and potential alternatives associated with this project. It included a description of the status quo of all relevant environmental components as well as the proceedings of the PPP and communication with registered Interested & Affected Parties (IAPs).
- The **draft Basic Assessment Report** was distributed on **12 November 2012** to the following stakeholders for their comment :
  - Department of Water Affairs: Water Resources & Water Quality Management
  - South African Heritage Resources Authority
  - Limpopo Heritage Resource Authority / LIHRA
  - Limpopo Department of Economic Development, Environment and Tourism: Environmental Impact Management
  - Department of Agriculture, Forestry and Fisheries: Land Use and Soil Management
  - Department of Minerals and Energy
  - Road Agency Limpopo
  - Department of Roads and Transport
  - Department of Cooperative Governance Human Settlement and Traditional Affairs: Spatial and Human Settlement Planning
  - Department of Rural Development and Land Reform: State Land Administration
  - Endangered Wildlife Trust
  - Lepelle-Nkumpi Local Municipality
  - Capricorn District Municipality
  - Eskom Transmission
  - Eskom Distribution Northern Region
  - Platmin Limited
  - Ledwaba Traditional Authority
  - Mphahlele Traditional Authority
  - Landowners
- The **due date for comment** to the draft Basic Assessment Report is **15 January 2013** .
- Subsequently, a **final Basic Assessment Report (BAR)** will be compiled and submitted to DEA by March 2013**.** This report will include all concerns raised to the draft BAR and responses thereto. The Consultants (EAP) will ensure that all concerns raised are addressed in appropriate detail in the final Basic Assessment Report.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?	YES	NO
If YES, please complete the form entitled "Details of specialist and declaration of interest" for appointment of a specialist for each specialist thus appointed:		

Any specialist reports must be contained in Appendix D.

1. ACTIVITY DESCRIPTION

Describe the activity, which is being applied for, in detail[1]:

1.1 Background

Eskom Distribution, Limpopo Operating Unit (the Applicant) commissioned Texture Environmental Consultants (the Environmental Assessment Practitioner) to undertake an Environmental Impact Assessment for the following project.

The Eskom Boynton Project entails the following:

- Identification of potential alternative corridor routes for a 13.29km 132kV kingbird power line between the existing Lebowakgomo substation to the new Dithabaneng substation;
- Identification of potential alternative corridor routes for a 8.67km 132kV kingbird power line from the Dithabaneng substation to the new Dwaalkop substation;
- Identification of a potential alternative corridor route for an approximately 1.2km 132kV loop-in-loop-out (lilo) line from the Middelpunt-Dithabaneng 132kV line to the proposed Boynton substation;
- The project involves identification of a 100m corridor within which Eskom would be able to locate a 31m servitude for the powerline between Lebowakgomo substation and Dwaalkop substation, and of 52 metres wide for the lilo line to Boynton substation. The servitude is required for maintenance purposes.
- Identification of a site for the establishment of a 2X10MVA 132/22kV Boynton Substation with 4X 22kV feeder bays on a terrain of 200x200m;
- Identification of potential corridors to construct an access/ construction road of 8 meters wide for the line and substation.

The applicant is Eskom Distribution, Limpopo Operating Unit, Land Development with contact person Mrs. Prudence Khoza, Environmental Management in Polokwane.

1.2 Locality and Regional Context

Eskom intends to construct various new 132 kV power lines, and a substation in the Lebowakgomo and Chuniespoort areas in the Limpopo Province of South Africa. The proposed development area is situated approximately fifty kilometres to the east of Mokopane (Potgietersrus) and running to the north and to the east of Lebowakgomo, previous capital of the Lebowa homeland. The Chuniespoort and Strydpoort mountains are to the north. The Tudumo and Chunies River runs in a north-south direction.

The project will be discussed as follows:

- **Section 1**: The new 132kV power line between the existing Lebowakgomo substation and the new Dithabaneng substation.
- **Section 2**: The new 132kV power line between the Dithabaneng substation and the new Dwaalkop substation.
- **Section 3**: The 132kV Loop-in-Loop-out (LiLo) line from the Middelpunt- Dithabaneng 132kV line to the proposed Boynton substation.

[1] Please note that this description should not be a verbatim repetition of the listed activity as contained in the relevant Government Notice, but should be a brief description of activities to be undertaken as per the project description.

The **affected properties** for the project are the farms Voorspoed 458 KS (Remainder), Rooiboklaagte 112 KS Ptn 0, Voorspoed 458 KS (Ptns 11, 15, 16, 23, 17, 9 and 4), Locatie van Mphahlele 457 KS (Remainder) in the Lepelle-Nkumpi Local Municipality in the Limpopo Province.

The study area is situated on the 1:50 000 topographical base maps 2429AD & 2429BC.
(Refer to Appendices A1-A7 for copies of the Locality map and the route maps). The proposed alternatives for the project are found at approximately:

Section 1: Lebowakgomo Substation to Dithabaneng Substation

Lebowakgomo Substation:

Longitude (Degrees Decimal Minutes)	Latitude (Degrees Decimal Minutes)
29° 27.838' E	24° 16.751' S

Dithabaneng Substation:

Longitude (Degrees Decimal Minutes)	Latitude (Degrees Decimal Minutes)
29° 33.803' E	24° 18.970' S

Proposed Alternative 1 Route (13.29 km):

250m intervals	Longitude (Degrees Decimal Minutes)	Latitude (Degrees Decimal Minutes)
1	29° 27.847' E	24° 16.733' S
2	29° 27.863' E	24° 16.602' S
3	29° 28.011' E	24° 16.602' S
4	29° 28.097' E	24° 16.690' S
5	29° 28.159' E	24° 16.812' S
6	29° 28.306' E	24° 16.812' S
7	29° 28.454' E	24° 16.813' S
8	29° 28.585' E	24° 16.849' S
9	29° 28.685' E	24° 16.948' S
10	29° 28.786' E	24° 17.047' S
11	29° 28.887' E	24° 17.146' S
12	29° 28.999' E	24° 17.221' S
13	29° 29.146' E	24° 17.220' S
14	29° 29.294' E	24° 17.219' S
15	29° 29.442' E	24° 17.218' S
16	29° 29.589' E	24° 17.217' S
17	29° 29.736' E	24° 17.212' S
18	29° 29.875' E	24° 17.165' S
19	29° 30.014' E	24° 17.118' S
20	29° 30.116' E	24° 17.189' S
21	29° 30.207' E	24° 17.295' S
22	29° 30.303' E	24° 17.397' S
23	29° 30.436' E	24° 17.439' S
24	29° 30.584' E	24° 17.441' S
25	29° 30.732' E	24° 17.442' S
26	29° 30.823' E	24° 17.543' S
27	29° 30.908' E	24° 17.653' S
28	29° 31.022' E	24° 17.692' S
29	29° 31.165' E	24° 17.657' S
30	29° 31.307' E	24° 17.622' S
31	29° 31.450' E	24° 17.587' S
32	29° 31.593' E	24° 17.553' S
33	29° 31.736' E	24° 17.518' S
34	29° 31.878' E	24° 17.483' S
35	29° 32.021' E	24° 17.448' S
36	29° 32.164' E	24° 17.413' S
37	29° 32.307' E	24° 17.378' S
38	29° 32.449' E	24° 17.343' S
39	29° 32.569' E	24° 17.407' S
40	29° 32.684' E	24° 17.493' S
41	29° 32.798' E	24° 17.579' S

42	29° 32.913' E	24° 17.664' S
43	29° 33.027' E	24° 17.750' S
44	29° 33.142' E	24° 17.835' S
45	29° 33.256' E	24° 17.921' S
46	29° 33.371' E	24° 18.006' S
47	29° 33.485' E	24° 18.092' S
48	29° 33.551' E	24° 18.207' S
49	29° 33.592' E	24° 18.337' S
50	29° 33.671' E	24° 18.450' S
51	29° 33.758' E	24° 18.560' S
52	29° 33.786' E	24° 18.689' S
53	29° 33.797' E	24° 18.824' S

Proposed Alternative 2 Route (12.59 km):

250m intervals	Longitude (Degrees Decimal Minutes)	Latitude (Degrees Decimal Minutes)
1	29° 27.862' E	24° 16.711' S
2	29° 27.904' E	24° 16.641' S
3	29° 28.016' E	24° 16.730' S
4	29° 28.128' E	24° 16.818' S
5	29° 28.253' E	24° 16.891' S
6	29° 28.379' E	24° 16.961' S
7	29° 28.505' E	24° 17.031' S
8	29° 28.632' E	24° 17.101' S
9	29° 28.758' E	24° 17.171' S
10	29° 28.884' E	24° 17.242' S
11	29° 29.022' E	24° 17.282' S
12	29° 29.168' E	24° 17.297' S
13	29° 29.315' E	24° 17.311' S
14	29° 29.462' E	24° 17.326' S
15	29° 29.609' E	24° 17.341' S
16	29° 29.756' E	24° 17.355' S
17	29° 29.903' E	24° 17.370' S
18	29° 30.050' E	24° 17.385' S
19	29° 30.196' E	24° 17.401' S
20	29° 30.309' E	24° 17.488' S
21	29° 30.442' E	24° 17.531' S
22	29° 30.589' E	24° 17.539' S
23	29° 30.736' E	24° 17.547' S
24	29° 30.884' E	24° 17.556' S
25	29° 31.032' E	24° 17.564' S
26	29° 31.179' E	24° 17.572' S
27	29° 31.326' E	24° 17.581' S
28	29° 31.474' E	24° 17.589' S
29	29° 31.621' E	24° 17.597' S
30	29° 31.769' E	24° 17.606' S
31	29° 31.916' E	24° 17.614' S
32	29° 32.051' E	24° 17.572' S
33	29° 32.180' E	24° 17.505' S
34	29° 32.309' E	24° 17.439' S
35	29° 32.437' E	24° 17.372' S
36	29° 32.556' E	24° 17.409' S
37	29° 32.670' E	24° 17.495' S
38	29° 32.784' E	24° 17.581' S
39	29° 32.898' E	24° 17.667' S
40	29° 33.013' E	24° 17.753' S
41	29° 33.127' E	24° 17.839' S
42	29° 33.241' E	24° 17.925' S
43	29° 33.355' E	24° 18.011' S
44	29° 33.469' E	24° 18.097' S
45	29° 33.536' E	24° 18.212' S
46	29° 33.579' E	24° 18.342' S
47	29° 33.657' E	24° 18.455' S
48	29° 33.744' E	24° 18.565' S

49	29° 33.770' E	24° 18.694' S
50	29° 33.777' E	24° 18.829' S

Section 2: Dithabaneng Substation to Dwaalkop Substation

Dithabaneng Substation:

Longitude (Degrees Decimal Minutes)	Latitude (Degrees Decimal Minutes)
29° 33.803' E	24° 18.970' S

Dwaalkop Substation:

Longitude (Degrees Decimal Minutes)	Latitude (Degrees Decimal Minutes)
29° 30.664' E	24° 21.597' S

Proposed Alternative 1 Route (8.67 km):

250m intervals	Longitude (Degrees Decimal Minutes)	Latitude (Degrees Decimal Minutes)
1	29° 33.768' E	24° 19.102' S
2	29° 33.733' E	24° 19.233' S
3	29° 33.699' E	24° 19.365' S
4	29° 33.664' E	24° 19.497' S
5	29° 33.629' E	24° 19.628' S
6	29° 33.595' E	24° 19.760' S
7	29° 33.484' E	24° 19.827' S
8	29° 33.343' E	24° 19.867' S
9	29° 33.202' E	24° 19.908' S
10	29° 33.061' E	24° 19.948' S
11	29° 32.920' E	24° 19.989' S
12	29° 32.779' E	24° 20.029' S
13	29° 32.638' E	24° 20.070' S
14	29° 32.497' E	24° 20.110' S
15	29° 32.368' E	24° 20.163' S
16	29° 32.314' E	24° 20.289' S
17	29° 32.259' E	24° 20.415' S
18	29° 32.205' E	24° 20.541' S
19	29° 32.150' E	24° 20.666' S
20	29° 32.095' E	24° 20.792' S
21	29° 32.057' E	24° 20.918' S
22	29° 32.113' E	24° 21.043' S
23	29° 32.169' E	24° 21.169' S
24	29° 32.205' E	24° 21.285' S
25	29° 32.061' E	24° 21.314' S
26	29° 31.916' E	24° 21.343' S
27	29° 31.772' E	24° 21.373' S
28	29° 31.628' E	24° 21.402' S
29	29° 31.483' E	24° 21.431' S
30	29° 31.339' E	24° 21.461' S
31	29° 31.195' E	24° 21.490' S
32	29° 31.050' E	24° 21.519' S
33	29° 30.906' E	24° 21.548' S
34	29° 30.762' E	24° 21.577' S
35	29° 30.664' E	24° 21.597' S

Proposed Alternative 2 Route (7.95 km):

250m intervals	Longitude (Degrees Decimal Minutes)	Latitude (Degrees Decimal Minutes)
1	29° 33.637' E	24° 18.981' S
2	29° 33.490' E	24° 18.986' S
3	29° 33.342' E	24° 18.992' S
4	29° 33.194' E	24° 18.998' S
5	29° 33.047' E	24° 19.003' S
6	29° 32.899' E	24° 19.009' S
7	29° 32.815' E	24° 19.097' S
8	29° 32.760' E	24° 19.223' S

9	29° 32.705' E	24° 19.349' S
10	29° 32.649' E	24° 19.474' S
11	29° 32.594' E	24° 19.600' S
12	29° 32.539' E	24° 19.725' S
13	29° 32.484' E	24° 19.851' S
14	29° 32.429' E	24° 19.977' S
15	29° 32.374' E	24° 20.102' S
16	29° 32.318' E	24° 20.228' S
17	29° 32.263' E	24° 20.354' S
18	29° 32.208' E	24° 20.479' S
19	29° 32.153' E	24° 20.605' S
20	29° 32.097' E	24° 20.730' S
21	29° 32.042' E	24° 20.856' S
22	29° 31.921' E	24° 20.929' S
23	29° 31.793' E	24° 20.997' S
24	29° 31.666' E	24° 21.065' S
25	29° 31.538' E	24° 21.133' S
26	29° 31.410' E	24° 21.201' S
27	29° 31.282' E	24° 21.269' S
28	29° 31.154' E	24° 21.337' S
29	29° 31.026' E	24° 21.405' S
30	29° 30.898' E	24° 21.473' S
31	29° 30.770' E	24° 21.541' S
32	29° 30.664' E	24° 21.597' S

Section 3: Boynton lilo line

Boynton Substation:

Longitude (Degrees Decimal Minutes)	Latitude (Degrees Decimal Minutes)
29° 35.959' E	24° 20.239' S

Proposed Alternative 1 Route (1.2 km):

250m intervals	Longitude (Degrees Decimal Minutes)	Latitude (Degrees Decimal Minutes)
1	29° 35.959' E	24° 20.239' S
2	29° 35.961' E	24° 20.121' S
3	29° 35.961' E	24° 19.850' S
4	29° 35.962' E	24° 19.715' S
5	29° 35.962' E	24° 19.579' S

1.3 Project Details

1.3.1 Need for the project

The current Environmental Impact Assessment application is part of a broader scope of works to improve Eskom's network performance. The existing Distribution networks are exceeding their maximum power transfer capability. Currently the network is experiencing under voltages and is incapable of handling additional loads due to the contingency restraints of the network. In addition to the above, the Boynton Mphahlele Mine (Platmin SA) requires 46.5MVA supply for underground mining and a concentrator. This current project aims in addition to address the requested supply.
(Refer to the Eskom Scope of works, in Appendix C1, for more information).

1.3.2 Project components

The project components are as follows:
1. Construct a 13.29km 132kV kingbird power line between the existing Lebowakgomo substation to the new Dithabaneng substation;
2. Construct a 8.67km 132kV kingbird power line from the Dithabaneng substation to the new Dwaalkop substation;

3. Construct an approximately 1.2km 132kV loop-in-loop-out (lilo) line from the Middelpunt-Dithabaneng 132kV line to the proposed Boynton substation;
4. Obtain a corridor of 100 meters wide within which Eskom will be able to obtain a 31 meters wide servitude for the line between Lebowakgomo substation and Dwaalkop substation, and a 52 metres wide servitude for the lilo line to Boynton substation;
5. Establish a 2X10MVA 132/22kV Boynton Substation with 4X 22kV feeder bays on a terrain of 200x200m;
6. Construct an access/ construction road of 8 meters wide for the line and substation.

1. *Construct a 132kV power line between the existing Lebowakgomo substation to the new Dithabaneng substation*
   It is proposed to construct a 132kV line between the above substations. The proposed structure for the 132kV power line, is a monopole steel structure. In general, these pylons could be placed 220-350 meters apart, for the length of the line. The pylons for a power line are between 18 to 30 meters high, depending on the terrain and existing land use. The flatter the terrain, the shorter the pylons to be used. The conductor attachment height on a pole is 13m (for 20m intermediate poles) and more for longer poles, depending on the pole length. Ground clearances will adhere to OSH-Requirements of 6.3m and 7.5m.
   Strain poles have a planting depth of 2m but intermediate pole planting depths varies between 2.6m (for 20m poles) and 3m (for 24m poles) or more depending on the pole length. The pole is not planted in a slab - 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.
   Should the pylons be 21m high above ground then the planting depth of the pylon could be calculated as follows: For a pylon that need to be 21m above ground, the planting depth will be 0.6 meters plus 10% of the height of the pylon above ground = 0.6 meters plus 2.1 meters = pylon is planted 2.7 meters deep. Should stays be needed then the stays will be at a 45° angle to the pylon and planted 21meters from the pylon into the ground.
   Where the site is relatively flat, single pylons without stays will be used, except for where the power line has to change direction. Stays will not be used except at turns in the route.
   Clearance between phases on the same side of the pole structure is normally around 2.2m for this type of design, and the clearance on strain structures is 1.8m. This clearance should be sufficient to prevent phase – phase electrocutions of birds on the towers. The length of the stand-off insulators is likely to be about 1.5 meters.
   Refer to Appendices C2 and C3 in the BAR for visuals of the monopole steel structure (pylon).

2. *Construct a 8.67km 132kV kingbird power line from the Dithabaneng substation to the new Dwaalkop substation*
   The same specifications, as in point 1 above, are relevant.

3. *Construct a 1.2km 132kV loop-in-loop-out (lilo) line from the Middelpunt-Dithabaneng 132kV line to the proposed Boynton substation;*
   It is proposed to construct a 132kV (lilo) line from the existing Middelpunt-Dithabaneng 132kV line to the proposed Boynton substation. The two lines will be adjacent and parallel to each other and the separating distance from each other is 21 meters. The same specifications as in point 1 above will apply to this lilo line.

4. *Obtain* a 100m corridor within which Eskom would be able to locate a *servitude area of 31 meters wide for the line between Lebowakgomo substation and Dwaalkop substation, and a servitude area of 52 metres wide for the lilo line to Boynton substation.*
   Eskom relies on the goodwill of landowners and interested and affected parties to obtain rights of way, or servitudes for power lines. Hence, landowners are consulted during the construction of new power lines and existing landowners are notified when vegetation clearance is due to be performed. Eskom obtains right of way by negotiating a right of way or registering a servitude. The difference between these is detailed below:
   Servitude: A servitude is a real right which Eskom obtained in order to construct its infrastructure upon the affected property and it is registered in the Deeds Office against the title deed of the affected property. The affected owner normally gets compensated for this right according to market related values. A servitude stays effective even if a property is transferred to another owner. Rights to obtain a servitude is negotiated for 33kV, 88kV and 132kV power lines.
   Way Leave Agreement: A way leave agreement is a personal right, which Eskom obtained in order to construct its infrastructure, such as rural power lines, upon the affected property. The way leave document contains clauses to

the effect that the agreement is also binding on the successors in title. These rights are not registered in the Deed Office and Eskom does not pay compensation for these rights. The argument for this is that Eskom normally obtains way leave agreements only for minor reticulation type of power line projects (11kV and 22kV lines) from which a property owner can benefit by utilising the available energy.
The project involves identification of a 100m corridor within which Eskom would be able to locate a 31m servitude for the powerline between Lebowakgomo substation and Dwaalkop substation, and of 52 metres wide for the lilo line to Boynton substation. A servitude area is generally a no building area, except for Eskom structures. Usually, normal farming activities may continue in a servitude with the exception that no trees may be planted or high structures may be erected. In general, the servitude for Eskom 132kV power lines is 31 meters wide, which implies 15,5 meters on either side of the power line. The two lines of the lilo line will be 21 meters apart, which implies a total of 52 meters for an area servitude.

5. *Construct Boynton 2X10MVA 132/22kV Substation on a terrain of 200m X 200m.*
   For this project, an area of 200m x 200m will be used as the site for the construction of the Boynton substation. The area of 200m x 200m will therefore be registered as an Eskom servitude. The site is flat and suitable for the construction of the substation. No alternative to the site could be investigated due to the layout of the mine and its associated activities. (Refer to Appendix C1 for the Eskom scope of work and more information on the substation).

6. *Construct an access road for the new line*
   Access to properties for the purpose of construction are as a rule arranged with all landowners. The existing roads will be used as far as possible. Relevant is the fact that the proposed alternative 1 is adjacent to existing impact (roads), or existing servitude areas, for most of the alignment. New access will therefore only be required at the sections away from the roads. Should a temporary construction road be unavoidable, then an area of 8m will be selectively cleared, 4m on either side of the center line of the power line. During construction all vehicle movement must be along existing roads, adjacent to the fences of applicable properties, as far as is feasible.

1.4 Consideration for servitudes

The process of negotiations can commence as soon as the Environmental Impact Assessment recommend the preferred alternative i.e. route, site etc. for the project. After identification of the preferred alternative, a land valuator will be appointed to value the property(ies). The distance/length of the line affecting each property is measured to calculate the area affected by the line. A process of negotiations will follow between landowner(s) and Eskom appointed negotiators. After agreement has been reached, Eskom and the landowner will sign the documents. The valuations will be tabled before an Eskom tender committee for approval. Eskom pays the consideration as determined by the professional evaluator on a before and after basis. Servitude rights for a servitude in general terms will be obtained by means of an “Option to Acquire a Servitude”. Interest will be paid according to the laid down principle by the National Treasury Act.
Eskom Distribution has a compensation model that allows for a once-off compensation for the servitude which will be paid upon registration of the servitude. A servitude will be registered which provides Eskom with the rights to construct and maintain a power line on the applicable property. The applicable land is therefore not purchased. All normal activity on the farm/land can continue as usual. For the sake of safety the landowner should not construct any structures in the servitude area underneath the power line. Eskom has the right to enter the servitude 24 hours per day to maintain the line in so much as following the laid down farm access protocol.
Power for rural supply cannot be supplied directly from an 132kV line. There is however indirect benefit in the construction of the line for the community, in that the supply would be strengthened with a feed to the substations that feed the rural lines. Eskom strives to follow the shortest route from point A to B due to the fact that the line costs approximately R1 600 000 per kilometer to construct. Objections from landowners/users and site-specific problems will be considered in the finalisation of any route/site.
The option document (referred to above) is a binding document that will reflect all the requirements of the landowner, for example: the negotiated compensation for the servitude; specific access arrangements to his property etc. Negotiations between the landowner and the negotiator will address site-specific requirements such as the positions of the pylons, on the property in question. These agreements/requirements will be noted on a site plan, as part of the

option document. Construction may only commence once the environmental authorisation has been issued and the option document has been signed by the affected landowner.

2. FEASIBLE AND REASONABLE ALTERNATIVES

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

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

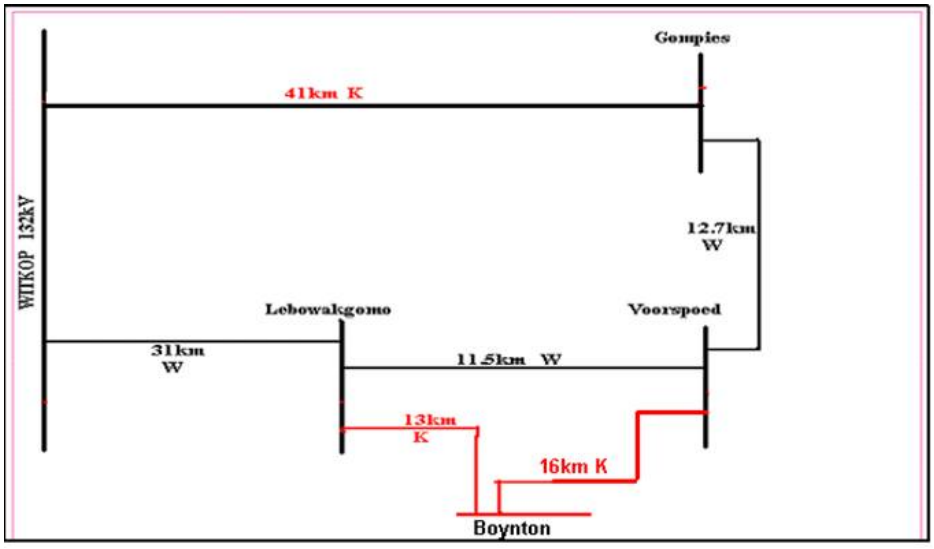
Describe alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

THE FOLLOWING ALTERNATIVES HAVE BEEN IDENTIFIED AND ARE DESCRIBED AS FOLLOWS:

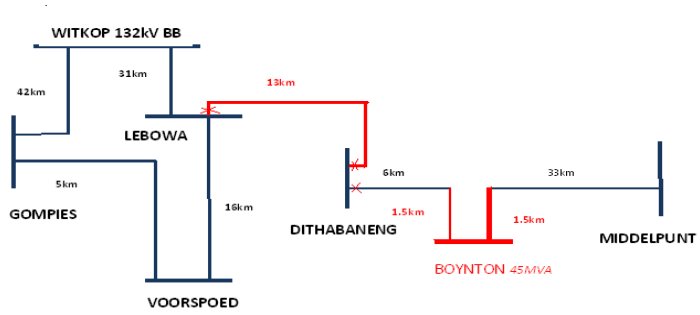
2.1 ACTIVITY ALTERNATIVES:

2.1.1 Electricity Distribution

In prelimanary investigations Eskom identified two alternatives for supplying Boynton substation.
Option 1: To supply Boynton from Voorspoed substation and Lebowakgomo substation.
Option 2: To supply Boynton from Dithabaneng-Middelpunt 132kV line by creating loop in and out of Boynton substation.
These options were considered and option 1 was found to be the more expensive option. For this reason, amongst others, option 2 was supported.



Option 1



Option 2

Option 2 is the therefore the alternative that was chosen to be investigated in this current EIA. The proposed project is part of a total solution to supply the network and the Boynton Mphalele Mine with electricity.

2.1.2 Agriculture

The construction of power lines with the resulting clearance of servitudes can lead to a loss in agricultural land. The proposed construction of the power line will however not impact significantly on any agricultural activity. The following is relevant for this project:

- Mining is by far the largest contributor to the economy of the local municipality with the role of agriculture fairly insignificant.
- Deforestation is one of the major environmental problems affecting most areas. It occurs due to chopping of trees for firewood and poor affordability to access electricity. This may lead to loss of habitat and sensitive species.
- Further, overgrazing leads to vegetation composition imbalances and soil erosion. The major influencing factor in this regard is overstocking by those practicing farming whereby no one takes responsibility of the piece of land they all use for grazing.
- Shortage of water is a limiting factor due to lack of major rivers and poor rainfall. In addition, poor water quality is found due to high concentration of total dissolve solid (TDS) and nitrates.
- Should the construction of the power line impact on any agricultural activities, this impact will only be for a limited period during construction. An access road of 8m wide will be cleared to construct the power line. After construction the access road could be revegetated and normal agricultural activities could continue under the power line as usual.
- It is therefore submitted that the servitude area will not interfere with any agricultural activities. In addition, Eskom will not own the servitude but will purchase the rights to construct and maintain the line. A change in land use from agriculture to any other land use is not applicable.
- In addition, in terms of the Subdivision of Agricultural Land Act, 1970 (Act 70 of 1970), Section 2(a) Eskom is a statutory body and therefore it is not subjected to the provisions of the Act.

2.1.3 No-Go

It is suggested that to maintain the status quo is not the best option for the macro environment. This project is part of Eskom's implementation of a Master Plan for the extension of electrical infrastructure. Should this application not be approved then the supply to the broader area will not be reliable and this can result in blackouts and major disturbances in energy provision. In the future, new development might cause overloading of the already stressed existing system which can cause major disruptions of power supply to different areas at different times. The No-go option would not solve the current demand for electricity. In addition the mine will not be able to continue with its activities. The No-Go development alternative could therefore not be considered the responsible way to manage the site(s).

2.2 LOCATION ALTERNATIVES

The project consists of the construction of approximately 25km of 132kV power lines between the existing Lebowakgoma substation and the existing Dwaalkop substation, and in addition the construction of a new substation to be called Boynton. Alternative routes for the power lines were considered. Refer to Appendix A for the project maps indicating the route Alternatives. Specialist input was obtained to investigate the impact of the various alternative routes that could accomplish the purpose of the project. The specialist input is summarised as follows:

2.2.1 Ecological Status Report

- **Section 1**: The new 132kV power line between the existing Lebowakgomo substation and the new Dithabaneng substation.
- **Section 2**: The new 132kV power line between the Dithabaneng substation and the new Dwaalkop substation.
- **Section 3**: The 132kV Loop-in-Loop-out (LiLo) line from the Middelpunt- Dithabaneng 132kV line to the proposed Boynton substation.

The ecological status report identified the following:
(Refer to the full Ecological Status Report in Appendix D1)

- The natural vegetation along the proposed corridors investigated are in a "poor to fair state" with impacts related to grazing, cultivation, erosion, mining and poor infra structure development.

Section 1*: The new 132kV power line between the existing Lebowakgomo substation and the new Dithabaneng substation.*

- From an ecological perspective, both alternatives are viable. The mountainous terrain to the north of the Lebowakgomo Hospital has steep slopes that will be prone to erosion. The natural vegetation just to the north of the hospital is encroached by Dichrostachys cinerea and Acacias shrubs with many exotic invasives present.
- The route for Alternative 1 is preferred. It follows the existing power line and this servitude can be used as an access road during construction. This will lower the need of clearing of natural vegetation during construction.
- Alternative 2 follows a route with few roads and is therefore not preferred. More clearing of natural vegetation, especially in the mountainous areas are needed. This can increase the possibility of erosion, especially after construction when maintenance of the corridor is not enforced.
- The low mountainous areas are prone to erosion, but the current access route must be used to lower the risk of erosion. All stream crossings must be treated as sensitive and existing roads must be used to lower the risk of erosion.
- Regular inspections by the Environmental Control Officer must be carried out and any erosion must be rehabilitated immediately.
- The route between the residential areas of Lebowakgomo and Legwang (south of the hospital) is modified, but a few large Sclerocarya birrea are present. Permits are needed for cutting or trimming.
- To the south of the residential areas, the route will cross a low hill (koppie). It is suggested that the crossing point must be near the foot of the outcrop, as this will lower any possible erosion impacts. It will further lower the need to cut many indigenous trees.
- The corridor is near the Tudumo/Chunies River and all pylons must be placed outside the 1:100 year flood line.
- Just to the north of the Seleteng substation the proposed corridor crosses another low outcrop. Clearing of trees are needed, but no red data species or protected trees were observed.
- **Alternative 1 is the preferred route for this section (from an ecological perspective).**

Section 2: The new 132kV power line between the Dithabaneng substation and the new Dwaalkop substation.

- Many impacts related to grazing, wood collection and general poor land use practices are present is this section of the proposed corridor.
- Alternative 1 near the road is preferred, as it allows for easier access during construction. The alternative further to the west (Alternative 2) will need the construction of more access roads and crossings of streams without proper bridges. The existing road has proper bridges, lowering the risk of impacts to the stream.
- **From an ecological perspective, Alternative 1 is preferred in this section**.

Section 3: The 132kV Loop-in-Loop-out (LiLo) line from the Middelpunt- Dithabaneng 132kV line to the proposed Boynton substation.

- The following protected tree species were seen on the site: Sclerocarya birrea.
- Although no Balanites maughamii, Philenoptera violacea and Combretum imberbe were observed during the survey, it must be confirmed.
- Although there are streams, in the broader area, the substation can be constructed to avoid these.
- A walk down study is needed to confirm the presence/absence of all protected trees once the final route is demarcated (pegged). The protected trees must be mapped (GPS) and applications for trimming, cutting and removal must be acquired before the clearing of the servitude can commence.
- In addition, the placement of pylons around all drainage lines, streams and rivers must be confirmed to ensure it is outside the 100m zone for drainage lines and streams and the 1;100 year flood line for larger rivers.

Summary

- Three red book data plant species is recorded for the site. The species listed all occur in habitats not present along the corridor. Habitat severely modified in most areas.
- Although some rare mammals can occur in the area (suitable habitat), no current records or activity on the properties affected.
- During the survey only very little dung of hare and some activity (tracks and burrows) of rodents were observed. Impacts lower the presence of large diversity and numbers.
- The streams, river and drainage lines must be considered as corridors for the limited migration of species. The power lines will not impact on these corridors and therefore will have no large scale effect on the species or area.
- All pylons must be placed at least 100m from small drainage lines or outside the 1:100 flood lines for larger rivers.
- With regard to biodiversity patterns, little if any impacts will occur.
    - The vegetation type occurs over a large area and the narrow corridor for the power line will have no large-scale negative impact on it.
    - No red data plant species observed - no impact. Limited habitat for the species listed (1/4° square) occur in the study area.
    - As stated, some drainage lines occur, but very limited impacts may occur. If activities are limited to the servitude as access roads, impacts will be very low (high confidence).
    - Alien plant infestations observed on the site and in the near vicinity. Clearing of soil can always lead to some infestations. The chance of that happening is high. It is suggested that the "maintenance plan" of the site must include regular inspections to ensure no alien or exotic plants establish itself on site.
    - Currently the landscape for the larger part of the study area is in a poor condition with a small area to the east of the Lebowakgomo substation in a fair condition. Historic and current land use is responsible for the modification to the natural vegetation and the habitat. Apart from roads and the existing power line, the other land-use impacts are grazing, houses and infra structure development, exotic vegetation, erosion and mining.
    - The activity (power line construction and substation) will have no real impact on biodiversity processes. The only possible impact can be oil or fuel spillages that can occur during construction or the installation and maintenance of the transformers. It is suggested that fuel and oil must not be stored on site during the construction phase and that containment dams or berms are constructed around transformers. In addition, a clear plan how to manage accidental spills must be included in the EMP for the site.
    - The impact on the system is low and this development will not have a negative impact on the region with regard to plants, plant communities and water courses.

2.2.2 Bird Impact Assessment

The Bird Impact Assessment indicated the following:
(Refer to the full Bird Impact Assessment Report in Appendix D3)

Section 1: The new 132kV power line between the existing Lebowakgomo substation and the new Dithabaneng substation.

The construction of the new proposed Lebowa-Dithabaneng 132kV line poses a limited threat to the birds occurring in the vicinity of the new infrastructure. The power line poses a **low** collision risk, mostly to non-Red Data species and a

medium electrocution risk, in particular to vultures. The habitat transformation will have a **low-medium** impact, and should only affect non-Red Data species at a local level, provided the large trees are not extensively destroyed. **Alternative 1** emerged as the first choice from a bird impact perspective.

Section 2: The new 132kV power line between the Dithabaneng substation and the new Dwaalkop substation.
The construction of the new proposed Dithabaneng-Dwaalkop 132kV line poses a limited threat to the birds occurring in the vicinity of the new infrastructure. The power line poses a **low** collision risk, mostly to non-Red Data species and a **medium** electrocution risk, in particular to vultures. The habitat transformation will have a **low** impact, and should only affect non-Red Data species at a local level, provided the large trees are not extensively destroyed. **Alternative 1** emerged as the first choice from a bird impact perspective.

Section 3: The 132kV Loop-in-Loop-out (LiLo) line from the Middelpunt- Dithabaneng 132kV line to the proposed Boynton substation.
The construction of the new proposed Loop-in Loop-out 132 kV lines from Middelpunt-Dithabaneng 132 kV power line to the proposed Boynton Substation will pose a limited threat to the birds occurring in the vicinity of the new infrastructure. The power line poses a **low** collision risk, mostly to non-Red Data species and a **medium** electrocution risk, in particular to vultures. The habitat transformation will have a **low** impact, and should only affect non-Red Data species at a local level, provided the large trees are not extensively destroyed. The proposed construction of the new substation should have a **low** habitat transformation impact, given the extent of habitat degradation already evident in the area.

RECOMMENDATIONS
- Power lines: The spans that cross major drainage lines and skirt dams should be marked with Bird Flight Diverters on the earth wire of the line, five metres apart, alternating black and white.
- Trees: The removal of large trees should be avoided as much as possible.
- Poles: The poles should be fitted with bird perches on top of the poles to draw birds, particularly vultures, away from the potentially risky insulators.

2.2.3 Heritage Impact Assessment

The main findings of the Heritage Impact Assessment are summarised as follows:-
(Refer to Appendix D2 of the BAR for the full report)
A **Phase I Heritage Impact Assessment (HIA) study** as required in terms of Section 38 of the National Heritage Resources Act (No 25 of 1999) was done.

The Phase I HIA study for the proposed Eskom Project revealed the presence of the following types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) in and near the Eskom Project Area, namely:
- The demolished village of Maneeng (next to Makurung village) holds at least eighty seven (87) graveyards and graves which are associated with a hundred and forty four (144) deceased individuals.
- A single grave occurs near Alternative 01 and Alternative 02 for the proposed new 132kV Lebowa Dithabaneng power line.

Approximately ten of the graveyards in the demolished village of Maneeng (No's 78-87) occur near the north-western corner of the village of Makurung where Alternative 01 for the proposed 132kV power line between the Dithabaneng Substation and the proposed Dwaalkop Substation power line will run. Alternative 02 for this power line runs across the demolished village of Maneeng where the majority of graveyards are located. All the graveyards in Maneeng have been geo-referenced and mapped and their coordinates are indicated in the Heritage Impact report.

All graveyards and graves can be considered to be of high significance and all graveyards and graves are protected by various laws. Legislation with regard to graveyards and graves includes the National Heritage Resources Act (No 25 of 1999) whenever graves are older than sixty years. The act also distinguishes various categories of graves and burial grounds.

The single grave (G01) next to the proposed 132kV power line between the Lebowa Substation and the Dithabaneg Substation is situated at a safe distance from Alternative 01 and Alternative 02 where it will not be affected by these two options. However, the construction of Alternative 02 for the proposed 132kV Dithabaneng Substation to the proposed Dwaalkop Substation may affect a number of graveyards if this alternative is used.

Mitigating the graveyards and grave
If any of the graveyards may be affected by the proposed Eskom Project the following mitigation measures have to be applied:

- If any graveyard is going to be affected directly (e.g. a pylon must be constructed on top of any graveyard) such a graveyard has to be exhumed and relocated. The exhumation of human remains and the relocation of graveyards are regulated by various laws, regulations and administrative procedures. This task is undertaken by forensic archaeologists or by reputed undertakers who are acquainted with the administrative procedures and relevant legislation that have to be adhered to whenever human remains are exhumed and relocated. This process also includes social consultation with a 60 days statutory notice period for graves older than sixty years. Permission for the exhumation and relocation of human remains have to be obtained from the descendants of the deceased (if known), the National Department of Health, the Provincial Department of Health, the Premier of the Province and the local police.

Recommendation

- Alternative 01 and Alternative 02 for the proposed 132kV power line between the Lebowa Substation and the Dithabaneng Substation are situated next to G01 which needs not to be affected by these alternatives. A 'safe' corridor of at least 20m must be maintained between the power line and the grave. The grave must be demarcated with a fence or with red cautionary tape and must be avoided by contractors when the power line is constructed. If a permanent fence is erected around the grave it must be fitted with a gate to ensure access to family members or friends who wished to visit the deceased.
- Alternative 01 is recommended for the proposed 132kV power line between the Dithabaneng Substation and the proposed Dwaalkop Substation as this alternative will not affect any of the graveyards in the demolished Maneeng village.
- If any heritage resources of significance is **exposed during construction** the South African Heritage Resources Authority (SAHRA) should be notified immediately, all development activities must be stopped and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notify in order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorisation (permits) from SAHRA to conduct the mitigation measures.

2.2.4 Palaeontological Impact Assessment

The main findings of the Palaeontological Impact Assessment are as follows:-
(Refer to Appendix D4 of the BAR for the full report)
The National Heritage Resources Act 25 of 1999 requires that all heritage resources, that is, all places or objects of aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance are protected. **Fossil heritage** of national and international significance is found within all provinces of the RSA. Heritage resources may not be excavated, damaged, destroyed or otherwise impacted by any development without prior assessment and without a permit from the relevant heritage resources authority.

Summary of findings
The geology is very complex with the Wonderkop fault (--f--) present to the east. Rock formations present fall within the Bushveld Complex and the Transvaal Supergroup. The Bushveld Complex is not known to yield any fossils. The Karoo Supergroup is completely absent and therefore the area has a palaeontological sensitivity of possibly LOW. Although the Karoo Supergroup is absent, the Pretoria Group, Time Ball Hill shale formation is known to contain 'algal microfossils' diagenetic in origin. Stromatolites are common in the Malmani dolomites, accepted to be the fossil remnants of the simplest single-celled organisms. The sensitivity value of these fossils, if any, are assumed to be LOW. There is evidence of mining activity past and present.

The impact of the development on fossil heritage is LOW and therefore no mitigation or conservation measures should be necessary.

Section 1: The proposed 132 kV power line between the existing Lebowakgomo and the new Dithabaneng substations close to the Tudumo/Chunies River on the farm Voorspoed 458. Alternative 1 is preferred.
Section 2: The proposed132kV power line between the new Dithabaneng and the new Dwaalkop substation, general poor land use practices are present on the farm Doornvlei 456. Alternative 1 is preferred.
Section 3: The 132 kV loop-in-loop-out line from Dithabaneng to the proposed Boynton substation. Protected trees and streams are present as well as old agricultural land on farm Mphatlele 457. The building of the Boynton substation is not opposed.
Malamani dolomite (Vmd) is to the north of the new substations and should not be affected by the new development.

Recommendation

- The following should be conserved: if any palaeontological material is exposed during digging, excavating, drilling or blasting and SAHRA must be notified. All development activities must be stopped and a palaeontologist should be called in to determine proper mitigation measures.

2.3 CONCLUSION

Alternative routes have been investigated for the project. From a heritage, ecological, bird as well as palaeontological impact viewpoint, Route Alternative 1 is preferred for Section 1 & Section 2 of the project. The final decision between Route 1 or 2 should be made on the accumulative weight of other parameters such as feedback from public participation, land tenure issues, construction costs, etc. **Currently, Alternative 1 is preferred** as the final route alignment due to the above investigations favouring alternative 1.
The **affected properties** for the **proposed Alternative 1** are on the farms Voorspoed 458 KS (Remainder), Rooiboklaagte 112 KS Ptn 0, Voorspoed 458 KS (Ptns 11, 15, 16, 23, 17, 9 and 4), Locatie van Mphahlele 457 KS (Remainder) in the Lepelle-Nkumpi Local Municipality in the Limpopo Province.

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

The areas where the alternatives for the proposed line are located do not contain any specific features that will make them critically different from the surrounding areas and from one another. The contents of Paragraph 3-13 below would therefore be the same for Alternatives 1 and 2.

3. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.
List alternative sites, if applicable.

Alternative: N/A	**Longitude (E):**		**Latitude (S):**	
Alternative S1[2] (preferred or only site alternative)	o	‘	o	‘
Alternative S2 (if any)	o	‘	o	‘

In the case of linear activities:

Alternative: Refer to tables below	**Longitude (E):**	**Latitude (S):**

For route alternatives that are longer than 500m, please provide co-ordinates taken every 250 meters along the route for each alternative alignment.

[2] “Alternative S..” refer to site alternatives.

Section 1: Lebowa Substation to Dithabaneng Substation

Lebowa Sub-station:

Longitude (Degrees Decimal Minutes)	Latitude (Degrees Decimal Minutes)
29° 27.838' E	24° 16.751' S

Dithabaneng Sub-station:

Longitude (Degrees Decimal Minutes)	Latitude (Degrees Decimal Minutes)
29° 33.803' E	24° 18.970' S

Proposed Alternative 1 Route (13.29 km):

250m intervals	Longitude (Degrees Decimal Minutes)	Latitude (Degrees Decimal Minutes)
1	29° 27.847' E	24° 16.733' S
2	29° 27.863' E	24° 16.602' S
3	29° 28.011' E	24° 16.602' S
4	29° 28.097' E	24° 16.690' S
5	29° 28.159' E	24° 16.812' S
6	29° 28.306' E	24° 16.812' S
7	29° 28.454' E	24° 16.813' S
8	29° 28.585' E	24° 16.849' S
9	29° 28.685' E	24° 16.948' S
10	29° 28.786' E	24° 17.047' S
11	29° 28.887' E	24° 17.146' S
12	29° 28.999' E	24° 17.221' S
13	29° 29.146' E	24° 17.220' S
14	29° 29.294' E	24° 17.219' S
15	29° 29.442' E	24° 17.218' S
16	29° 29.589' E	24° 17.217' S
17	29° 29.736' E	24° 17.212' S
18	29° 29.875' E	24° 17.165' S
19	29° 30.014' E	24° 17.118' S
20	29° 30.116' E	24° 17.189' S
21	29° 30.207' E	24° 17.295' S
22	29° 30.303' E	24° 17.397' S
23	29° 30.436' E	24° 17.439' S
24	29° 30.584' E	24° 17.441' S
25	29° 30.732' E	24° 17.442' S
26	29° 30.823' E	24° 17.543' S
27	29° 30.908' E	24° 17.653' S
28	29° 31.022' E	24° 17.692' S
29	29° 31.165' E	24° 17.657' S
30	29° 31.307' E	24° 17.622' S
31	29° 31.450' E	24° 17.587' S
32	29° 31.593' E	24° 17.553' S
33	29° 31.736' E	24° 17.518' S
34	29° 31.878' E	24° 17.483' S
35	29° 32.021' E	24° 17.448' S
36	29° 32.164' E	24° 17.413' S
37	29° 32.307' E	24° 17.378' S
38	29° 32.449' E	24° 17.343' S
39	29° 32.569' E	24° 17.407' S
40	29° 32.684' E	24° 17.493' S
41	29° 32.798' E	24° 17.579' S
42	29° 32.913' E	24° 17.664' S
43	29° 33.027' E	24° 17.750' S
44	29° 33.142' E	24° 17.835' S
45	29° 33.256' E	24° 17.921' S
46	29° 33.371' E	24° 18.006' S
47	29° 33.485' E	24° 18.092' S
48	29° 33.551' E	24° 18.207' S
49	29° 33.592' E	24° 18.337' S
50	29° 33.671' E	24° 18.450' S

51	29° 33.758' E	24° 18.560' S
52	29° 33.786' E	24° 18.689' S
53	29° 33.797' E	24° 18.824' S

Proposed Alternative 2 Route (12.59 km):

250m intervals	Longitude (Degrees Decimal Minutes)	Latitude (Degrees Decimal Minutes)
1	29° 27.862' E	24° 16.711' S
2	29° 27.904' E	24° 16.641' S
3	29° 28.016' E	24° 16.730' S
4	29° 28.128' E	24° 16.818' S
5	29° 28.253' E	24° 16.891' S
6	29° 28.379' E	24° 16.961' S
7	29° 28.505' E	24° 17.031' S
8	29° 28.632' E	24° 17.101' S
9	29° 28.758' E	24° 17.171' S
10	29° 28.884' E	24° 17.242' S
11	29° 29.022' E	24° 17.282' S
12	29° 29.168' E	24° 17.297' S
13	29° 29.315' E	24° 17.311' S
14	29° 29.462' E	24° 17.326' S
15	29° 29.609' E	24° 17.341' S
16	29° 29.756' E	24° 17.355' S
17	29° 29.903' E	24° 17.370' S
18	29° 30.050' E	24° 17.385' S
19	29° 30.196' E	24° 17.401' S
20	29° 30.309' E	24° 17.488' S
21	29° 30.442' E	24° 17.531' S
22	29° 30.589' E	24° 17.539' S
23	29° 30.736' E	24° 17.547' S
24	29° 30.884' E	24° 17.556' S
25	29° 31.032' E	24° 17.564' S
26	29° 31.179' E	24° 17.572' S
27	29° 31.326' E	24° 17.581' S
28	29° 31.474' E	24° 17.589' S
29	29° 31.621' E	24° 17.597' S
30	29° 31.769' E	24° 17.606' S
31	29° 31.916' E	24° 17.614' S
32	29° 32.051' E	24° 17.572' S
33	29° 32.180' E	24° 17.505' S
34	29° 32.309' E	24° 17.439' S
35	29° 32.437' E	24° 17.372' S
36	29° 32.556' E	24° 17.409' S
37	29° 32.670' E	24° 17.495' S
38	29° 32.784' E	24° 17.581' S
39	29° 32.898' E	24° 17.667' S
40	29° 33.013' E	24° 17.753' S
41	29° 33.127' E	24° 17.839' S
42	29° 33.241' E	24° 17.925' S
43	29° 33.355' E	24° 18.011' S
44	29° 33.469' E	24° 18.097' S
45	29° 33.536' E	24° 18.212' S
46	29° 33.579' E	24° 18.342' S
47	29° 33.657' E	24° 18.455' S
48	29° 33.744' E	24° 18.565' S
49	29° 33.770' E	24° 18.694' S
50	29° 33.777' E	24° 18.829' S

Section 2: Dithabaneng Substation to Dwaalkop Substation

Dithabaneng Sub-station:

Longitude (Degrees Decimal Minutes)	Latitude (Degrees Decimal Minutes)
29° 33.803' E	24° 18.970' S

Dwaalkop Sub-station:

Longitude (Degrees Decimal Minutes)	Latitude (Degrees Decimal Minutes)
29° 30.664' E	24° 21.597' S

Proposed Alternative 1 Route (8.67 km):

250m intervals	Longitude (Degrees Decimal Minutes)	Latitude (Degrees Decimal Minutes)
1	29° 33.768' E	24° 19.102' S
2	29° 33.733' E	24° 19.233' S
3	29° 33.699' E	24° 19.365' S
4	29° 33.664' E	24° 19.497' S
5	29° 33.629' E	24° 19.628' S
6	29° 33.595' E	24° 19.760' S
7	29° 33.484' E	24° 19.827' S
8	29° 33.343' E	24° 19.867' S
9	29° 33.202' E	24° 19.908' S
10	29° 33.061' E	24° 19.948' S
11	29° 32.920' E	24° 19.989' S
12	29° 32.779' E	24° 20.029' S
13	29° 32.638' E	24° 20.070' S
14	29° 32.497' E	24° 20.110' S
15	29° 32.368' E	24° 20.163' S
16	29° 32.314' E	24° 20.289' S
17	29° 32.259' E	24° 20.415' S
18	29° 32.205' E	24° 20.541' S
19	29° 32.150' E	24° 20.666' S
20	29° 32.095' E	24° 20.792' S
21	29° 32.057' E	24° 20.918' S
22	29° 32.113' E	24° 21.043' S
23	29° 32.169' E	24° 21.169' S
24	29° 32.205' E	24° 21.285' S
25	29° 32.061' E	24° 21.314' S
26	29° 31.916' E	24° 21.343' S
27	29° 31.772' E	24° 21.373' S
28	29° 31.628' E	24° 21.402' S
29	29° 31.483' E	24° 21.431' S
30	29° 31.339' E	24° 21.461' S
31	29° 31.195' E	24° 21.490' S
32	29° 31.050' E	24° 21.519' S
33	29° 30.906' E	24° 21.548' S
34	29° 30.762' E	24° 21.577' S
35	29° 30.664' E	24° 21.597' S

Proposed Alternative 2 Route (7.95 km):

250m intervals	Longitude (Degrees Decimal Minutes)	Latitude (Degrees Decimal Minutes)
1	29° 33.637' E	24° 18.981' S
2	29° 33.490' E	24° 18.986' S
3	29° 33.342' E	24° 18.992' S
4	29° 33.194' E	24° 18.998' S
5	29° 33.047' E	24° 19.003' S
6	29° 32.899' E	24° 19.009' S
7	29° 32.815' E	24° 19.097' S
8	29° 32.760' E	24° 19.223' S
9	29° 32.705' E	24° 19.349' S
10	29° 32.649' E	24° 19.474' S
11	29° 32.594' E	24° 19.600' S
12	29° 32.539' E	24° 19.725' S

13	29° 32.484' E	24° 19.851' S
14	29° 32.429' E	24° 19.977' S
15	29° 32.374' E	24° 20.102' S
16	29° 32.318' E	24° 20.228' S
17	29° 32.263' E	24° 20.354' S
18	29° 32.208' E	24° 20.479' S
19	29° 32.153' E	24° 20.605' S
20	29° 32.097' E	24° 20.730' S
21	29° 32.042' E	24° 20.856' S
22	29° 31.921' E	24° 20.929' S
23	29° 31.793' E	24° 20.997' S
24	29° 31.666' E	24° 21.065' S
25	29° 31.538' E	24° 21.133' S
26	29° 31.410' E	24° 21.201' S
27	29° 31.282' E	24° 21.269' S
28	29° 31.154' E	24° 21.337' S
29	29° 31.026' E	24° 21.405' S
30	29° 30.898' E	24° 21.473' S
31	29° 30.770' E	24° 21.541' S
32	29° 30.664' E	24° 21.597' S

Section 3: Boynton – Iilo line

Boynton Sub-station:

Longitude (Degrees Decimal Minutes)	Latitude (Degrees Decimal Minutes)
29° 35.959' E	24° 20.239' S

Proposed Alternative 1 Route (1.2 km):

250m intervals	Longitude (Degrees Decimal Minutes)	Latitude (Degrees Decimal Minutes)
1	29° 35.959' E	24° 20.239' S
2	29° 35.961' E	24° 20.121' S
3	29° 35.961' E	24° 19.850' S
4	29° 35.962' E	24° 19.715' S
5	29° 35.962' E	24° 19.579' S

4. PHYSICAL SIZE OF THE ACTIVITY

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

Alternative: N/A		**Size of the activity:**
Alternative A1[3] (preferred activity alternative)		m^2
Alternative A2 (if any)		m^2
Alternative A3 (if any)		m^2

or, for linear activities:

Alternative:		**Length of the activity:**
Section 1:		
Alternative 1 (preferred alternative)		13.29km
Alternative 2		12.59km
Section 2:		
Alternative 1 (preferred alternative)		8.67 km
Alternative 2		7.95km
Section 3:		
Alternative 1		1.2km

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

Alternative:		**Size of the site/servitude:**
Section 1:		
Alternative 1 (preferred alternative)		31m x 13 290m = 411 990m^2
Alternative 2		31m x 12 590m = 390 290m^2

[3] "Alternative A.." refer to activity, process, technology or other alternatives.

Section 2:		
Alternative 1 (preferred alternative)		31m x 8 670m = 268 770m^2
Alternative 2		31m x 7 950m = 246 450m^2
Section 3:		
Alternative 1		31m x 1 200m = 37 200m^2

5. SITE ACCESS

Does ready access to the site exist?	YES	NO
If NO, what is the distance over which a new access road will be built	m	
Describe the type of access road planned:		
No new access to the site is planned. During construction all vehicle movement must be along existing roads adjacent to the fences of the applicable properties. A temporary construction road could be cleared, should it be necessary, underneath the line to enable the construction activities. Should a temporary construction road be unavoidable, then an area of 8m will be cleared of major trees and bushes, 4m on either side of the proposed alignment of the lines.		

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

6. SITE OR ROUTE PLAN

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

The site or route plans must indicate the following:

6.1 the scale of the plan which must be at least a scale of 1:500;
6.2 the property boundaries and numbers of all the properties within 50 meters of the site;
6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
6.4 the exact position of each element of the application as well as any other structures on the site;
6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
6.6 all trees and shrubs taller than 1.8 meters;
6.7 walls and fencing including details of the height and construction material;
6.8 servitudes indicating the purpose of the servitude;
6.9 sensitive environmental elements within 100 meters of the site or sites including (but not limited thereto):
- rivers;
- the 1:100 year flood line (where available or where it is required by DWA);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or invested with alien species);

6.10 for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
6.11 the positions from where photographs of the site were taken.

7. SITE PHOTOGRAPHS

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

8. FACILITY ILLUSTRATION

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

9. ACTIVITY MOTIVATION

9(a) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	unknown	
What is the expected yearly income that will be generated by or as a result of the activity?	R 0	
Will the activity contribute to service infrastructure?	YES	NO
Is the activity a public amenity?	YES	NO
How many new employment opportunities will be created in the development phase of the activity?	unknown	
What is the expected value of the employment opportunities during the development phase?	unknown	
What percentage of this will accrue to previously disadvantaged individuals?	unknown	
How many permanent new employment opportunities will be created during the operational phase of the activity?	0	
What is the expected current value of the employment opportunities during the first 10 years?	R0	
What percentage of this will accrue to previously disadvantaged individuals?	0%	

9(b) Need and desirability of the activity

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

NEED:			
1.	Was the relevant provincial planning department involved in the application?	YES	NO
2.	Does the proposed land use fall within the relevant provincial planning framework?	YES	NO
3.	If the answer to questions 1 and / or 2 was NO, please provide further motivation / explanation:		
	There will be no change in the land use of the property. Eskom will register a servitude that provides Eskom with the rights to construct and maintain a power line.		

DESIRABILITY:			
1.	Does the proposed land use / development fit the surrounding area?	YES	NO
2.	Does the proposed land use / development conform to the relevant structure plans, SDF and planning visions for the area?	YES	NO
3.	Will the benefits of the proposed land use / development outweigh the negative impacts of it?	YES	NO
4.	If the answer to any of the questions 1-3 was NO, please provide further motivation / explanation:		
	Eskom will only register a servitude on the relevant properties and the land use will not change.		
5.	Will the proposed land use / development impact on the sense of place?	YES	NO
6.	Will the proposed land use / development set a precedent?	YES	NO
7.	Will any person's rights be affected by the proposed land use / development?	YES	NO
8.	Will the proposed land use / development compromise the "urban edge"?	YES	NO
9.	If the answer to any of the question 5-8 was YES, please provide further motivation / explanation.		
	The current land use of the surrounding areas is mostly residential, mining as well as agricultural. The construction of a power line might impact visually on the areas and impact on the sense of place, although the impact is considered to be insignificant due to the habitat degradation already evident in the area. Afforestation, overgrazing, and the indiscriminate land use activities dictate that the visual experience of the medium scale environment could be rated as low.		

BENEFITS:			
1.	Will the land use / development have any benefits for society in general?	YES	NO
2.	Explain:		
	This proposed project is part of planned infrastructure to supply the Eskom Distribution grid with power, and in addition to supply Boynton Mphahlele Mine/ Platmin Ltd. Should this application not be approved then the supply will be unreliable and in future this can result in major disturbances and disruptions of power supply to different areas at different times.		
3.	Will the land use / development have any benefits for the local communities where it will be located?	YES	NO
4.	Explain:		

	The project is designed to ensure firm supply to the broader area. Should this not be achievable then future supply will be unreliable and this can result in major power disturbances. The local communities will be adversely affected.

10. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

Title of legislation, policy or guideline:
The following legislation is applicable to the proposed project: **Legislation** National Environmental Management Act (Act No 107 of 1998) – NEMA EIA Regulations of 2010 Limpopo Environmental Management Act (7 of 2003), published 30 April 2004, Provincial Gazette No.997 National Heritage Resources Act, 1999 (Act No 25 of 1999) All provisions of the Occupational Health and Safety Act, 1993 (Act No 85 of 1993) All provisions of the National Water Act, 1998 (Act No 36 of 1998) National Environmental Management: Biodiversity Act, 2004 (Act No 10 of 2004) Minerals and Petroleum Resources Development Act, 2002 (Act No 28 of 2002) administered by Department of Minerals and Energy National Forests Act (Act No 84 of 1998) Protected species – provincial ordinances Conservation of Agricultural Resources Act (Act No 43 of 1983) National Veld and Forest Fire Act (Act No 101 of 1998) National Environment Management Waste Act, 2008 (Act No 59 of 2008) Soil Conservation Act, 1969 (Act No 76 of 1969)

11. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

11(a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?	YES	NO
If yes, what estimated quantity will be produced per month?	2,5m^3	
How will the construction solid waste be disposed of (describe)?		
Unusable waste, steel and aluminium will be sold to scrap dealers for recycling.		
Where will the construction solid waste be disposed of (describe)?		
The solid waste will be transported off site by the contractor and returned to Eskom Stores where the scrap will be handed over to buyers (scrap dealers). Mostly the waste is steel that is **recycled** and taken to the Eskom stores. Other waste is normally used cement bags and this is disposed of in the construction hole for the pylon. The bags will be mixed into the cement and used to fill the excavated hole of the pylon. Any **other waste that cannot be recycled** (this is minimal) will be transported to an appropriate landfill site licensed in terms of section 20 (b) of the National Environment Management Waste Act, 2008 (Act No 59 of 2008). The disposal of any construction waste will be the responsibility of the developer and should be done at least twice a week. A letter of agreement between the developer and the Permit Holder of the waste disposal site shall be provided to the DWA. These measures are included as requirements in the EMPr under the headings "Appointment of Contractors" and "Waste Mangement". Also refer to the other mitigation measures under the same headings.		
Will the activity produce solid waste during its operational phase?	YES	NO
If yes, what estimated quantity will be produced per month?	0m^3	
How will the solid waste be disposed of (describe)?		
N/A		
Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?		
N/A		

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.		
Can any part of the solid waste be classified as hazardous in terms of the relevant legislation?	YES	NO
If yes, inform the competent authority and request a change to an application for scoping and EIA.		
Is the activity that is being applied for a solid waste handling or treatment facility?	YES	NO
If yes, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.		

11(b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?			YES	NO
If yes, what estimated quantity will be produced per month?			m^3	
Will the activity produce any effluent that will be treated and/or disposed of on site?			YES	NO
If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.				
Will the activity produce effluent that will be treated and/or disposed of at another facility? According to the applicant and their contractors, accommodation for the construction workers is mostly rented in the nearest town. Sewage disposal will therefore be through the Municipality's main sewer line. Should *accommodation in a construction camp be unavoidable*, then the measures as stipulated in the EMPr must be adhered to. Included as requirement in the EMPr, under heading *"Waste Management" is the following:* The disposal of chemical toilets should be at a registered or licensed sewage disposal facility. Proof of agreement between the applicant and the sewage disposal facility for such disposal, confirming that there will be enough capacity to accommodate additional waste, should be submitted to the Department of Water Affairs.			YES	NO
If yes, provide the particulars of the facility:				
Facility name:				
Contact person:				
Postal address:				
Postal code:				
Telephone:		Cell:		
E-mail:		Fax:		
Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:				

11(c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere?	YES	NO
If yes, is it controlled by any legislation of any sphere of government?	YES	NO
If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.		
If no, describe the emissions in terms of type and concentration:		
No significant emissions are released. Studies undertaken on behalf of Eskom confirmed that calculations of electric and magnetic field levels created by overhead power lines, where the public may be exposed, are well within the ICNIRP guidelines. Note that ICNIRP refers to Non-ionising Radiation Protection which receives world-wide support and is endorsed by the Department of Health in South Africa.		

11(d) Generation of noise

Will the activity generate noise?	YES	NO
If yes, is it controlled by any legislation of any sphere of government?	YES	NO
If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.		
If no, describe the noise in terms of type and level:		

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

12. WATER USE

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

municipal	water board	groundwater	river, stream, dam or lake	other	the activity will not use water
If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate					
the volume that will be extracted per month:					litres
Does the activity require a water use permit from the Department of Water Affairs?					YES / NO
If yes, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this application if it has been submitted.					

Relevant to this project:

- The water used to supply the site with potable water is sourced/purchased from landowners in the area with pre-existing rights. The contractor should deliver the water to the site in an applicable water tanker. These requirements are included in the EMPr under the headings "*Construction site*" and "*Ground and Surface Water*".
- The water used during construction is minimal. The cement and ground are compacted in layers around the pylons using a small amount of water.
- According to the applicant and their contractors**,** dust suppression is not required due to the following reasons:
  - The servitude areas receive minimal bush clearance. Indigenous vegetation which does not interfere with the safe operation of the power line is left undisturbed. Further to the above, vegetation is not ploughed, but mowed and therefore no areas are left without vegetation cover.
  - In terms of access roads, existing roads are used and the impact to these roads is insignificant. The reason is that construction material is minimal (a pylon - planted approximately 330m apart, cement - to plant the pylon, and cable - for the overhead wires). Therefore a small number, of construction vehicles deliver the material to the site. Speed of above 30km/hour will not be exceeded. A limited/ insignificant amount of dust is therefore emitted in the atmosphere. In other words, there will be no significant construction, ground-clearing, leveling or grading of soils, moving or compacting of soils which are often associated with other forms of construction, but not with erecting of powerlines.

13. ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:
N/a
Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:
N/a

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

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

3. Has a specialist been consulted to assist with the completion of this section?	YES	NO
If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed: **Attached to the application form**		
All specialist reports must be contained in Appendix D.		

Property description/ physical address:	The **affected properties** for the **proposed Route Alternative 1** are on the farms Voorspoed 458 KS (Remainder), Rooiboklaagte 112 KS Ptn 0, Voorspoed 458 KS (Ptns 11, 15, 16, 23, 17, 9 and 4), Locatie van Mphahlele 457 KS (Remainder) in the Lepelle-Nkumpi Local Municipality in the Limpopo Province.		
	(Farm name, portion etc.) Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application.		
	In instances where there is more than one town or district involved, please attach a list of towns or districts to this application.		
Current land-use zoning:	Agricultural		
	In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to , to this application.		
Is a change of land-use application required?		YES	NO
Is a consent use application required?		YES	NO
Must a building plan be submitted to the local authority?		YES	NO
Locality map:	An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometers, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.) The map must indicate the following: • an indication of the project site position as well as the positions of the alternative sites, if any; • road access from all major roads in the area; • road names or numbers of all major roads as well as the roads that provide access to the site(s); • all roads within a 1km radius of the site or alternative sites; and • a north arrow; • a legend; and • locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection)		

Section B Copy No. A:	**Section 1: Alternative 1, Alternative 2**

Note: The area where the Alternative 1 route is located does not contain any specific features that will make the site critically more different than the Alternative 2 sites. Paragraphs 1 - 6 below are therefore exactly the same for all alternatives.

Section 1: Lebowa - Dithabaneng

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative Route 1:

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

Alternative Route 2:

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

2. LOCATION IN LANDSCAPE

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

2.1 Ridgeline
2.2 Plateau
2.3 Side slope of hill/mountain – A1 & A2
2.4 Closed valley
2.5 Open valley
2.6 Plain
2.7 Undulating plain – A1 & A2
2.8 Dune
2.9 Seafront
2.10 Escarpment

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

	Alternative 1		**Alternative 2**	
Shallow water table (less than 1.5m deep)	YES	NO	YES	NO
Dolomite, sinkhole or doline areas	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil[3.1]	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO	YES	NO
Any other unstable soil or geological feature	YES	NO	YES	NO
An area sensitive to erosion[3.2]	YES	NO	YES	NO

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

Notes to Superscripts where answers to above are 'Yes'
3.1. Only where routes cross the low mountain north of Lebowakgomo
3.2. Most of the soils are susceptible to erosion – all exposed soils

4. GROUNDCOVER

Indicate the types of groundcover present on the site:

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

Alternative Route 1

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

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

Alternative Route 2

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

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

5. LAND USE CHARACTER OF SURROUNDING AREA

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

5.1 Natural area - A1 and A2
5.2 Low density residential - A1 and A2
5.3 Medium density residential – A1 and A2
5.4 High density residential
5.5 Informal residential[A]
5.6 Retail commercial & warehousing
5.7 Light industrial – A1 and A2
5.8 Medium industrial [AN]
5.9 Heavy industrial [AN]
5.10 Power station
5.11 Office/consulting room – A1 and A2
5.12 Military or police base/station/compound – A1 and A2
5.13 Spoil heap or slimes dam[A]
5.14 Quarry, sand or borrow pit – A1 and A2
5.15 Dam or reservoir - A1 and A2 (Municipal concrete structures)
5.16 Hospital/medical centre – A1 and A2
5.17 School - A1 & A2
5.18 Tertiary education facility
5.19 Church – A1 and A2
5.20 Old age home
5.21 Sewage treatment plant[A]
5.22 Train station or shunting yard [N]
5.23 Railway line [N]
5.24 Major road (4 lanes or more) [N]
5.25 Airport [N]
5.26 Harbour
5.27 Sport facilities – A1 and A2
5.28 Golf course
5.29 Polo fields
5.30 Filling station[H]
5.31 Landfill or waste treatment site

5.32 Plantation
5.33 Agriculture - A1 and A2
5.34 River, stream or wetland - A1 and A2
5.35 Nature conservation area
5.36 Mountain, koppie or ridge - A1 and A2
5.37 Museum
5.38 Historical building
5.39 Protected Area
5.40 Graveyard – A1 and A2
5.41 Archaeological site
5.42 Other land uses (describe)

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

N/A

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

If YES, specify and explain: N/A		
If YES, specify: N/A		

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity.

If YES, specify and explain: N/A
If YES, specify: N/A

6. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including	YES	NO
Archaeological or palaeontological sites, on or close (within 20m) to the site?	Uncertain	
If YES, explain: Refer to Palaeontological Assessment in Appendix D4.		
If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site.		
Briefly explain the findings of the specialist: Refer to the Heritage Impact Assessment in Appendix D2. Summary below.		
Will any building or structure older than 60 years be affected in any way?	YES	NO
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES	NO

If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.

The main findings of the Heritage Impact Assessment are summarised as follows:-

Section1:

The Phase I HIA study for the proposed Eskom Project revealed the presence of the following types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) in and near the Eskom Project Area, namely:

- A single grave occurs near Alternative 1 and Alternative 2 for the proposed new 132kV Lebowa-Dithabaneng power line.
- The single grave (G01) next to the proposed 132kV power line between the Lebowa Substation and the Dithabaneng Substation is situated at a safe distance from Alternative 1 and Alternative 2 where it will not be affected by these two options.

Mitigating the graveyards and grave

If any of the graveyards may be affected by the proposed Eskom Project the following mitigation measures have to be applied:

- If any graveyard is going to be affected directly (e.g. a pylon must be constructed on top of any graveyard) such a graveyard has to be exhumed and relocated. The exhumation of human remains and the relocation of graveyards

are regulated by various laws, regulations and administrative procedures. This task is undertaken by forensic archaeologists or by reputed undertakers who are acquainted with the administrative procedures and relevant legislation that have to be adhered to whenever human remains are exhumed and relocated. This process also includes social consultation with a 60 days statutory notice period for graves older than sixty years. Permission for the exhumation and relocation of human remains have to be obtained from the descendants of the deceased (if known), the National Department of Health, the Provincial Department of Health, the Premier of the Province and the local police.

Recommendation

- Alternative 1 and Alternative 2 for the proposed 132kV power line between the Lebowa Substation and the Dithabaneng Substation are situated next to G01 which needs not to be affected by these alternatives. A 'safe' corridor of at least 20m must be maintained between the power line and the grave. The grave must be demarcated with a fence or with red cautionary tape and must be avoided by contractors when the power line is constructed. If a permanent fence is erected around the grave it must be fitted with a gate to ensure access to family members or friends who wished to visit the deceased.
- If any heritage resources of significance is **exposed during construction** the South African Heritage Resources Authority (SAHRA) should be notified immediately, all development activities must be stopped and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notify in order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorisation (permits) from SAHRA to conduct the mitigation measures.

Section B Copy No. B:	**Section 2: Alternative 1, Alternative 2**

Note: The area where the Alternative 1 route is located does not contain any specific features that will make the site critically more different than the Alternative 2 sites. Paragraphs 1 - 6 below are therefore exactly the same for all alternatives.

Section 2: Dithabaneng - Dwaalkop

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative Route 1:

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

Alternative Route 2:

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

2. LOCATION IN LANDSCAPE

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

2.1 Ridgeline
2.2 Plateau
2.3 Side slope of hill/mountain
2.4 Closed valley
2.5 Open valley
2.6 Plain
2.7 Undulating plain – A1 & A2
2.8 Dune
2.9 Seafront
2.10 Escarpment

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

	Alternative 1		Alternative 2	
Shallow water table (less than 1.5m deep)	YES	NO	YES	NO
Dolomite, sinkhole or doline areas	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO	YES	NO
Any other unstable soil or geological feature	YES	NO	YES	NO
An area sensitive to erosion[3.1]	YES	NO	YES	NO

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

Notes to Superscripts where answers to above are 'Yes'
3.1. Most of the soils are susceptible to erosion – all exposed soils

4. GROUNDCOVER

Indicate the types of groundcover present on the site:

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

Alternative Route 1

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

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

Alternative Route 2

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

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

5. LAND USE CHARACTER OF SURROUNDING AREA

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

5.1 Natural area - A1 and A2
5.2 Low density residential - A1 and A2
5.3 Medium density residential – A1 and A2
5.4 High density residential
5.5 Informal residential[A]
5.6 Retail commercial & warehousing
5.7 Light industrial
5.8 Medium industrial [AN]
5.9 Heavy industrial [AN]
5.10 Power station

5.11 Office/consulting room
5.12 Military or police base/station/compound
5.13 Spoil heap or slimes dam[A]
5.14 Quarry, sand or borrow pit – A1 and A2
5.15 Dam or reservoir
5.16 Hospital/medical centre
5.17 School
5.18 Tertiary education facility
5.19 Church
5.20 Old age home
5.21 Sewage treatment plant[A]
5.22 Train station or shunting yard [N]
5.23 Railway line [N]
5.24 Major road (4 lanes or more) [N]
5.25 Airport [N]
5.26 Harbour
5.27 Sport facilities
5.28 Golf course
5.29 Polo fields
5.30 Filling station[H]
5.31 Landfill or waste treatment site
5.32 Plantation
5.33 Agriculture - A1 and A2
5.34 River, stream or wetland - A1 and A2
5.35 Nature conservation area
5.36 Mountain, koppie or ridge
5.37 Museum
5.38 Historical building
5.39 Protected Area
5.40 Graveyard – A1 and A2
5.41 Archaeological site
5.42 Other land uses (describe)

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

N/A

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

If YES, specify and explain: N/A		
If YES, specify: N/A		

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

If YES, specify and explain: N/A
If YES, specify: N/A

6. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including	YES	NO
Archaeological or palaeontological sites, on or close (within 20m) to the site?	Uncertain	
If YES, explain: No Palaeontological sites. Refer to assessment in Appendix D4.		
If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site.		
Briefly explain the findings of the specialist: Refer to the Heritage Impact Assessment in Appendix D2. Summary below.		
Will any building or structure older than 60 years be affected in any way?	YES	NO
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES	NO

If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.

The main findings of the Heritage Impact Assessment are summarised as follows:-

The Phase I HIA study for the proposed Eskom Project revealed the presence of the following types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) in and near Section 2 of the project area, namely:

- The demolished village of Maneeng (next to Makurung village) holds at least eighty seven (87) graveyards and graves which are associated with a hundred and forty four (144) deceased individuals.
- Approximately ten of the graveyards in the demolished village of Maneeng (No's 78-87) occur near the north-western corner of the village of Makurung where Alternative 1 for the proposed 132kV power line between the Dithabaneng Substation and the proposed Dwaalkop Substation power line will run. Alternative 2 for this power line runs across the demolished village of Maneeng where the majority of graveyards are located. All the graveyards in Maneeng have been geo-referenced and mapped and their coordinates are indicated in the Heritage Impact report.
- The construction of Alternative 2 for the proposed 132kV Dithabaneng Substation to the proposed Dwaalkop Substation may affect a number of graveyards if this alternative is used.

All graveyards and graves can be considered to be of high significance and all graveyards and graves are protected by various laws. Legislation with regard to graveyards and graves includes the National Heritage Resources Act (No 25 of 1999) whenever graves are older than sixty years. The act also distinguishes various categories of graves and burial grounds.

Mitigating the graveyards and grave

If any of the graveyards may be affected by the proposed Eskom Project the following mitigation measures have to be applied:

- If any graveyard is going to be affected directly (e.g. a pylon must be constructed on top of any graveyard) such a graveyard has to be exhumed and relocated. The exhumation of human remains and the relocation of graveyards are regulated by various laws, regulations and administrative procedures. This task is undertaken by forensic archaeologists or by reputed undertakers who are acquainted with the administrative procedures and relevant legislation that have to be adhered to whenever human remains are exhumed and relocated. This process also includes social consultation with a 60 days statutory notice period for graves older than sixty years. Permission for the exhumation and relocation of human remains have to be obtained from the descendants of the deceased (if known), the National Department of Health, the Provincial Department of Health, the Premier of the Province and the local police.

Recommendation

- Alternative 1 is recommended for the proposed 132kV power line between the Dithabaneng Substation and the proposed Dwaalkop Substation as this alternative will not affect any of the graveyards in the demolished Maneeng village.
- If any heritage resources of significance is **exposed during construction** the South African Heritage Resources Authority (SAHRA) should be notified immediately, all development activities must be stopped and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notify in order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorisation (permits) from SAHRA to conduct the mitigation measures.

Section B Copy No. C:	**Section 3: Alternative 1**

Section 3: LiLo line to the Boynton substation

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.
Alternative Route 1:

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

2. LOCATION IN LANDSCAPE

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

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

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

	Alternative 1	
Shallow water table (less than 1.5m deep)	YES	NO
Dolomite, sinkhole or doline areas	YES	NO
Seasonally wet soils (often close to water bodies)	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO
Any other unstable soil or geological feature	YES	NO
An area sensitive to erosion[3.1]	YES	NO

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

Notes to Superscripts where answers to above are 'Yes'
3.1. Area devoid of natural vegetation has shown to be erodible – many examples around the study site.

4. GROUNDCOVER

Indicate the types of groundcover present on the site:

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

Alternative Route 1

Natural veld - good	Natural veld with	Natural veld with heavy alien	Veld dominated by alien	Gardens

condition[E]	scattered aliens[E]	infestation[E]	species[E]	
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

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

5. LAND USE CHARACTER OF SURROUNDING AREA

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

5.1 Natural area
5.2 Low density residential
5.3 Medium density residential
5.4 High density residential
5.5 Informal residential[A]
5.6 Retail commercial & warehousing
5.7 Light industrial
5.8 Medium industrial [AN]
5.9 Heavy industrial [AN]
5.10 Power station
5.11 Office/consulting room
5.12 Military or police base/station/compound
5.13 Spoil heap or slimes dam[A]
5.14 Quarry, sand or borrow pit
5.15 Dam or reservoir
5.16 Hospital/medical centre
5.17 School
5.18 Tertiary education facility
5.19 Church
5.20 Old age home
5.21 Sewage treatment plant[A]
5.22 Train station or shunting yard [N]
5.23 Railway line [N]
5.24 Major road (4 lanes or more) [N]
5.25 Airport [N]
5.26 Harbour
5.27 Sport facilities
5.28 Golf course
5.29 Polo fields
5.30 Filling station[H]
5.31 Landfill or waste treatment site
5.32 Plantation
5.33 Agriculture
5.34 River, stream or wetland
5.35 Nature conservation area
5.36 Mountain, koppie or ridge
5.37 Museum
5.38 Historical building
5.39 Protected Area
5.40 Graveyard
5.41 Archaeological site
5.42 Other land uses (describe)

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

N/A

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

If YES, specify and explain: N/A		
If YES, specify: N/A		

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity.

If YES, specify and explain: N/A
If YES, specify: N/A

6. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including	YES	NO
Archaeological or palaeontological sites, on or close (within 20m) to the site?	Uncertain	
If YES, explain:		
If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site.		
Briefly explain the findings of the specialist:	Refer to the Heritage Impact Assessment in Appendix D2. Summary below.	
Will any building or structure older than 60 years be affected in any way?	YES	NO
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES	NO

If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.

The main findings of the Heritage Impact Assessment are summarised as follows:-

The Phase I Heritage Impact Assesment for the Eskom Project revealed none of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) for Section 3 of the Eskom Project Area.

Therefore, from a heritage point of view, the Boynton lilo line and the Boynton substation are suitable for construction.

The following measures are proposed to mitigate/manage any possible impact of the project on heritage resources:

If any heritage resources of significance are exposed during the Eskom Project the South African Heritage Resources Authority (SAHRA) should be notified immediately, all development activities must be stopped and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notified in order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorisation (permits) from SAHRA to conduct the mitigation measures.

SECTION C: PUBLIC PARTICIPATION

1 Project initiation

1.1 Submission of Application form

An Application form (Appendix E2) was submitted to the Department of Environmental Affairs (DEA) on 1 March 2012. DEA acknowledged receipt and acceptance of this application on 12 March 2012 and issued the DEA Ref 14/12/16/3/3/1/497 and NEAS Ref DEA/EIA/0001056/2012. (Appendix E3).

1.2 Identification of Interested and Affected Parties

- The PPP for the project was initiated with the development of a comprehensive IAP database. Authorities are key interested and affected parties in each application. The list of IAPs was updated on a regular basis during the course of the project as additional IAPs were identified. Refer to Appendix E4: Register of Interested and Affected Parties.
    - Department of Water Affairs: Water Resources & Water Quality Management
    - South African Heritage Resources Agency
    - Limpopo Heritage Resource Authority
    - Limpopo Department of Economic Development, Environment and Tourism: Environmental Impact Management
    - Department of Agriculture, Forestry and Fisheries: Land Use and Soil Management
    - Department of Minerals and Energy
    - Department of Cooperative Governance, Human Settlement and Traditional Affairs
    - SA National Road Agency Ltd.: Northern Region
    - Road Agency Limpopo
    - Department of Roads and Transport
    - Department of Rural Development and Land Reform: Land Claims Commissioner
    - Department of Rural Development and Land Reform: State Land Administration
    - Endangered Wildlife Trust
    - Platmin Limited
    - Minmetals First Chrome Mining Co (Pty) Ltd
    - SRK Consulting
    - Capricorn District Municipality
    - Lepelle-Nkumpi Local Municipality
    - Eskom Transmission
    - Eskom Distribution Northern Region
    - Ledwaba Traditional Authority
    - Mphahlele Traditional Authority
    - Landowners

2 Public notification

A consultation process was undertaken with intent of informing key community stakeholders, comprising any Tribal Authorities, the Municipal structures and the local communities (directly affected people) about the proposed development and the Basic Assessment process underway.
Public participation plays an important role in the compilation of environmental reports as well as the planning, design, and ultimately the implementation of the project. Public participation is a process leading to informed decision-making, through joint effort by the proponent, technical experts, governmental authorities, and systematically identified IAPs.

2.1 Public Notice (Poster)

A2 laminated on-site notices/posters informing IAPs of the application were placed at key points on 26 April 2012. These posters, in English and Northern-Sotho, were placed, at the following locations:
(Refer to Appendix E6: Proof of site notices)

- At the entrance to the offices of the Mphahlele Tribal Authority
- At the entrance to the offices of the Ledwaba Tribal Authority

2.2 Background Information Document

A Background Information Document (BID) was compiled, which provided a description of the proposed project and information on the BA process to be followed. The purpose of this document was to inform all IAPs about the project and afford them an opportunity to comment.
Copies of the BID were emailed to the relevant authorities, affected Tribal Authorities and relevant organisations on 23 March 2012 with due date for comment by 2 May 2012. Copies of the notification letters to IAPs are included at Appendix E7.

2.3 Advertisements

In fulfilment of the EIA Regulations, G.N. R543 Section 54, advertisements (Appendix E8) were placed in the following newspapers:

- Capricorn Voice on 28 March 2012 to notify of the proposed project.
- Capricorn Voice on 14 November 2012 to advertise the availability of the draft BAR.

Refer to Appendix E8: Proof of newspaper ad.
(Proof of placement in newspaper of 14 November 2012 was not available at the time of publishing of the draft BAR)

2.4 Landowner notification

Eskom relies on the goodwill of landowners and interested and affected parties to obtain rights of way, or servitudes for power lines. Hence, the landowners throughout the project area play an important roll in assisting with the identification of potential powerline corridors and substation site locations. Traditional Authorities, should also be consulted as they are of the landowners within the project area. In all communities affected there is already a functioning tribal system, which is successfully used for informing community members and to obtain feedback from them. Information received from the Department of Rural Development and Land Reform as well as the Regional Land Claims Commisioner indicated the relevant traditional authorities. The traditional authorities that have been consulted and perceived to have been affected (taking into account all alternative route corridors) throughout the study area are as follows:

- Mphahlele Traditional Authority
- Ledwaba Traditional Authority
- Tau Mankotsane Traditional Authority

The traditional authorities received notification letters by hand on 26 April 2012.

Contact details of all other landowners impacted by the project were obtained using Windeed or by investigation by foot of the power line route corridors. With the assistance of the Lepelle-Nkumpi Local Municipality, 35 homeowners were identified to be within the broader corridor of the powerline route. The affected properties are on the farm Voorspoed 458KS, Portions 11,15,16,17,9. On 27 August 2012 and 5 September 2012 these landowners/homeowners were visited, accompanied by the Lepelle-Nkumpi Local Municipality, and notified of the project. Letters with project information were hand delivered and comments were requested. Comment forms were signed by these landowners. (Refer to Appendix E11 for the completed comment forms). Of the 35 houses visited, 18 were unoccupied. Letters of notification were left at these premises/structures and/or handed to neighbours for delivery.

3 Meetings and site visits

3.1 Public meeting/ open day and site visit

- **N**otification of an information meeting/ open day was sent to all IAPs on 20 April 2012. The open day was conducted on 16 May 2012 at the Pietersburg Golf Club, Polokwane. The purpose of the meeting was to furnish all interested parties with information regarding the extent of the project, the proposed alternatives, the process of negotiations for servitudes, and the extent of the Environmental Impact Assessment Process. Project posters with information and maps of the routes were presented at the open day. Written comment was requested at the information meeting. The information meeting was conducted in the format of an open day with an invitation for attendance between 11h00 to 12h00 and a site visit for key stakeholders from 12h00 to 13h00. None of these key

stakeholders, i.e. Department of Water Affairs, Department of Economic Development, Environment and Tourism and Capricorn District Municipality could attend the open day. The Lepelle-Nkumpi Local Municipality attended the site visit. No comment was received at the open day.
(Refer to Appendix E9 for the attendance register and Appendix E10 for the request for comment form that was provided at the meeting).

3.2 Focus group meetings / One-on-one meetings

Key stakeholders were identified at the beginning of the PPP, these included: Traditional Authorities; key stakeholders, commenting authorities and landowners. One-on-one meetings were conducted with all landowners to assist in the identification of potential powerline corridors. (refer to Appendix E5 for the register of landowners).

3.2.1 Traditional Authorities

Meetings were conducted with the identified Traditional Authorities to obtain their requirements and comments.

3.2.1.1 Mphahlele Traditional Authority

Meetings were held with the Mphahlele Traditional Authority on the following dates:
- 7 June 2012 (Meeting to introduce project)
- 20 July 2012 (Formal introduction meeting)
- 25 September 2012 (Meeting to arrange Public Participation meeting)
- 12 October 2012 (Public Participation meeting – Attendance register attached in Appendix E9).

3.2.1.2 Ledwaba Traditional Authority

Meetings were held with the Ledwaba Traditional Authority on the following dates:
- 26 April 2012 (Meeting to introduce project and to arrange public participation meeting)
- 19 June 2012 (Public Participation meeting – Attendance register attached in Appendix E9).

3.2.1.3 Tau Mankotsane Traditional Authority

Meetings were held with the Tau Mankotsane Traditional Authority on the following dates:
- 26 April 2012 (Meeting to introduce project and to arrange public participation meeting)
- 27 June 2012 (Public Participation meeting – Attendance register attached in Appendix E9).

4 Comments received

The Public Participation Programme allowed for informed and responsible decision-making by all interested and affected parties. A summary of IAP comments and the consultants' responses to these comments is provided below. The original IAP comments are included in Appendix E11.

List of authorities from whom comments have been received:
- Department of Water Affairs
- Lepelle-Nkumpi Local Municipality, Community Services
- South African National Road Agency SOC Limited
- Limpopo Department of Economic Development, Environment and Tourism: Environmental Impact Management, Capricorn District
- Department of Rural Development and Land Reform: Land Reform Office
- Department of Rural Development and Land Reform: Land Claims Commissioner
- Mphahlele Traditional Authority

4.1 Comments received in the notification phase

This section of the report synthesises the issues and concerns identified by interested and affected parties and various stakeholders during the public participation process and can be summarised as follows:

4.1.1 Verbal Comment received

At the Public Participation meeting on 12 October 2012 at the Mphahlele Traditional Authority the following comments were received:

- Mr. Mazwi requested information on the location of the portions of the farm Voorspoed. *Response: It was indicated to him on the plan.*
- Mr Ngwana Mosadi enquired if the contractor will be introduced to the community. *Response: He was assured of this.*
- Mr DI Mphahlele requested an explanation of the difference between overhead and underground power lines. He confirmed his support for the upgrading of the power network in their area. *Response: Explanation provided.*
- Mr PA Mphahlele requested the existing power line to his house to go overhead and not underground. *Response: This is not within the scope of this EIA and he should take it up with the Municipality.*
- Pebetse Ntabiseng (Mphahlele Traditional Authority) asked if the Municipality will be informed re the project. *Response: The Municipality is a registered IAP.*
- Philani Mphahlele asked if 3 phase is stronger than single phase. *Response: No.*
- Maphadi Matabata commented that the project is welcomed. *Response: Noted.*
- General: The community is positive towards the project and commented that they welcome the development.

(Refer to the Attendance Register attached in Appendix E9)

4.1.2 Written Comment received

(The original IAP comments are included in Appendix E11)

Department of Water Affairs
23 March 2012
Comment:
Registered as IAP. Relevant official is indicated.
Response:
Noted.

Lepelle-Nkumpi Local Municipality
11 April 2012
Comment:
Community Services registered as IAP.
Response:
Noted.

South African National Road Agency SOC Ltd
20 April 2012
Comment:
No SANRAL routes appear to be affected. The nearest SANRAL route is the R37, which is not affected. SANRAL requested not to be registered as an IAP and will not attend the open day.
Response:
Noted.

Lepelle Nkumpi Local Municipality, Community Services
23 April 2012
Comment:

They raised concern about the venue chosen for the briefing. They are of the opinion that it will disadvantage those affected parties who cannot travel this far. They requested the venue to be changed to accommodate all that are interested and affected.
23 April 2012
Response:
This public participation meeting was only intended for key stakeholders - mostly all of them are situated in Polokwane. The affected landowners are all seen individually and in focus groups to attend to their specific requirements. The aim of this meeting was to accommodate the government departments etc who might want to attend the information meeting. Not all of them would want to go on the site visit. For that reason it is better to have the meeting in Polokwane. Otherwise all of them had to drive to Lebowakgomo just for the meeting. The venue was specifically chosen to accommodate the majority of key stakeholders.
25 April 2012
Comment:
The Municipality replied that the response by the EAP is noted.

Department of Economic Development, Environment & Tourism, Capricorn District
11 May 2012
Comment:
Not able to attend the public participation day.
Response:
Noted.

Department of Rural Development and Land Reform, Land Reform Office, Limpopo
7 June 2012
Comment:
The department stated the farms that are state land allocated to certain tribal authorities. In addition, the procedures to be followed with regards to consultation with these tribal authorities are stipulated.
Response:
Noted. During the course of the EIA, all affected landowners and land rights holders are identified and consulted with regarding the proposed projects. A negotiator has also been appointed by the applicant to consult with land rights holders and to conduct resolution meetings. Further negotiations are taking place to confirm the details for the acquisition of the servitudes and compensation.

Department of Rural Development and Land Reform, Land Claims Commissioner, Limpopo
19 June 2012
Comment:
Regional Land Claims Commissioner stated that the Mphahlele Tribe lodged land claims against the farm Voorspoed 458 KS.
Response:
Refer to response above. The Mphahlele Traditional Authority was consulted at various occasions i.e. 7 June, 20 July, 25 September, 12 October 2012. In addition refer to 5.1.1 for feedback received at a public participation meeting with the Mphahlele Traditional Authority.

Mphahlele Traditional Authority
1 August 2012
Comment:
The Mphahlele Traditional Council has no objection to the project and confirms their support.
Response:
Noted.

Homeowners on Voorspoed 458KS, Portions 11,15,16,17,9
On 27 August 2012 and 5 September 2012 these landowners/homeowners were visited, accompanied by the Lepelle-Nkumpi Local Municipality, and notified of the project. Letters with project information were hand delivered and comments were requested. Comment forms were signed by these landowners. (Refer to Appendix E11 for the

completed comment forms). Of the 35 houses visited, 18 were unoccupied. Letters of notification were left at these premises/structures and/or handed to neighbours for delivery.
Comment:
The homeowners are in support of the project and their comment can be summarised as follow:

- Mapula Malatji: In agreement/support. They will be in contact should a problem occur.
- M.P. Ramobike: Do not foresee as problem, will inform the senior pastor.
- Abram Maruma: As long as this process will not affect their electric equipment.
- Mr J.T. Mokoena: Welcomes the development.
- P.K.H. Mashengoaneng: He understood that the supply of power will in future be firm. He requested all trees next to the project be removed and that a "no-dumping" sign be erected. They request pavers from the tar road to the project gate.
- C Shirley Maimele: Welcomes the project.

4.1.2 Written Comment received at the open day

No comment was received at the open day.

5 Distribution of Draft Basic Assessment Report for comment

Copies of the Draft Basic Assessment Report (BAR), inclusive of the executive summary, will be distributed to the following relevant authorities and key IAPs for review and comment:

- Department of Water Affairs: Water Resources & Water Quality Management
- South African Heritage Resources Agency
- Limpopo Heritage Resource Authority
- Limpopo Department of Economic Development, Environment and Tourism: Environmental Impact Management
- Department of Agriculture, Forestry and Fisheries: Land Use and Soil Management
- Department of Minerals and Energy
- Department of Cooperative Governance, Human Settlement and Traditional Affairs
- SA National Road Agency Ltd.: Northern Region
- Road Agency Limpopo
- Department of Roads and Transport
- Department of Rural Development and Land Reform: Land Claims Commissioner
- Department of Rural Development and Land Reform: State Land Administration
- Endangered Wildlife Trust
- Platmin Limited
- Minmetals First Chrome Mining Co (Pty) Ltd
- SRK Consulting
- Capricorn District Municipality
- Lepelle-Nkumpi Local Municipality
- Eskom Transmission
- Eskom Distribution Northern Region
- Ledwaba Traditional Authority
- Mphahlele Traditional Authority
- Landowners

6 Conclusion of Public Participation Programme for the Basic Assessment Report

- The first phase **Public Participation Programme** (PPP) started in March 2012 and continued until November 2012. It included the identification of key stakeholders, the **distribution of information letters** with a request for comment, as well as **advertising of the project in the local press and on site**.
- **Meetings** were conducted with the relevant Tribal Authorites, and **one-on-one meetings** with **affected landowners** to address their specific requirements.
- In addition, notification of an open day/**information meeting** on 16 May 2011 was sent to key stakeholders. The purpose of the meeting was to furnish interested parties with information regarding the extent of the project, the proposed alternatives, the process of negotiations for servitudes, and the extent of the Environmental Impact

Assessment Process. Project posters with information and maps of the routes were presented at the meeting. Written comment was requested at the meeting.

- A draft Basic Assessment Report - this document- was compiled with the main aim to identify issues, potential impacts and potential alternatives associated with this project. It included a description of the status quo of all relevant environmental components as well as the proceedings of the PPP and communication with registered Interested & Affected Parties (IAPs).
- The **draft Basic Assessment Report was distributed on 12 November 2012** with a due date for comment by **15 January 2013**.
- Subsequently, a **final Basic Assessment Report** (BAR) will be compiled **and submitted to DEA.** This report will include all concerns raised to the draft BAR and responses thereto. The Consultants (EAPs) will ensure that all concerns raised are addressed in appropriate detail in the final Basic Assessment Report.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

- Currently the project receives full support from the affected landowners and tribal authorities.
- No issues were raised during the notification phase of this project.

Response from the practitioner to the issues raised by the interested and affected parties (A full response is provided in the Comments and Response Report that is attached to this report as Appendix E1):

2. 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

2.1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN PHASE

The potential impacts that are likely to occur as a result of the planning and design phase are described below. In addition the mitigation measures that may eliminate or reduce the potential impacts are provided:

Impact on natural habitat

This impact is associated with the potential for disruption of sensitive floral habitats and fauna populations. The planning regarding the route of the power line should take into account the ecological sensitivity of the site.

Relevant to the project is the following:

- The natural vegetation along the proposed corridors investigated are in a “poor to fair state” with impacts related to grazing, cultivation, erosion, mining and poor infra structure development.

Section 1: The new 132kV power line between the existing Lebowakgomo substation and the new Dithabaneng substation.

- The route for Alternative 1 is preferred. It follows the existing power line and this servitude can be used as an access road during construction. This will lower the need for clearing of natural vegetation during construction.
- Alternative 2 follows a route with few roads and is therefore not preferred. More clearing of natural vegetation, especially in the mountainous areas are needed. This can increase the possibility of erosion, especially after construction when maintenance of the corridor is not enforced.
- The mountainous terrain to the north of the Lebowakgomo Hospital has steep slopes prone to erosion. The natural vegetation just to the north of the hospital is encroached by Dichrostachys cinerea and Acacias shrubs with many exotic invasives present.
- All stream crossings must be treated as sensitive and existing roads must be used to lower the risk of erosion.
- The route between the residential areas of Lebowakgomo and Lewareng (south of the hospital) is modified, but a few large Sclerocarya birrea are present. Permits are needed for cutting or trimming.
- To the south of the residential areas, the route will cross a low hill (koppie). It is suggested that the crossing point must be near the foot of the outcrop, as this will lower any possible erosion impacts. It will further lower the need to cut many indigenous trees.
- The corridor is near the Tudumo/Chunies River and all pylons must be placed outside the 1:100 year flood line.

- Just to the north of the Seleteng substation the proposed corridor crosses another low outcrop. Clearing of trees are needed, but no red data species or protected trees were observed.
- **Alternative 1 is the preferred route for this section (from an ecological perspective).**

Section 2: The new 132kV power line between the Dithabaneng substation and the new Dwaalkop substation.
- Many impacts related to grazing, wood collection and general poor land use practices are present is this section of the proposed corridor.
- Alternative 1 near the road is preferred, as it allow for easier access during construction. The alternative further to the west (Alternative 2) will need the construction of more access roads and crossings of streams without proper bridges. The existing road has proper bridges, lowering the risk of impacts to the stream.
- **From an ecological perspective, Alternative 1 is preferred in this section**.

Section 3: The 132kV Loop-in-Loop-out (LiLo) line from the Middelpunt- Dithabaneng 132kV line to the proposed Boynton substation.
- Some protected trees (Sclerocarya birrea) are present in the area.
- Although no Balanites maughamii, Philenoptera violacea and Combretum imberbe were observed during the survey, it must be confirmed.
- Although there are streams, the substation can be constructed to avoid these.
- All pylons must be placed at least 100m from small drainage lines or outside the 1:100 flood lines for larger rivers.

Mitigation for impact on natural habitat

Proper planning will limit the impact of the power lines on the natural habitat and therefore the following is proposed:
- Site specific measures in terms of ecology as identified by the ecologist, Wynand Vlok (Tel 082 200 5312) must be included in the contract with the Contractor and implemented by the Contractor during the construction phase.
- Large Sclerocarya birrea are present along the powerline corridor. Permits are needed for cutting or trimming.
- The presence of Balanites maughamii, Philenoptera violacea and Combretum imberbe should be confirmed.
- A walk down study is needed to confirm the presence/absence of all protected trees once the final route is demarcated (pegged). The protected trees must be mapped (GPS) and applications for trimming, cutting and removal must be acquired before the clearing of the servitude can commence.
- In general only one application requesting one permit per power line corridor is necessary. All the protected trees, in this corridor, 2m and above, should be indicated on a map.
- An ongoing management programme to mechanically control alien plant species that invade the disturbed soils around the newly erected pylons is recommended.
- The power line corridor should be inspected every year (before and after the summer rain season) for soil erosion and if found, to rehabilitate; to not use chemicals in the control of weeds; and to remove all left over construction materials, rubble etc. upon completion of the project.
- The mountainous areas/ koppies should be viewed as sensitive although not as “No-Go” zones. It is recommended to use wide spacing of pylons to limit the physical footprint on the actual ground.
- In addition, the placement of pylons around all drainage lines, streams and rivers must be confirmed to ensure it is outside the 100m zone for drainage lines and streams and the 1;100 year flood line for larger rivers.
- Having taken all aspects of the investigation into account the following line variant is recommended - **Alternative Route 1 for the Lebokwagomo - Dithabaneng line and Alternative 1 for the Dithabaneng - Dwaalkop line.**

Social Impact
- The construction of new power lines could potentially impact on landowners if not planned and designed to accommodate the needs of the landowners.
- In addition, the possibility exists that a project might impact also upon residents who are not landowners. Land users or lands rights holders could farm on the portion of land affected by the proposed line or rent a house and not own it. The compensation for the servitude is always paid to the landowner and not to the land user.
- Any possible impact on landowners as well as land users should be identified and accommodated before construction of the route.
- The development on State land allocated to a tribe requires the consent of the Minister of the Department of Rural Development and Land Reform as nominal landowner of the land. In terms of the Interim Protection of

Informal Land Rights Holders, 1996 (Act 31 of 1996), the Land Rights Holders must be consulted, must participate in the decision making process, and consent to the development in the form of a tribal resolution.

Mitigation for Social Impact

The route of power lines should be designed to accommodate the needs of landowners and landusers.

- The design for the power line route and the placement of structures should be accommodating to existing structures in the alignment of the route.
- Routes with evident visual disturbance caused by existing power lines or roads are in general more acceptable than traversing through pristine area.
- For the above reasons the Route alternatives had been proposed adjacent to existing disturbance as far as is achievable. (e.g. from the Lebogakomo substation the route follows an existing power line to south of Dithabaneng substation). In other words the proposed power line route follows and existing powerline for more than 70% of the route. For the rest of the route, the alignment was designed to mostly follow existing roads.
- During the course of the EIA, all affected landowners were identified and consulted with regarding the proposed project. Meetings were conducted with the relevant Tribal Authorites, and one-on-one meetings with affected landowners to address their specific requirements. All landowners indicated their agreement to the route or their willingness to enter into further negotiations.
- The properties in question (servitudes) will not be purchased and the registered owner will receive compensation for the use of the servitude. Further negotiations are taking place to confirm the details for the acquisition of the servitude and compensation therefore.
- A negotiator has been appointed by the applicant to consult with land owners/land rights holders. Further negotiations are taking place to confirm the details for the acquisition of the servitudes and compensation thereof. The negotiator will confirm the specific requests/requirements with each landowner. These will be stipulated in the final document, an option document. The option document is a binding document that reflects all the requirements of the landowner, for example: the exact positions of the pylons on the property; the negotiated compensation for the servitude; specific access arrangements to the property etc.

2.2 IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION PHASE

The potential impacts that are likely to occur as a result of the construction phase are described below. In addition the mitigation measures that may eliminate or reduce the potential impacts are provided:

Risk of Surface and Groundwater Pollution

- Hazardous materials and construction equipment will be stored at the campsite and used on site. The pollution of groundwater may result from spillages that may occur. In addition, the campsite may accommodate construction workers, in which case solid and liquid effluents will be produced, including sewage and domestic solid waste.
- Therefore 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 site camps and at the work sites. The above may result in a change in groundwater quality with the associated negative impact on humans and the natural habitat.
- A management plan must be in place to rehabilitate any such spills. Part of the management strategy must further include the proper storage and removal of any by-products and building rubble.
- Relevant to this project is the following:
- A river (Tudumo/Chunies River) falls within the project area. The proper implementation and management of mitigating measures are crucial.
- There are a few seasonal drainage routes that run across and through the servitudes. During the summer rainy season these are intermittently active.
- The drainage routes (or lines) are not seen as being of any threat to the power line, but they should be kept in mind during construction and care should be taken to avoid them. Concrete foot supports should not be placed directly in or on the banks of these drainage furrows. Neither drainage nor erosion are seen to be significant threats as long as the proper mitigating measures are implemented.

Mitigation of Surface and Groundwater Pollution

Construction camp

- Encourage the construction contractor to employ local people as far as is reasonably practical and encourage the contractor to transport them daily to and from site. This will reduce solid and liquid waste production and water demand at the site camps.
- All construction activities and movement of people and machinery to remain within the designated power line corridor.
- Proper water facilities need to be installed and maintained for construction workers. No water from out of the river may be used for drinking, washing or cooking purposes.
- In all cases, abstraction of water for construction purposes will require a permit from the Department of Water Affairs unless pre-existing rights are purchased from landowners. For this project, water tanks will be provided at the construction site.
- Mixing of cement, concrete, paints, solvents, sealants and adhesive must be done in specified areas on concrete aprons or on protected plastic linings to contain spillage or overflows onto soil to avoid contamination of underground water. The use of pre-mixed cement is recommended. No concrete to be allowed to be mixed in the veld.

Diesel, hydraulic fluid and lubricants

- Minimize on-site storage of petroleum products;
- Build adequate structures (berms and containment structures) to contain any oil spills which might emanate from transformers;
- Bund storage tanks to 120% of capacity;
- Ensure proper maintenance procedures in place for vehicles and equipment.
- Servicing of vehicles to be in designated areas with appropriate spill management procedures in place;
- Ensure measures to contain spills readily available on site (spill kits).

Site camp domestic waste (kitchens, showers)

- Deposit solid waste in containers and dispose regularly at the appropriate landfill site licensed in terms of section 20 (b) of the National Environment Management Waste Act, 2008 (Act No 59 of 2008). Proof thereof to be kept by contractor.
- A copy of the service agreement, to verify the disposal sites that will be accepting the waste, should be submitted to the Dept of Water Affairs.
- Dispose of liquid waste (grey water) with sewerage.

Site camp sewage

- Minimize on-site accommodation.
- Only proper, certified portable chemical toilets to be used in campsites.
- Only certified, portable chemical ablution facilities to be used and these to be positioned only within the 31m power line servitudes.
- Only certified waste disposal companies to be used to regularly clean and empty portable toilets.
- Under no circumstances may any human waste (sewage) be discarded in the open veld. Not even buried.
- No ablution facilities allowed to be placed within 200m of the banks of any river or seasonal stream.
- No ablution facilities allowed to be within 200m of any drainage lines (even during times when they are dry)

Site camp inert waste (waste concrete, reinforcing rods, waste bags, wire, timber etc)

- Ensure compliance with stringent daily clean up requirements on site.
- Any waste that cannot be recycled will be transported to the appropriate landfill site licensed in terms of section 20 (b) of the National Environment Management Waste Act, 2008 (Act No 59 of 2008).

Rivers and drainage lines

- Rivers and drainage lines are always seen as sensitive and should be avoided at all cost. In this instance a water course (Tudumo/Chunies River) is to the east of the powerline corridor and a few seasonal streams and drainage lines cross the corridors for the power lines. These need to be completely avoided and no pylons may be placed directly within any one of these water courses.
- Positioning of any pylons need to be a minimum of 100m from the edge of the river banks or outside of the 1 in 100 year floodline.

- Positioning of the foundation slabs for the pylons must be a minimum of 100m away from the edge of all drainage lines.
- Under no circumstances may a pylon be placed directly in the bed of a river or drainage line.
- During and after construction, storm water control measures should be implemented especially around stockpiled soil, excavated areas, trenches etc. so that export of soil into the watercourse is avoided.

Impact of erosion

- Unnecessary clearing of vegetation can result in exposed soil prone to erosive conditions.
- Insufficient soil coverage after placing of topsoil, where large surface areas are applicable, could also cause erosion.
- To cause the loss of soil by erosion is an offence under the Soil Conservation Act (Act No 76 of 1969.)
- The management of surface water runoff during construction is important to prevent soil erosion on the site. If construction takes place during the rainy season, sufficient storm water management will be required to manage water runoff.
- In summary, excavation of foundations for pylons, movement of vehicles and people and the run-off from cleared areas can cause erosion.

Mitigation of Impact of erosion

- The mountainous terrain to the north of the Lebowakgomo Hospital has steep slopes that will be prone to erosion.
- The route for Alternative 1 is preferred. It follows the existing power line and this servitude can be used as an access road during construction. This will lower the need of clearing of natural vegetation during construction.
- Alternative 2 follows a route with few roads and is therefore not preferred. More clearing of natural vegetation, especially in the mountainous areas are needed. This can increase the possibility of erosion, especially after construction when maintenance of the corridor is not enforced.
- The low mountainous areas are prone to erosion, but the current access route must be used to lower the risk of erosion. All stream crossings must be treated as sensitive and existing roads must be used to lower the risk of erosion.
- To the south of the residential areas, the route will cross a low hill (koppie). It is suggested that the crossing point must be near the foot of the outcrop, as this will lower any possible erosion impacts. It will further lower the need to cut many indigenous trees.
- These areas are not seen as “No-Go” areas, but care should still be taken to avoid any unnecessary disturbance of veld or soil. Removal of trees, shrubs and other vegetation should be kept strictly to within the 8m corridor under the power lines.
- Only a single, basic vehicle track to be constructed as an access road under pylons moving through the mountainous areas.
- Access roads need to be kept to an absolute minimum.
- The longest possible distance between pylons should be used in an effort to limit the footprint size on the outcrop area.
- The power line must run as straight as possible through and over these koppies (hills). This in an effort to limit sharp turns that literally create a larger physical footprint on the ground.
- The corridor is near the Tudumo/Chunies River and all pylons must be placed outside the 1:100 year flood line.
- Just to the north of the Seleteng substation the proposed corridor crosses another low outcrop. Clearing of trees are needed, but no red data species or protected trees were observed.
- Neither drainage nor erosion are seen to be significant threats as long as the proper mitigating measures are implemented.
- Construction activities should be well managed to prevent erosion and the following is relevant:
    - A major water courses (Tudumo/Chunies River) along with a few seasonal streams and drainage lines cross the corridors for the power lines. These need to be completely avoided and no pylons may be placed directly within any one of these water courses. Mitigation measures as previously indicated are relevant:
    - No temporary or other construction facilities to be erected or stored within 200m of the banks of the river.
    - Positioning of any pylons need to be a minimum of 100m from the edge of the river banks or outside of the 1 in 100 year floodline.

- Positioning of the foundation slabs for the pylons must be a minimum of 100m away from the edge of all drainage lines.
- Under no circumstances may a pylon be placed directly in the bed of a river or drainage line.
- Construction must be limited to drier periods.

- Unnecessary clearing of flora resulting in exposed soil prone to erosive conditions should be avoided.
- No trees or existing grass strata outside of the power line corridor should be removed to lower any kinetic energy of potential run-off.
- Indigenous vegetation, which does not interfere with the safe operation of the substation/ power line, should be left undisturbed.
- The ground around all foundation slabs for the pylons need to be inspected before and after the summer rainy season for erosion. Any erosion found needs to be fixed and preventative measures put in place to prevent a reoccurrence of the situation.
- Pro-active measures must be implemented to curb erosion and to rehabilitate eroded areas. All areas susceptible to erosion must be installed with temporary and permanent diversion channels and berms to prevent concentration of surface water and scouring of slopes and banks, thereby countering soil erosion.
- Specifications (as identified in the Environmental Management Programme) for topsoil storage and replacement, to ensure sufficient soil coverage as soon as possible after construction activities, must be implemented.
- All cleared areas must be ripped and rehabilitated after construction. The top 200mm layer of topsoil must be removed and stockpiled in heaps not higher than 2m and replaced on the construction areas once the activities have been completed. The affected areas should be replanted with a grass mixture indigenous to the area.

Solid Waste

- It is expected that a certain amount of construction waste will be generated during construction.
- Expected waste could be unused steel, conductor cables, cement or concrete and general waste around the construction site (plastic, tins and paper), which may degrade the environment if not disposed in the correct manner.
- Solid waste might remain on site after the completion of construction. This can cause pollution to the environment and be detrimental to animals.

Mitigation of Solid waste

- The construction teams should ensure that all waste is removed from the site and that they recycle the items that can be used again. Unusable waste steel and aluminium will be sold to scrap dealers for recycling at the Eskom stores.
- Any waste that cannot be recycled will be transported to the appropriate landfill site licensed in terms of section 20 (b) of the National Environment Management Waste Act, 2008 (Act No 59 of 2008). A copy of the service agreement, to verify the disposal sites that will be accepting the waste, should be submitted to the Dept of Water Affairs.
- Proper and adequate containers (rubbish bins) to be put in campsites for the temporary disposal of food waste and general litter generated by construction workers. These containers need to close securely to avoid items (eg. paper and plastic) been blown into the veld, or been pushed over and rummaged through by wild animals such as monkeys. Proper waster management is essential.
- Containers for food and general waste to be removed weekly to avoid bins overflowing their capacity.
- Under no circumstances may any sewage, waste food or general litter be dumped in the veld.
- Stockpiling of construction material should be such that pollution of water resources is prevented and that the materials will be retained in a storm event.
- Once construction is completed, the contractor has to obtain written consent from the relevant landowner that the construction site, construction areas, access routes, etc. are sufficiently and adequately rehabilitated to the landowner's satisfaction.

Impact of labourers

An uncontrolled influx of labourers with associated squatter and increased crime problems create 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.

Mitigation of impact of labourers

- Mitigation measures to counter impact on the natural environment and limit potential for crime include specifications in terms of control of construction workers (i.e. provision of toilet and cooking facilities, provision of either accommodation facilities or transport facilities, implementation of Environmental Educational Programmes, etc.). Accommodation for labourers must either be limited to guarding personnel on the construction site (with labourers transported to and from existing neighbouring towns) or a separate fenced and controlled area where proper accommodation and relevant facilities are provided.
- Prepare a comprehensive Environmental Management Programme (EMPr) for the control of environmental impacts at the site camps.
- The EMPr is to include specific provision for the management of the following:
  - Site location
  - Solid waste
  - Liquid effluent (sewage)
  - Storm water
  - Litter
  - Nuisance (Noise)
  - Hazardous substances
  - Social pathologies (prostitution, drunkenness, theft)
  - HIV/Aids prevention.
- Develop an HIV/Aids workplace policy.
- Ensure that the contractors develop a comprehensive site camp management plan. This should apply even in the case of the limited accommodation camps recommended above.
- Plan campsites an appropriate distance from any facility where it can cause a nuisance.
- Camp site, storage facilities and other necessary temporary structures to be erected within the immediate areas for Lebowakgomo substation, Dithabaneng substation, Dwaalkop substation and the site of the proposed Boynton substation.

Impact on Safety and Security

A range of safety and security issues could result from the construction of the project. These could be i.e. a threat to the safety of children or individuals in the area; mortality to stock and other farm animals close to the site; an increase in crime, including stock theft and poaching.

In terms of safety, it should be noted that the project involves the excavation of land for the structures of the power lines. The excavated area for the pylons could be approximately 3 meters deep by 1,5 meters wide. Excavations and open trenches can act as a trap for children (and also snakes, small mammals and lizards). Blasting could also create a safety risk in terms of flying objects and damage to properties.

The negative impact of noise and dust, generally associated with construction activities, are temporary, occurring mostly during the construction phase.

Mitigation of Impact on Safety and Security

Safety mitigation measures

- During construction, the Contractor should, put up a temporary fence around the campsite and work areas.
- All construction activities should take place within fenced or otherwise demarcated areas.
- All excavated areas for pylons must be fenced and barrier tape must be placed around them to prevent humans and animals from falling into them.
- The contractors must appoint their own guards to safeguard their materials.
- Construction workers should wear clearly identifiable clothing that allows landowners to easily identify contract workers on site.

- Once construction is completed, the contractor has to obtain written consent from the relevant landowner that the construction site, construction areas, access routes, etc. are sufficiently and adequately rehabilitated to the landowners' satisfaction.
- Should blasting be deemed necessary, it may only be undertaken by specialists in the field and should be limited to localised areas. All relevant legislation must be adhered to.
- All adjacent landowners have to be informed of the blasting programme prior to any blasting taking place. Contractors must liaise personally with adjacent landowners. All communication in this regard must be documented.
- A Fire Management Plan has to be identified during the pre-construction phase and must be implemented throughout the construction and operational phases of the project.
- No open fires to be allowed in the power line corridors or adjacent areas.
- No open fires to be allowed outside of the substations sites.
- Cooking or fires must be kept to within the demarcated area of the substation. Special care needs to be taken for the prevention of run away veld fires into the adjacent area.
- In the campsite a designated area for camp fires and cooking needs to be made. Should open fires be used then an area of at least 2m by 2m needs to be cleared of any flammable materials such as grass. This is also necessary with the use of portable gas or paraffin burners typically used for cooking.
- No fires to be left unattended or allowed to burn through the night.
- Fire fighting equipment must be readily available on site during welding and cutting operations.
- Branches and other debris resulting from pruning processes should not be left below conductors or in areas where it will pose a risk to infrastructure.
- No fires may be made for the burning of vegetation and waste.
- Fires shall not be made for the purpose of chasing or disturbing indigenous fauna.
- Construction workers should be barred from collecting firewood or any medicinal and protected plant species.
- No firearms should be allowed at the construction sites.

Noise mitigation measures:

- Construction hours will be restricted to specific periods which exclude Sundays and public holidays.
- All construction workers will be allowed only for specified day light hours and will be transported from the site by the contractors.

Dust mitigation measures:

- Sweeping of construction sites and clearing of building rubble and debris must take place regularly.
- According to the applicant and their contractors**,** dust suppression is not required due to the following reasons:
    - The servitude areas receive minimal bush clearance. Indigenous vegetation which does not interfere with the safe operation of the power line is left undisturbed. Further to the above, vegetation is not ploughed, but mowed and therefore no areas are left without vegetation cover.
    - In terms of access roads, existing roads are used and the impact to these roads is insignificant. The reason is that construction material is minimal (a pylon - planted approximately 330m apart, cement - to plant the pylon, and cable - for the overhead wires). Therefore a small number, of construction vehicles deliver the material to the site. Speed of above 30km/hour will not be exceeded. A limited/ insignificant amount of dust is therefore emitted in the atmosphere. In other words, there will be no significant construction, ground-clearing, leveling or grading of soils, moving or compacting of soils which are often associated with other forms of construction, but not with erecting of powerlines.

Impact on natural habitat

The construction of the power line will have impact on the natural environment. This impact is associated with disturbance to and/or destruction of the flora component.

- During construction the project could cause a significant 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 firewood and medicinal plants, as well as uncontrolled veld fires.

- Various species of indigenous trees and bush on private land are protected by law in terms of the National Forests Act No. 84 of 1998, which stipulates that it is necessary to obtain a permit from the Forestry Branch of the Department of Agriculture, Forestry and Fisheries in order to cut, trim or remove them.

Mitigation of impact on natural habitat

- The proposed project requires the construction of a 132kV line. The total servitude width is 31 meters, except for the short loop-in-loop-out-line that requires a total servitude area of 52 meters wide.
- Site-specific measures for the specific properties as identified by the ecologist, must be implemented by the Contractor during the construction phase and by Eskom and the maintenance teams during the operational phase. Refer to mitigation measures provided in the Planning phase.
- During the construction phase, camp site, storage facilities and other necessary temporary structures to be erected within the immediate areas demarcated for the Lebowakgomo, the Dithabaneng and the Dwaalkop substations.
- No material or machinery to be stored or placed in the open veld outside the designated area of the power line corridors.
- No camp sites or other temporary structures to be erected outside the designated areas of the power line corridors.
- No concrete to be allowed to be mixed in the veld.
- All construction activities and movement of people and machinery to remain within the designated power line corridor.
- Temporary access roads for vehicles carrying equipment, materials, etc. into the power line corridors need to be kept to an absolute minimum. None of these accesss roads may cross through sensitive areas.
- Work corridor to be limited to 20 metres along the route of the servitudes.
- Ensure that no trees or existing grass strata outside of the servitude corridor be removed to lower any kinetic energy of potential run-off, that disturbed surface areas in the construction phase be restored and lastly that no open trenches or mounds of soils created during construction be left.
- The procedures for vegetation clearance and maintenance within servitudes and on Eskom owned land as prescribed by Eskom must be implemented. Selective bush clearing must take place, i.e. indigenous vegetation, which does not interfere with the safe operation of the structure, should be left undisturbed.
- Where clearing of access for construction is essential, the maximum width to be cleared is 8m, 4m on either side of the alignment for the power line. Clearing for tower positions must be the minimum required for the specific tower.
- A few koppies/mountainous areas have been identified along the proposed servitude routes. These areas are considered moderately sensitive and should be approached with caution.
- The area is not seen as a “No-Go” area, but care should still be taken to avoid any unnecessary disturbance of veld or soil. Removal of trees, shrubs and other vegetation should be kept strictly to within the 8m corridor under the power lines.
- Only a single, basic vehicle track to be constructed as an access road under pylons moving through the rocky area.
- Access roads need to be kept to an absolute minimum.
- No temporary storage facilities, toilets, dwellings, etc. of any kind to take place within this rocky area. Not even within the demarcated power line corridor.
- The longest possible distance between pylons should be used in an effort to limit the footprint size on the rocky area.
- The power line must run as straight as possible through and over rocky areas. This in an effort to limit sharp turns that literally create a larger physical footprint on the ground.
- Great care and thought must be taken into the actual positioning and construction of the foundation slabs due to the steep gradient of the study site. There is therefore a real danger of soil erosion and resulting veld degradation in this area.
- The ground around all foundation slabs for the pylons need to be inspected before and after the summer rainy season for erosion. Any erosion found needs to be fixed and preventative measures put in place to prevent a reoccurrence of the situation.
- Disturbance of the soils must be kept to an absolute minimum to limit the potential introduction of alien plants.

- All exotic plants must be removed during construction and cleared areas must be rehabilitated. Areas where exotic plants are cleared should be rehabilitated and re-planted with approved indigenous species.
- Care must be taken to ensure alien vegetation is not spread as a result of vegetation management processes through the transport of seeds or other vegetative material from one site to another.
- No chemical control to be used in the control of alien plants or indigenous plants.
- Damage can result in habitat modification or erosion as a result of the proposed power line construction activities. This can be avoided in general, by not allowing any construction of any sort to take place within aquatic and riparian habitats encountered, as these habitats are viewed as sensitive.
- A water course (Tudumo River) runs to the east of the powerline corridor for a section before it reaches Dithabaneng sub. In addition a few seasonal streams and drainage lines cross the corridors for the power lines. These need to be completely avoided and no pylons may be placed directly within any one of these water courses.

Impact on Birds

The possible impacts of the proposed construction of power lines and substations on birds are the following:

Loss of breeding, foraging and roosting habitat through habitat transformation

During the construction phase and maintenance of power lines and substations, some habitat destruction and alteration inevitably takes place. This happens with the construction of access roads, and the clearing of servitudes. These activities have an impact on birds breeding, foraging and roosting in or in close proximity of the site, through the modification of habitat.

Mitigation of Impact on Birds

Relevant to this study: (See full report in Appendix D3)

- Parts of the study area has since been transformed to accommodate a change in land use (i.e. agriculture, urbanization and industrial development) which reduced the number and variety of large species originally inhabiting the area, on account of the loss of habitat and decline in food availability. However, because large, relatively undisturbed areas of woodland still remain, particularly on the slopes and crests of hills, and it is likely that many of the remaining large Red Data species (particularly raptors) will still utilize these areas. It is inevitable that woodland will have to be cleared under the new line, and the biggest potential impact on large Red Data birds would be the removal of large trees. The impact on smaller species that are potentially breeding in the area that will be cleared for the new power line will be local in extent, in that it should not affect regional or national populations in any significant way.
- The proposed construction of the new power line should therefore have a **low - medium** habitat transformation impact from an avifaunal perspective, depending on how many trees are removed during the construction of the line. The highest impact will be hilly areas where relatively structurally intact woodland persists.
- The proposed construction of the new Boynton substation should have a **low** habitat transformation impact, given the extent of habitat degradation already evident in the area.
- The removal of large trees should be avoided as much as possible.

Impact on cultural heritage resources

Construction can destroy heritage resources ('national estate') should it occur in or near the proposed project area.

Mitigation of impact on cultural heritage resources

The following types and ranges of heritage resources occur in and near the Eskom Project Area, namely:

- A single grave occurs next to Alternative 01 and Alternative 02 for the proposed new 132kV Lebowa-Dithabaneng power line.
- The demolished village of Maneeng (next to Makurung village) holds at least eighty seven (87) graveyards and graves which are associated with a hundred and forty four (144) deceased individuals.

Possible impact on the graveyards

- The single grave (G01) next to the proposed 132kV power line between the Lebowa Substation and the Dithabaneng Substation is situated at a safe distance from Alternative 01 and Alternative 02 where it will not be affected by these two options.

- However, the construction of Alternative 02 for the proposed 132kV Dithabaneng Substation to the proposed Dwaalkop Substation may affect a number of graveyards in the demolished Maneeng village if this alternative is used.

Recommendation

- Alternative 01 and Alternative 02 for the proposed 132kV power line between the Lebowa Substation and the Dithabaneng Substation are situated next to G01 which needs not to be affected by these alternatives. A 'safe' corridor of at least 20m must be maintained between the power line and the grave. The grave must be demarcated with a fence or with red cautionary tape and must be avoided by contractors when the power line is constructed. If a permanent fence is erected around the grave it must be fitted with a gate to ensure access to family members or friends who wished to visit the deceased.
- Alternative 01 is recommended for the proposed 132kV power line between the Dithabaneng Substation and the proposed Dwaalkop Substation as this alternative will not affect any of the graveyards in the demolished Maneeng village.
- If any graveyard is going to be affected directly (e.g. a pylon must be constructed on top of any graveyard) such a graveyard has to be exhumed and relocated. The exhumation of human remains and the relocation of graveyards are regulated by various laws, regulations and administrative procedures. This task is undertaken by forensic archaeologists or by reputed undertakers who are acquainted with the administrative procedures and relevant legislation that have to be adhered to whenever human remains are exhumed and relocated. This process also includes social consultation with a 60 days statutory notice period for graves older than sixty years. Permission for the exhumation and relocation of human remains have to be obtained from the descendants of the deceased (if known), the National Department of Health, the Provincial Department of Health, the Premier of the Province and the local police.

Visual impact

The visual impact resulting from the construction of power lines can be substantial in a more rural environment.
Should sensitive vegetation clearing as proposed in the mitigation measures be exercised then the visual impact of the power lines should not be significant.

Mitigation of visual impact

The following is relevant to this project:

- Impact to the natural habitat as a result of the project is to be expected. Construction could cause a significant impact where clearing for construction and access purposes, etc. is required. Insensitive clearing can cause the destruction of habitat.
- It is suggested that any existing servitude roads as well as existing roads must be used during construction and maintenance of the power line.
- The procedures for vegetation clearance and maintenance within overhead power line servitudes and on Eskom owned land, updated September 2009 must be implemented. These procedures includes i.e. the following:
  - Where clearing for an access road is essential, the maximum width to be cleared is 8m.
  - Clearing for pylon positions must be the minimum required for the specific tower, not more than a 5m radius around the structure position.
  - Indigenous vegetation, which does not interfere with the safe operation of the power line, should be left undisturbed.

Loss of agricultural land

The construction of power lines with the resulting clearance of servitudes can lead to a loss in agricultural land.

Mitigation of impact on Agriculture

The proposed construction of the power line will not impact significantly on any agricultural activity. The following is relevant to this project:

- Mining is by far the largest contributor to the economy of the local municipality with the role of agriculture fairly insignificant.
- The project area is being transformed by deforestation, overgrazing, mining, effects of human settlements etc.

- In addition, shortage of water is a limiting factor due to lack of major rivers and poor rainfall.
- Should the construction of the power line impact on any agricultural activities, this impact will only be for a limited period during construction. An access road of 8m wide could be cleared to construct the power line. After construction, normal agricultural activites could continue under the power line as usual.
- It is therefore submitted that the servitude area will not interfere with any agricultural activities. In addition, Eskom will not own the servitude but will purchase the rights to construct and maintain the line. A change in land use from agriculture to other land uses is not applicable.
- In addition, in terms of the Subdivision of Agricultural Land Act, 1970 (Act 70 of 1970), Section 2(a) Eskom is a statutory body and therefore it is not subjected to the provisions of the Act.

2.3 IMPACTS THAT MAY RESULT FROM THE OPERATIONAL PHASE

The potential impacts that are likely to occur as a result of the operational phase are described below. In addition the mitigation measures that may eliminate or reduce the potential impacts are provided:

Impact on Birds

Two common problems in Southern Africa are the electrocution of birds (and other animals) and birds colliding with power lines.

Electrocutions: Electrocution of birds happens when they loose their balance and they bridge the clearances.

Collisions: Collisions are when birds collide with the conductors or earth wires of overhead power lines.

Mitigation of impact on birds

Relevant to this study:

Section 1: The new 132kV power line between the existing Lebowakgomo substation and the new Dithabaneng substation.

The construction of the new proposed Lebowa-Dithabaneng 132kV line poses a limited threat to the birds occurring in the vicinity of the new infrastructure. The power line poses a **low** collision risk, mostly to non-Red Data species and a **medium** electrocution risk, in particular to vultures. **Alternative 1** emerged as the first choice from a bird impact perspective.

Section 2: The new 132kV power line between the Dithabaneng substation and the new Dwaalkop substation.

The construction of the new proposed Dithabaneng-Dwaalkop 132kV line poses a limited threat to the birds occurring in the vicinity of the new infrastructure. The power line poses a **low** collision risk, mostly to non-Red Data species and a **medium** electrocution risk, in particular to vultures. **Alternative 1** emerged as the first choice from a bird impact perspective.

Section 3: The 132kV Loop-in-Loop-out (LiLo) line from the Middelpunt- Dithabaneng 132kV line to the proposed Boynton substation.

The construction of the new proposed Loop-in Loop-out 132 kV lines from Middelpunt-Dithabaneng 132 kV power line to the proposed Boynton Substation will pose a limited threat to the birds occurring in the vicinity of the new infrastructure. The power line poses a **low** collision risk, mostly to non-Red Data species and a **medium** electrocution risk, in particular to vultures.

Recommendations

- Power lines: The spans that cross major drainage lines and skirt dams should be marked with Bird Flight Diverters on the earth wire of the line, five metres apart, alternating black and white.
- Trees: The removal of large trees should be avoided as much as possible.
- Poles: The poles should be fitted with bird perches on top of the poles to draw birds, particularly vultures, away from the potentially risky insulators.

Visual impact

Impact on the aesthetics of an area is related primarily to the visual impact of the proposed power line and secondary to the impact of habitat destruction.

Factors to consider regarding the visual impact are the following:

- The ability of the surrounding environment to absorb the visual impact of the power line.
- The structures to be used for the power line.

Mitigation of Visual Impact

It is not expected that significant additional visual impact will occur as a result of the power line due to the following:

- In general the recommendations from landowners are that the power line should not traverse any property, but rather run along the public or existing roads. The chosen route should be mostly along primary roads with wide verges or wide gravel roads. Routes with evident visual disturbance caused by existing power lines or roads are more acceptable than traversing through pristine area.
- In line with the above, Route Alternative 1 were designed to run through more "disturbed" corridors, i.e. mostly along an existing powerline, and adjacent to roads.
- In addition, visual impact could generally be mitigated to some extend by constructing the line with monopole steel structures. Visuals of the structure are included in Appendices C2 and C3 of the BAR. From previous experience the steel poles are known to weather and with time blend into the environment.

Access to property

Eskom Holdings has a right to enter property in order to maintain plant and obtain meter readings, therefor the manner of access to land, on which Eskom holds servitudes and electrical infrastructure, should be considered by Eskom as well as landowners.

Security is important to landowners who need to ensure that the safety of their family, staff and property is catered for.

Mitigation to establish a protocol for Access to property

Approaches to facilitate access for all Eskom staff and contractors (performing work on behalf of Eskom) is stipulated in the Access to Farms (Distribution, Transmission and Generation) Standard 32-1173.

Protocol measures are i.e. as follows:

- All Eskom staff will carry identity cards containing their photographs, indicating that they are Eskom employees. Landowners may verify presence of Eskom staff telephonically at the Contact Centre, at 08600 37566.
- Eskom contractors will carry identity cards displaying their photographs, indicating that they are contractors. Letters containing contract appointment as well as whom at Eskom to contact will be given to each Contractor. In the case of unplanned activities, the contractor must be in possession of a work order number.
- Eskom vehicles will be clearly marked on the door. Vehicles operating after dark will be fitted with amber rotating lights.
- Vehicles of Eskom contractors must have a magnetic strip on the side containing the words "Eskom contractor", as well as an amber rotating light.
- No person may climb or crawl over or through fences without the owners' permission. No person may damage or remove a fence without the owners' permission.
- Gates should be left in the state the landowner intended. In order to assist with any possible claims, any visitor will keep a log of each gate that is used stating:
    - the position of the gate with reference to towers
    - the state in which it was found (open or closed)
    - the time
    - any other appropriate information (locks, etc.)
- Standard Eskom locks shall be used in all cases and in such a manner that it securely locks the gate. Where duel-use is made of the gate by Eskom Holdings and the land owner, the Eskom lock shall be locked into the chain-link, separate from the farmer's lock as to permit both parties to gain access without inconveniencing either party. No interference with land owners' locks will be tolerated. The cutting of land owners' locks except in extreme emergency will result in disciplinary action.
- Where helicopters are deployed, care should be taken in conjunction with the Line and Servitude Manager and the landowner not to cause any disturbance or harm to livestock such as ostriches or game. The use of helicopters on

lines during line patrols does present it's challenges when all the property owners en route need to be informed before the inspection. Notice of such patrols should be communicated via District Agricultural offices a month before.

- Any damage caused to any gate, fence, crop or grazing shall be reported to the Line and Servitude Manager or ECO who will then refer it to the appropriate Eskom Holdings Official for processing. Extreme care must be taken with fires and the use of fires will only be permitted with express approval of the landowner.
- No fauna or flora will be collected or removed from any farm by any visitor without written permission of the Landowner, in which case cognizance will be taken of appropriate provincial legislation pertaining to fauna and flora. Under such cases Eskom Holdings ethical policies and guidelines will be strictly applied.
- Any visitor will at all times refrain from littering and must remove any refuse when leaving.
- Visitors shall as far as possible only use the servitude roads or the roads as determined by the environmental management plan and agreed to with the Land owner. Where this is not possible the landowner's permission shall be obtained for the use of any other roads. In all cases care shall be taken to not cause any damage in the process and driving through the veld must be avoided as far as possible.

Planned outages

- Eskom will notify customers at least 10 days in advance through the appropriate media – either in writing, electronically (SMS) or telephonically. The onus rests on the Customer to ensure that all their contact details are updated on the Eskom system. Should its best attempts to communicate fail, the work will proceed regardless.

Planned activities such as vegetation control, live-line work and line inspections.

- Eskom will notify customers at least 48 hours in advance through the appropriate media – either in writing, electronically or telephonically. Should its attempts to communicate fail, the work will proceed.

Unplanned/unscheduled visits

- Rapid power restoration without any delay is in the interest of both Eskom and the customer. This is dependent on free movement.
- All Eskom staff as well as representatives of Eskom contractors will carry identity cards containing their photographs to indicate whether they are Eskom employees or Eskom contractors. In addition, customers may request a work order number to be verified with the Contact Centre. Vehicles must be clearly marked.

Impacts associated with fire breaks and servitude maintenance

The servitude areas has to be maintained to ensure the safety of the Eskom hardware, but in particular the safety of the landowner and his property. Should the servitude not be maintained this can result in danger to the power line as well as damage to the property of the landowner.

Mitigation of the impact associated with fire breaks and servitude maintenance

- In the case of 33kV, 88kV and 132kV distribution power lines, Eskom obtains the rights to a servitude.
- A servitude is a real right which Eskom obtained in order to construct its infrastructure upon the affected property and it is registered in the Deeds Office against the title deed of the affected property. The effected owner normally gets compensated for this right according to market related values. The servitude stays effective even if a property is transferred to another owner.
- The National Veld and Forest Fire Act (Act 101 of 1998) places an obligation on the owner to ensure compliance and hence creation of fire-breaks amongst other. The Act defines owner as follows: "owner" has its common law meaning and includes— (a) a lessee or other person who controls the land in question in terms of a contract, testamentary document, law or order of a High Court;.
- The Eskom understanding is that Eskom needs to ensure compliance to the Act where it has purchased a property (hence being the owner) such as a substation. Eskom is not considered as the owner for rights obtained via a wayleave agreement or servitude. Hence, the requirements for creating firebreaks or joining Fire Protection Agencies are applicable as far as where Eskom has a substation and not for power lines. These opinions were reflected in the specifications – thus, the Vegetation Management Standard does not specify requirements for fire breaks.
- Fire Risk Management is dealt with under a procedure titled "Distribution Fire Risk Management", reference SCSASAAJ6. Grass fires are dealt with in this procedure stating that vegetation and equipment must be maintained. A specific procedure deals with fire risk management for substations where the chipped stone needs to be maintained to prevent vegetation growth.

- Eskom Distribution does not make use of the practice to burn fire breaks, since this is not a legal requirement. Rather, it relies on the maintenance of vegetation in accordance to its Vegetation Management Standard to reduce the risk of fires starting from Eskom infrastructure.
- Eskom Distribution Division does not remove the grass below power lines since this does not pose a safety risk and will create the potential for erosion, causing environmental degradation and hence legal liability. It will furthermore be an economically unsustainable exercise for Eskom given the amount of power lines throughout South Africa.

Impact of alien vegetation

One of the impacts of concern is the introduction of alien plants and the use of chemical herbicides (weed-killers). This impact need to be monitored and managed on an ongoing basis.

- The manner in which the right of way was obtained/registered is an important factor in determining the legal requirements for erosion and weed control.
- The Conservation of Agricultural Resources Act (Act 43 of 1983) places a duty on the land user to control erosion and declared weeds and invader plants. Hence, the standard specifies weed control as a requirement for all power lines: The act defines land user as follows:
- 'land user' means the owner of land, and includes-
  - any person who has a personal or real right in respect of any land in his capacity as fiduciary, fideicommissary, servitude holder, possessor, lessee or occupier, irrespective of whether he resides thereon;
  - any person who has the right to cut trees or wood on land or to remove trees, wood or other organic material from land.
- A servitude is a real right which Eskom obtained in order to construct its infrastructure upon the affected property and it is registered in the Deeds Office against the title deed of the affected property. This places a duty on Eskom to control declared weeds and invader plants.

Mitigation of alien vegetation

- Alien vegetation in servitudes shall be managed in terms of Regulation GNR.1048 of 25 May 1984 (as amended) issued in terms of the Conservation of Agricultural Resources Act, Act 43 of 1983. In Terms of these regulations, Eskom shall "control" i.e. combat category 1, 2 and 3 plants to the extent necessary to prevent or to contain the occurrence, establishment, growth, multiplication, propagation, regeneration and spreading such plants within servitude areas or land owned by Eskom. Due to the nature of alien vegetation, a programme for alien vegetation control must be implemented. The implementation thereof is recommended as follows:
- Mechanical control of alien plants around disturbed areas to be implemented within two months of completion of construction. Thereafter every six months. These areas will be predominantly around the erected pylons where the soils were originally disturbed during the construction phase. Mechanical control to be of such a nature as to allow local grasses and other pioneer plants to colonise the previously disturbed areas, thereby keeping out alien invasives.
- No chemical control (herbicides) of alien plants to be used. These chemicals will have a detrimental effect on the surrounding vegetation and habitats.
- Vegetation under pylons and next to pylons to be mowed and not ploughed. This in an effort to avoid disturbing the ground which leaves it open to colonisation by alien weeds.
- Disturbance of the soils must be kept to an absolute minimum to limit the potential introduction of alien plants.

Impact on Safety and Security

Fire Hazard:

Poor maintenance, bird collision, electrical faults as well as pylons struck by lightning could result in veld fires that could result in destruction of habitat and property and even severe injury and/or death. It is important to note Eskom's responsibilities in terms of the National Veld and Forest Fire Act, Act No 101 of 1998. Reference is made to Section 3(1) of the National Veld and Forest Fire Act that clearly indicates that Owners may form an association for the purpose of predicting, preventing, managing and extinguishing veld fires. This implicates that it is voluntary to join a Fire Protection Agency and not mandatory according to the Act. As it is not mandatory to join a Fire Protection Agency, Eskom's maintenance staff working in the different areas is encouraged to join the Fire Protection Agencies if

their workload and staff availability allows this. Section 12 (1) of the National Veld and Forest Act reads as follows: "Every owner on whose land a veldfire may start or from whose land it may spread must prepare and maintain a firebreak on his or her side of the boundary between his or her land and adjoining land." Servitudes are registered for all Eskom sub-transmission (33 to 132kV) power lines and a way leave agreement is obtained for the reticulation power lines (11 and 22 kV). According to a legal opinion obtained from the Corporate Legal Department, Eskom is not the landowner of power line servitudes or rights of way, but only where Eskom purchased the land for a substation and is in possession of a title deed.

Risk of Electrocution:

There could be concern about the safety of people and animals in the environment of substations and power lines. To prevent the risk of electrocution no structures are allowed in the servitude areas of the power lines.

Mitigation of Impact on Safety and Security

Fire Hazard:

- The existing complaints structure must be revised by Eskom and be updated on a regular basis and communicated with all affected landowners to ensure effective response and service supply (especially in terms of reporting of obvious electrical faults).
- The applicable Emergency telephone numbers should always be available on site. Ms Prudence Khoza Environmental Management, Eskom Distribution Northern Region is the relevant contact person (Tel: 015 299 0592/ Cell: 082 818 2088).
- Annual fire management programmes will need to be implemented to manage the risk appropriately.
- Branches and other debris resulting from pruning processes should not be left below conductors or in areas where it will pose a risk to infrastructure.
- Debris shall not be burnt under any circumstances.
- Fires shall not be made for the purpose of chasing or disturbing indigenous fauna.
- Eskom encourages affected landowners and maintenance staff to participate in the Fire Protection Agency.

Risk of Electrocution:

- To prevent the risk of electrocution no structures are allowed in the 31 meters wide servitude area of the power lines.

Safety of landowners/ land rights users:

Security measures to safeguard the property and the landowner/ landuser are the following:

- Eskom needs to make an appointment with the affected landowner to maintain the line on his property.
- Only in case of an emergency, Eskom will have the right to enter the property at any hour.
- Communication between landowners and Eskom is of importance in case of emergency breakdowns.
- Security measures such as the usage of existing gates with Eskom locks are proposed.
- Eskom should compensate the landowner for any damage to the landowner's property.
- Security measures are provided in the Environmental Management Programme (EMPr) of the EIA Report.

In addition refer to the mitigation for impacts associated with fire breaks and servitude maintenance and the protocol for access.

2.4 IMPACTS THAT MAY RESULT FROM THE DECOMISSIONING AND CLOSURE PHASE

It is not envisaged that the power line will be decommissioned. This project is part of the future infrastructure to supply the Eskom Distribution network. Should this application not be approved, this can result in major disturbances in energy provision.

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

Should there be a need to decommission the power line then the following mitigation measures that may eliminate or reduce the potential impact are applicable:

- The power line will have to be physically removed which would entail the reversal of the construction process.
- The construction teams will ensure that all waste is removed from the sites and that they recycle the items that can be used again. Unusable waste steel and aluminium will be sold to scrap dealers for recycling at the Eskom stores.

- The disposal of materials will have to be at an appropriate landfill site licensed in terms of section 20 (b) of the National Environment Management Waste Act, 2008 (Act No 59 of 2008). A copy of the service agreement, to verify the disposal sites that will be accepting the waste, should be submitted to the Dept of Water Affairs.
- The route of the power line will have to be rehabilitated.
- Once the decommissioning is completed, the contractor has to obtain written consent from the relevant landowner that the construction site, construction areas, access routes, etc. are sufficiently and adequately rehabilitated to the landowner's satisfaction.

3. ENVIRONMENTAL IMPACT STATEMENT

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

3.1 No-go alternative (compulsory)

- It is suggested that to maintain the status quo is not the best option for the macro environment.
- This proposed project is part of the infrastructure to supply the Eskom Distribution grid with power.
- Should this application not be approved then supply will be unreliable and in future this can result in major disruptions of power supply to different areas at different times.
- The No-go option will not solve the current demand for electricity.

The positive impacts of the proposed project on the environment are as follows:

- Long-term, regional benefits of reliable power supply and the resultant socio-economic benefits.
    - Included in this is the fact that any infrastructure development as a secondary impact will ultimately positively influence the development of the SMME- sector through electricity provision.
    - On the opposite pole the lack thereof will most certainly be to the detriment of SMMEs, especially in rural developing areas, where the lack of, as well as inconsistent, infrastructure could seriously lead to the detriment of economic development directly impacting on social well-being.
- Potential reduction in crime as a result of short-term job creation during construction (providing farm safety and security measures are implemented)
- Possible local growth in the economy of the surroundings towns and others in the sub-region, and for local businesses depending on where the construction camp is.
- Economic benefits for contractors and other suppliers of goods and services.
- The project as proposed will ensure significant capital investment that will contribute to the economical growth of the area.
- Private business opportunities could be stimulated.

The No-Go development alternative could therefore not be considered the responsible way to manage the site.

3.2 Environmental impact statement

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 Plan, the expected negative impact could be mitigated to acceptable measures.

EVALUATION METHOD FOLLOWED

The nature and extent of expected negative impacts are described directly under the heading for each impact.

Below this description for each impact, a table has been designed to facilitate evaluation of the expected negative impact in terms of significance (intensity), duration, probability and significance after mitigation.
The numerical values used for "Impact Severity" (significance / intensity) relates to the potential severity of the proposed project on the specific environmental component without any mitigation and is being evaluated and rated on a scale from 0 to 4 where the following values apply :
0 = no impact
1= low impact
2 = medium impact
3 = significant impact
4 = severe impact
The duration of the expected negative impact is supplied as either "temporary" - 0-3 years (generally during construction) or "permanent". The probability that the expected negative impact would occur if not mitigated is rated as "low", "medium" or "high". The negative impacts are also evaluated in terms of the effectiveness with which it could be mitigated: "Severity of Impact after Mitigation" is rated on a scale from 0 to 4, with a severe impact after mitigation receiving a rating of 4 (and can therefore influence the viability of the project) and no impact after mitigation receiving a rating of 0.

Route Alternative 1

Evaluation of Impact and Evaluation of Mitigation Measures

Impact Description	Impact	Impact	Impact	Mitigation
	Impact Severity Degree	Duration	Probability	Severity of Impact After Mitigation
Risk of surface and ground water pollution	2	Permanent	Medium	1

Impact Description	Impact	Impact	Impact	Mitigation
	Impact Severity Degree	Duration	Probability	Severity of Impact After Mitigation
Impact on cultural heritage resources	2	Permanent	Low	0

0

Impact Description	Impact	Impact	Impact	Mitigation
	Impact Severity Degree	Duration	Probability	Severity of Impact After Mitigation
Impact on natural habitat	2	Permanent	Low	1

Impact Description	Impact	Impact	Impact	Mitigation
	Impact Severity Degree	Duration	Probability	Severity of Impact After Mitigation
Risk of Erosion	3	Permanent	High	1

Impact Description	Impact	Impact	Impact	Mitigation
	Impact Severity Degree	Duration	Probability	Severity of Impact After Mitigation
Visual impact (Change of character and atmosphere of the area)	2	Permanent	Low	1

Impact Description	Impact	Impact	Impact	Mitigation
	Impact Severity Degree	Duration	Probability	Severity of Impact After Mitigation
Impacts on safety and security	2	Temporary	High	1

Impact Description	**Impact**	**Impact**	**Impact**	**Mitigation**
	Impact Severity Degree	Duration	Probability	Severity of Impact After Mitigation
Impact of labourers	2	Temporary	High	1

Impact Description	**Impact**	**Impact**	**Impact**	**Mitigation**
	Impact Severity Degree	Duration	Probability	Severity of Impact After Mitigation
Impact on Birds	2	Permanent	Low	1

Impact Description	**Impact**	**Impact**	**Impact**	**Mitigation**
	Impact Severity Degree	Duration	Probability	Severity of Impact After Mitigation
Social Impact	2	Permanent	Medium	1

Impact Description	**Impact**	**Impact**	**Impact**	**Mitigation**
	Impact Severity Degree	Duration	Probability	Severity of Impact After Mitigation
Impact of Solid Waste	3	Temporary	Medium	0

Impact Description	**Impact**	**Impact**	**Impact**	**Mitigation**
	Impact Severity Degree	Duration	Probability	Severity of Impact After Mitigation
Loss of agricultural land	2	Temporary	Medium	1

Impact Description	**Impact**	**Impact**	**Impact**	**Mitigation**
	Impact Severity Degree	Duration	Probability	Severity of Impact After Mitigation
Impact of alien vegetation	3	Permanent	High	1

Impact Description	**Impact**	**Impact**	**Impact**	**Mitigation**
	Impact Severity Degree	Duration	Probability	Severity of Impact After Mitigation

Impact Description	Impact	Impact	Impact	Mitigation
Access to properties	2	Permanent	Medium	1

Route Alternative 2

Evaluation of Impact and Evaluation of Mitigation Measures

Impact Description	Impact	Impact	Impact	Mitigation
	Impact Severity Degree	Duration	Probability	Severity of Impact After Mitigation
Risk of surface and ground water pollution	2	Permanent	Medium	1

Impact Description	Impact	Impact	Impact	Mitigation
	Impact Severity Degree	Duration	Probability	Severity of Impact After Mitigation
Impact on cultural heritage resources	4	Permanent	High	4

0

Impact Description	Impact	Impact	Impact	Mitigation
	Impact Severity Degree	Duration	Probability	Severity of Impact After Mitigation
Impact on natural habitat	3	Permanent	Medium	2

Impact Description	Impact	Impact	Impact	Mitigation
	Impact Severity Degree	Duration	Probability	Severity of Impact After Mitigation
Risk of Erosion	4	Permanent	High	1

Impact Description	Impact	Impact	Impact	Mitigation
	Impact Severity Degree	Duration	Probability	Severity of Impact After Mitigation
Visual impact (Change of character and atmosphere of the area)	2	Permanent	Low	1

Impact Description	Impact	Impact	Impact	Mitigation
	Impact Severity Degree	Duration	Probability	Severity of Impact After Mitigation
Impacts on safety and security	2	Temporary	High	1

Impact Description	Impact	Impact	Impact	Mitigation

Impact Description	Impact	Impact	Impact	Mitigation
	Impact Severity Degree	Duration	Probability	Severity of Impact After Mitigation
Impact of labourers	2	Temporary	High	1

Impact Description	Impact	Impact	Impact	Mitigation
	Impact Severity Degree	Duration	Probability	Severity of Impact After Mitigation
Impact on Birds	3	Permanent	Low	1

Impact Description	Impact	Impact	Impact	Mitigation
	Impact Severity Degree	Duration	Probability	Severity of Impact After Mitigation
Social Impact	2	Permanent	Medium	1

Impact Description	Impact	Impact	Impact	Mitigation
	Impact Severity Degree	Duration	Probability	Severity of Impact After Mitigation
Impact of Solid Waste	3	Temporary	Medium	0

Impact Description	Impact	Impact	Impact	Mitigation
	Impact Severity Degree	Duration	Probability	Severity of Impact After Mitigation
Loss of agricultural land	2	Temporary	Medium	1

Impact Description	Impact	Impact	Impact	Mitigation
	Impact Severity Degree	Duration	Probability	Severity of Impact After Mitigation
Impact of alien vegetation	3	Permanent	High	1

Impact Description	Impact	Impact	Impact	Mitigation
	Impact Severity Degree	Duration	Probability	Severity of Impact After Mitigation
Access to properties	2	Permanent	Medium	1

No biophysical, social or cultural-historical environmental impact has been identified that is expected to result in significant costs to the environment should the proposed mitigation measures be implemented; therefore the environmental consultants (EAPs) recommend the construction of the project.

SECTION E. RECOMMENDATION OF PRACTITIONER

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

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

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

Ecological Sensitivity:

A number of mitigating actions where recommended and the proper implementation and management of these will ensure that impacts are reduced and are kept to acceptable levels. These measures include:

- Site specific measures in terms of ecology as identified by the ecologist, Wynand Vlok (Tel 082 200 5312) must be included in the contract with the Contractor and implemented by the Contractor during the construction phase.
- Large Sclerocarya birrea are present along the powerline corridor. Permits are needed for cutting or trimming.
- The presence of Balanites maughamii, Philenoptera violacea and Combretum imberbe should be confirmed.
- A walk down study is needed to confirm the presence/absence of all protected trees once the final route is demarcated (pegged). The protected trees must be mapped (GPS) and applications for trimming, cutting and removal must be acquired before the clearing of the servitude can commence.
- An ongoing management programme to mechanically control alien plant species that invade the disturbed soils around the newly erected pylons is recommended.
- The power line corridor should be inspected every year (before and after the summer rain season) for soil erosion and if found, to rehabilitate; to not use chemicals in the control of weeds; and to remove all left over construction materials, rubble etc. upon completion of the project.
- The mountainous areas/ koppies should be viewed as sensitive although not as "No-Go" zones. It is recommended to use wide spacing of pylons to limit the physical footprint on the actual ground.
- In addition, the placement of pylons around all drainage lines, streams and rivers must be confirmed to ensure it is outside the 100m zone for drainage lines and streams and the 1;100 year flood line for larger rivers.
- Having taken all aspects of the investigation into account the following line variant is recommended - **Alternative Route 1 for the Lebokwagomo - Dithabaneng line and Alternative 1 for the Dithabaneng - Dwaalkop line.** (Refer to map in specialist report on the ecological environment in Appendix D1.)

Heritage Resources:

The Phase I HIA study for the proposed Eskom Project revealed the presence of the following types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) in and near the Eskom Project Area, namely:

- The demolished village of Maneeng (next to Makurung village) holds at least eighty seven (87) graveyards and graves which are associated with a hundred and forty four (144) deceased individuals. Approximately ten of the graveyards in the demolished village of Maneeng (No's 78-87) occur near the north-western corner of the village of Makurung where Alternative 1 for the proposed 132kV power line between the Dithabaneng Substation and the proposed Dwaalkop Substation power line will run. Alternative 2 for this power line runs across the demolished village of Maneeng where the majority of graveyards are located. All the graveyards in Maneeng have been geo-referenced and mapped and their coordinates are indicated in the Heritage Impact report.
- A single grave occurs near Alternative 1 and Alternative 2 for the proposed new 132kV Lebowa Dithabaneng power line. The single grave (G01) next to the proposed 132kV power line between the Lebowa Substation and the Dithabaneg Substation is situated at a safe distance from Alternative 01 and Alternative 02 where it will not be affected by these two options. However, the construction of Alternative 02 for the proposed 132kV Dithabaneng Substation to the proposed Dwaalkop Substation may affect a number of graveyards if this alternative is used.

Mitigating the graveyards and grave

If any of the graveyards may be affected by the proposed Eskom Project the following mitigation measures have to be applied:

- If any graveyard is going to be affected directly (e.g. a pylon must be constructed on top of any graveyard) such a graveyard has to be exhumed and relocated. The exhumation of human remains and the relocation of graveyards are regulated by various laws, regulations and administrative procedures. This task is undertaken by forensic archaeologists or by reputed undertakers who are acquainted with the administrative procedures and relevant legislation that have to be adhered to whenever human remains are exhumed and relocated. This process also includes social consultation with a 60 days statutory notice period for graves older than sixty years. Permission for the exhumation and relocation of human remains have to be obtained from the descendants of the deceased (if known), the National Department of Health, the Provincial Department of Health, the Premier of the Province and the local police.

Recommendations

- **Alternative 1** and Alternative 2 for the proposed 132kV power line between the Lebowa Substation and the Dithabaneng Substation are situated next to G01 which needs not to be affected by these alternatives. A 'safe' corridor of at least 20m must be maintained between the power line and the grave. The grave must be demarcated with a fence or with red cautionary tape and must be avoided by contractors when the power line is constructed. If a permanent fence is erected around the grave it must be fitted with a gate to ensure access to family members or friends who wished to visit the deceased.
- **Alternative 1** is recommended for the proposed 132kV power line between the Dithabaneng Substation and the proposed Dwaalkop Substation as this alternative will not affect any of the graveyards in the demolished Maneeng village.
- If any heritage resources of significance is exposed during construction the South African Heritage Resources Authority (SAHRA) should be notified immediately, all development activities must be stopped and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notify in order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorisation (permits) from SAHRA to conduct the mitigation measures.

Bird Impact:

Section 1: The new 132kV power line between the existing Lebowakgomo substation and the new Dithabaneng substation.

The construction of the new proposed Lebowa-Dithabaneng 132kV line poses a limited threat to the birds occurring in the vicinity of the new infrastructure. The power line poses a **low** collision risk, mostly to non-Red Data species and a **medium** electrocution risk, in particular to vultures. The habitat transformation will have a **low-medium** impact, and should only affect non-Red Data species at a local level, provided the large trees are not extensively destroyed. **Alternative 1** emerged as the first choice from a bird impact perspective.

Section 2: The new 132kV power line between the Dithabaneng substation and the new Dwaalkop substation.

The construction of the new proposed Dithabaneng-Dwaalkop 132kV line poses a limited threat to the birds occurring in the vicinity of the new infrastructure. The power line poses a **low** collision risk, mostly to non-Red Data species and a **medium** electrocution risk, in particular to vultures. The habitat transformation will have a **low** impact, and should only affect non-Red Data species at a local level, provided the large trees are not extensively destroyed. **Alternative 1** emerged as the first choice from a bird impact perspective.

Section 3: The 132kV Loop-in-Loop-out (LiLo) line from the Middelpunt- Dithabaneng 132kV line to the proposed Boynton substation.

The construction of the new proposed Loop-in Loop-out 132 kV lines from Middelpunt-Dithabaneng 132 kV power line to the proposed Boynton Substation will pose a limited threat to the birds occurring in the vicinity of the new infrastructure. The power line poses a **low** collision risk, mostly to non-Red Data species and a **medium** electrocution risk, in particular to vultures. The habitat transformation will have a **low** impact, and should only affect non-Red Data species at a local level, provided the large trees are not extensively destroyed. The proposed construction of the new substation should have a **low** habitat transformation impact, given the extent of habitat degradation already evident in the area.

Recommendations

- Power lines: The spans that cross major drainage lines and skirt dams should be marked with Bird Flight Diverters on the earth wire of the line, five metres apart, alternating black and white.
- Trees: The removal of large trees should be avoided as much as possible.
- Poles: The poles should be fitted with bird perches on top of the poles to draw birds, particularly vultures, away from the potentially risky insulators.

CONCLUSION

Alternative routes have been investigated for the project. From a heritage, ecological, bird as well as palaeontological impact viewpoint, Route Alternative 1 is preferred for Section 1 & Section 2 of the project. The final decision between Route 1 or 2 should be made on the accumulative weight of other parameters such as feedback from public participation, land tenure issues, construction costs, etc. **Currently, Alternative 1 is preferred** as the final route alignment due to all the investigations favouring alternative 1.

The **affected properties** for the **proposed Alternative 1** are on the farms Voorspoed 458 KS (Remainder), Rooiboklaagte 112 KS Ptn 0, Voorspoed 458 KS (Ptns 11, 15, 16, 23, 17, 9 and 4), Locatie van Mphahlele 457 KS (Remainder) in the Lepelle-Nkumpi Local Municipality in the Limpopo Province.

Is an EMPr attached?	YES	NO

The EMPr must be attached as Appendix F.