

Basic Assessment Report for the Proposed Gumeni to Bosloop 132kV Powerline which is Approximately 26km in Length in Machadadorp, Mpumalanga Province



January 2013

A REPORT FOR:
Eskom Distribution Northern Region



ENGINEERS AND ENVIRONMENTAL CONSULTANTS

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DOCUMENT DESCRIPTION

Client:

Eskom Distribution Northern Region

Report Name:

Basic Assessment Report for the Proposed Gumeni to Bosloop 132kV Powerline which is Approximately 26km in Length in Machadadorp, Mpumalanga Province

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Date:

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BASIC ASSESSMENT REPORT



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

(For official use only)

File Reference Number:

Application Number:

Date Received:

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 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.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?

YES

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 detail¹:

1.1. Project Description

Eskom Distribution Northern Region has identified that the 132kV ring supply from Witkloof substation is experiencing low voltages due to the loss of either Witkloof Holnek 132kV line or Witkloof Wintershoek 132kV line voltages during the transmission and distribution power. To rectify the status quo, Eskom is proposing to construct a 26 km 132kV kingbird line from Bosloop Substation to Gumeni Main Transmission Station (MTS) and a 132kV feeder bay at Gumeni MTS and Bosloop Substation. The proposed powerline will require self supporting/pylon structures for the distribution of power and the typical structure which Eskom is proposing to utilise for the project is a monopole structure which is illustrated by Figure 1 below.



Figure 1: Illustration of the 132kV Pylon Structures (source Eskom)

1.2. Technical Details of the Project

(A) Width, Length of Structure and Material Used

The footprint for the planted self-supporting mono-pole structures is 1,2m x 1,2m. The footprint for guyed monopole in-line strain is 0,95m x 0,65m with 4 x diagonal stays positioned up to 17,0m from the structure centre. The footprint for guyed mono-pole angle strain is 0,95m x 0,65m with 5 - 7 x bi-sector and line stays positioned up to 22,0m from the structure centre. The nominal lengths for the mono-pole structures vary between 18,0m - 24,0m. Normally 80µm protective zinc coating is required for Eskom installations, but a 120µm can be specified for special conditions.

(B) Access Roads

Existing tar and dirt roads will be used to gain access during the construction and operational phase (maintenance purposes) of the project.

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.

(C) The Depth of the Foundation

The self supporting mono-pole structures will be planted at approximately 3m deep. All other foundation excavations are 550mm deep. Stays are installed 1.75m deep.

(D) Materials Used for Foundation

1:10 soil/cement mixture is compacted for backfilling (Use imported soil where poor soil conditions are applicable). For self supporting mono-pole structures; 25MPa is the reinforced concrete pedestal foundations for in-line and angle strain mono-pole structures.



Figure 2: Pylon Excavation Foundation (source Eskom)

1.3. Location of the Study Area

The study area is located in the Northern Mpumalanga lowveld region. The powerline being considered for the project falls within rural areas largely characterised by intensive commercial agricultural and pastoral land uses. The area is situated close to a small mining town of Machadodorp approximately 17km to the north whilst Nelspruit is situated approximately 75km to the northwest (refer to Figure3) . There are two main roads that allow general access to the study area and these are R541 and the R36, otherwise farm entrances and dirt roads can be used where permissible.



Figure 3 Location of the Study Area (Also see Appendix A)

1.4 Description of the Receiving Environment

(A) Climate

The monthly distribution of average daily maximum temperatures shows that the average midday temperatures for Mpumalanga range from 20.6°C in June to 26.5°C in February (Graph A) and is the coldest during July 7.1°C during the night (Graph B). Annual Rainfall averages at 610mm, with most rainfall occurring during mid summer (Graph C) (SA Explore 2012).

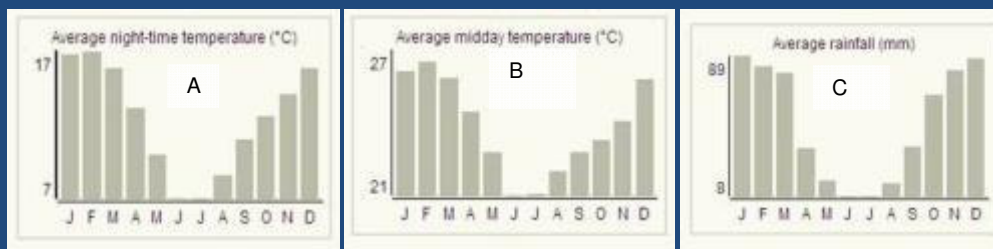


Figure 4: Monthly Rainfall and Temperature (SA Explorer 2012)

(B) Topography and Visual Characteristics

The area is currently characterised by intense agricultural practices, and therefore there is not much development from a human. However, the western and south-western regions of Bosloop consist of moderate undulating valleys and hills around the Komati/Bankspruit River Catchment areas.



Figure 5 Topography of the Study Area

(C) Land Use

The proposed powerline falls within rural areas, largely characterised by intensive commercial agricultural and pastoral land uses. The area is situated in the small mining town of Machadadorp approximately 75km to the north west of Nelspruit. There are also heavy industry land uses which take place in the vicinity such as Assmang Machadadorp's Dwarsrivier Chrome mine and processing plants.

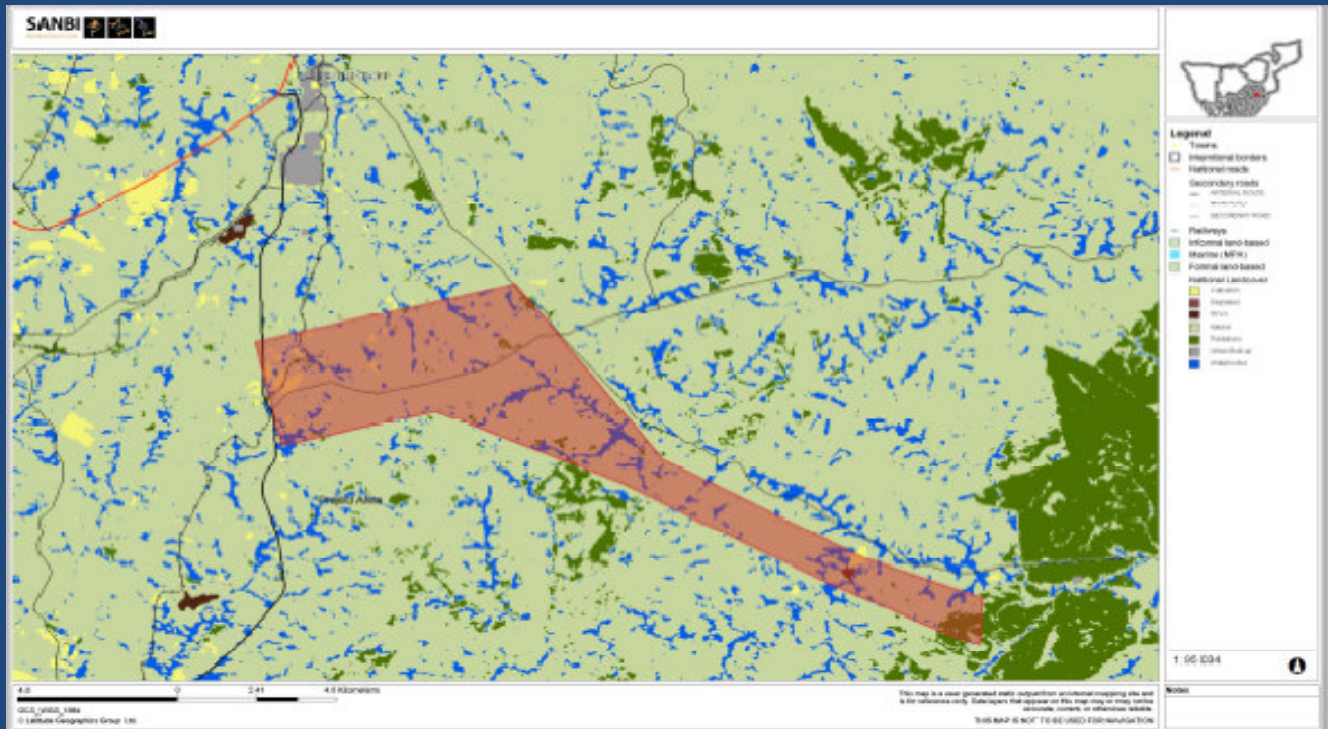


Figure 6 Land Cover Map of the Study Area (SANBI BGIS 2012)

(D) Geology and Soil

The geology of the study site can be described as sandstone, mudstone and basalt, with biotite granite outcroppings around koppies. Soils classes are categorised as follows: Red and yellow soils with low to medium base status; Greyish, sandy soils; and soils with minimal development, usually shallow, on hard or weathering rock, with or without intermittent diverse soils. In general, the low base status, restricted soil depth, excessive or imperfect drainage status of these soils implies high erodibility and sensitivity to change. Sources of organic material loading are related to alien invasive vegetation and land-use disturbance pressures.

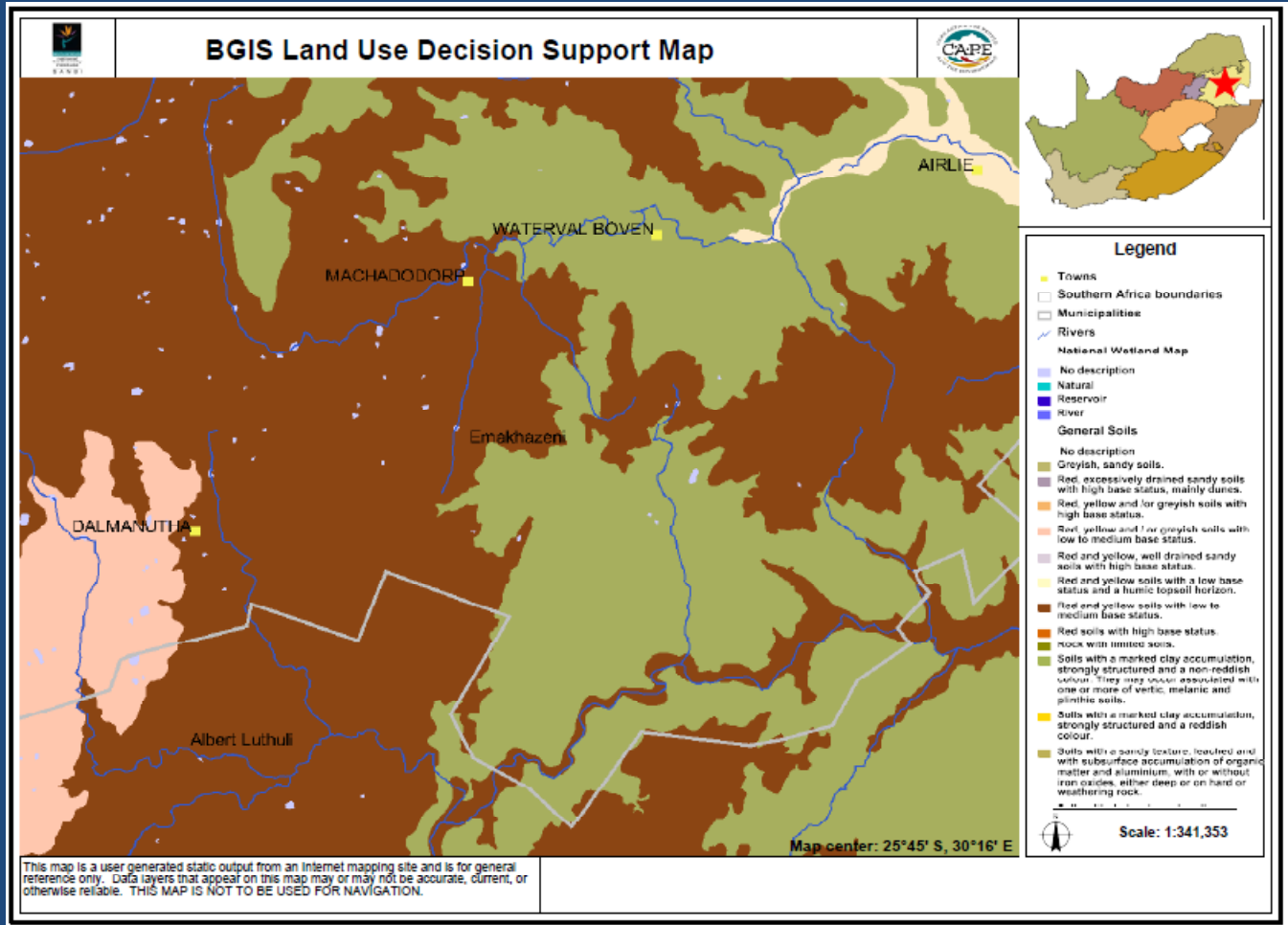


Figure 7: Geology and Soils Map for the study area (SANBI BGIS 2011)

(E) Aquatic Features

The study area falls within the Inkomati Water Management Area, ecoregion 4.01 – ecoregions with high altitude, moderate to high relief, greater variation in mean annual temperature (12-22°C) and mean annual rainfall (600 to 1 200 mm) and grassland vegetation types. The geology of these ecoregions are diverse, with some conglomerates and gneiss, and patches of sometimes leached mature soils. The Leeuspruit River and Bankspruit River are the major rivers found within the proposed development footprint, which are tributaries of the Elands River Catchment (the major tributary of the Crocodile River Catchment). Agriculture and forestry are the dominant land-use activities. In-stream habitat modifications are the results of inundation by weirs as well as water quality deterioration due to trout farming activities and urban development (Machadodorp). Encroachment by alien trees, especially wattles, poplars and eucalypts also account for riparian habitat modification (RHP 2001).

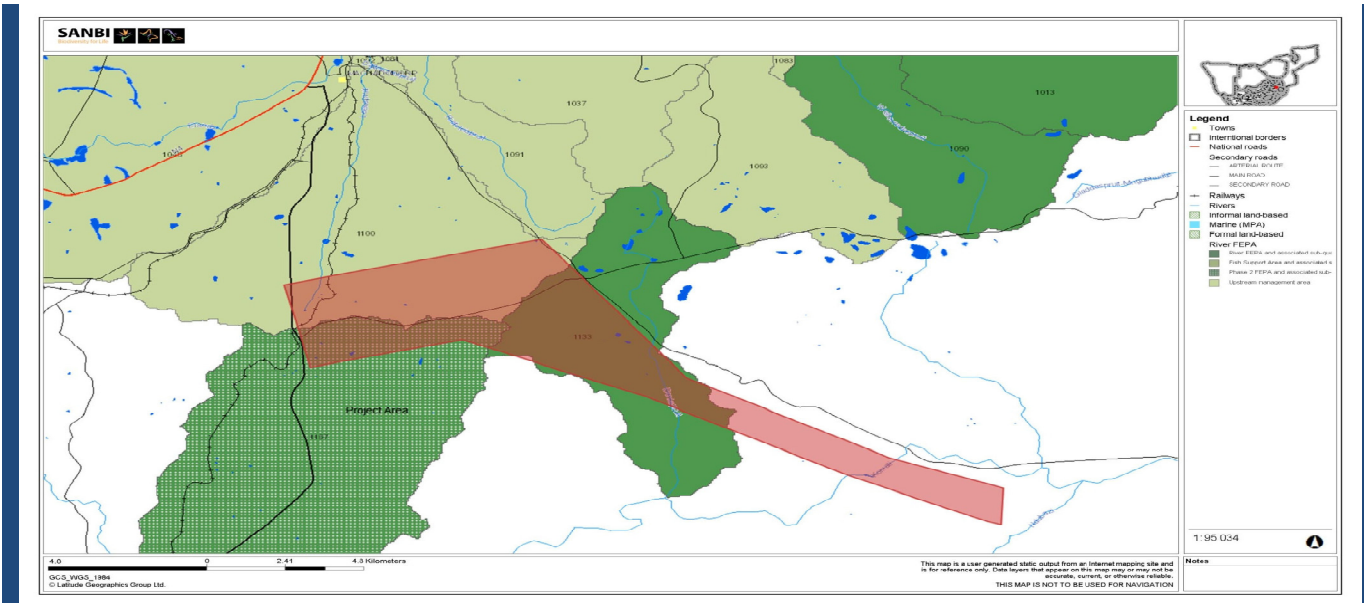


Figure 8: National Freshwater Ecosystem Priority Areas of the study area (SANBI BGIS 2012)

(F) Wetlands

The proposed alignments bisect several seasonally inundated as well as permanent palustrine valley bottom wetlands. The wetlands are dominated by hygrophilous grass and sedge species. The wetlands within the study area are heavily impacted on by livestock grazing and drinking activities. Extensive overgrazing and trampling of the hygrophilous grass and sedge vegetation within the valley bottom wetlands as well as hillslope seepage wetlands results in the dominance of the dwarf shrub *Seriphium plumosum*. It has been shown that heavy grazing has a detrimental effect on the hydrological state of wetlands, these include: disruption of flow patterns by paths, gully erosion, silting up of pools, encroachment of marginal vegetation into the wetland area, etc. Soil compaction reduces infiltration, which results in higher surface runoff and more rapid loss of water from the catchment. With increased runoff, stream-flow response is more rapid, flooding increases and recharge of groundwater storage falls with the result that baseflow yields also fall. This can increase the risk of soil loss through surface wash and rill erosion (Kotze & Breen 1994). Extensive soil erosion was observed along the valley bottom wetlands. Grasslands with elevated moisture levels or seasonally and temporary inundated hillslope seepage wetlands were observed on the plateaus of the grassy mountains as well as hillslope surrounding the alignments.



Figure 9: Palustrine Wetlands

Present in the lower-lying valley bottoms of the study area is an azonal vegetation unit known as Eastern Temperate Freshwater Wetlands (AZf3; Mucina et al. 2006). This vegetation unit is embedded within the Grassland Biome and can best be described as wetland vegetation surrounding bodies of water and periodically flooded areas. It occurs in the Northern Cape, Eastern Cape, Free State, North-West, Gauteng, Mpumalanga and KwaZulu-Natal Provinces as well as in neighbouring Lesotho and Swaziland around water bodies with stagnant water (lakes, pans periodically flooded vleis, edges of calmly flowing rivers) with altitudes ranging from 750–2 000 m. The percentage of area of this vegetation unit that is protected is 4.6% (NSBA) with a conservation target of 24% (NSBA) with 85.1% (NSBA)

remaining intact it is classified as least threatened but poorly protected and is conserved in the Blesbokspruit (Ramsar site), Marievale, Olifantsvlei, Seekoeivlei (a Ramsar site), and others. This unit is found embedded within the Grassland Biome where it occurs in the Northern Cape, Eastern Cape, Free State, North-West, Gauteng, Mpumalanga and KwaZulu-Natal Provinces as well as in neighboring Lesotho and Swaziland around water bodies with stagnant water (lakes, pans, periodically flooded vleis, edges of calmly flowing rivers) with altitudes ranging from 750–2 000 m.

The wetlands vegetation primarily comprises grasses and sedges with very few trees and no shrubs present. Vegetation covers 85 % of the total land cover with bare soil comprising ~15% of the total cover. Soils are humus-rich black turf. The topography or slope is between 1~4° and drainage is good along the channelled and unchannelled valley bottoms (above the dams) but poor in the seasonally inundated depressions with conditions becoming moister towards the centre of the wetland. Degraded sections of hillslope seepage wetlands are dominated dense stands of *Hyparrhenia hirta*, *Hyparrhenia tamba*, *Bidens pilosa*, *Tagetes minuta*, and *Seriphium plumosum*.

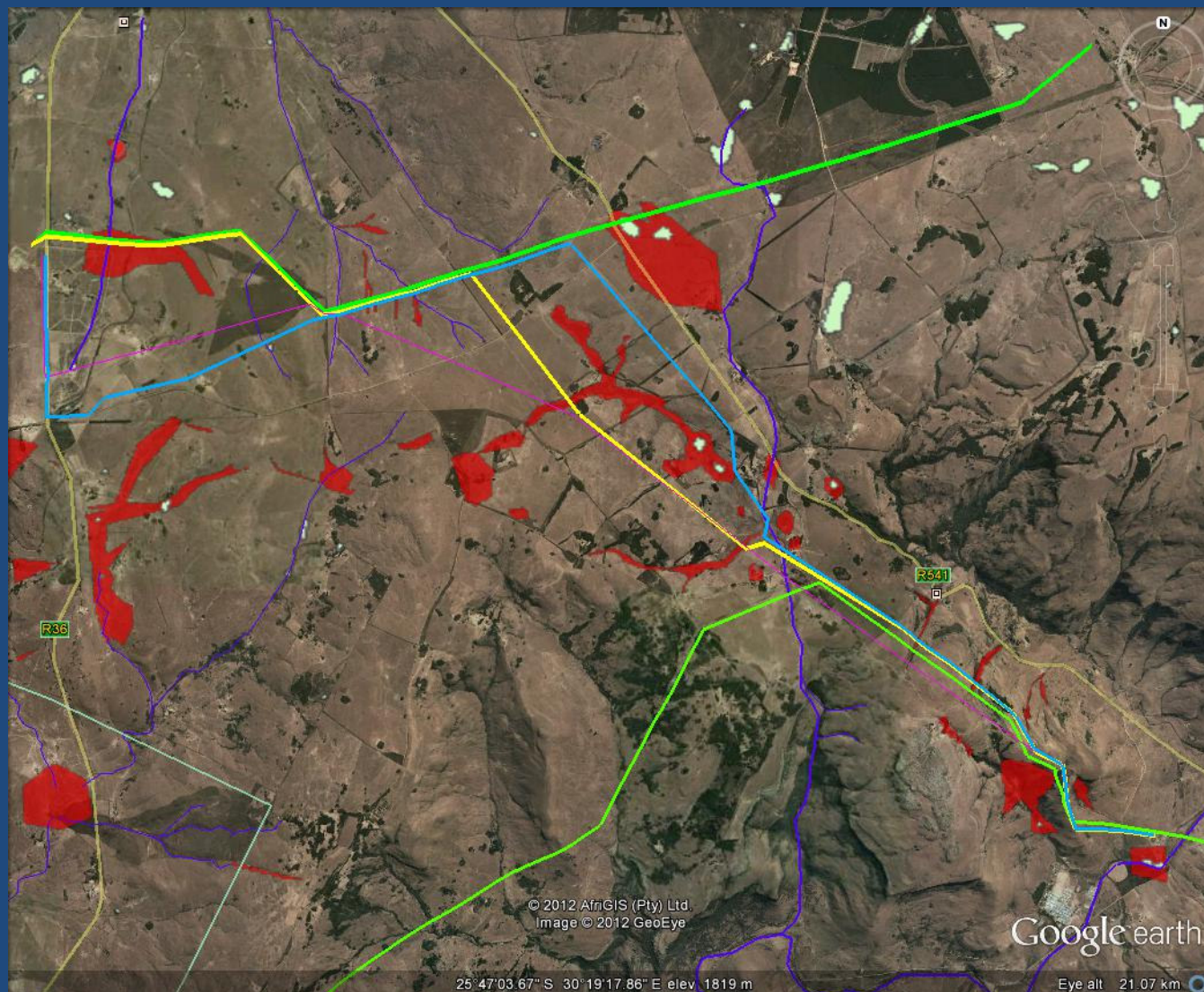


Figure 10: Surface Drainage Lines (blue), Wetland Polygons (red) Potentially Affected by the Proposed Development

(G) Fauna and Flora

The general vegetation type within the region falls within the Grassland biome. The proposed development area and its surroundings are dominated by the Mesic Highveld Grassland, as well as KaNgwane Montane Grassland and Lyden Motane Grassland. Endangered Eastern Highveld Grassland is found to the west and east of the study area, but not in the proposed development area (only the Lydenburg Montane Grassland is in the development area and is classed as Vulnerable and poorly protected).

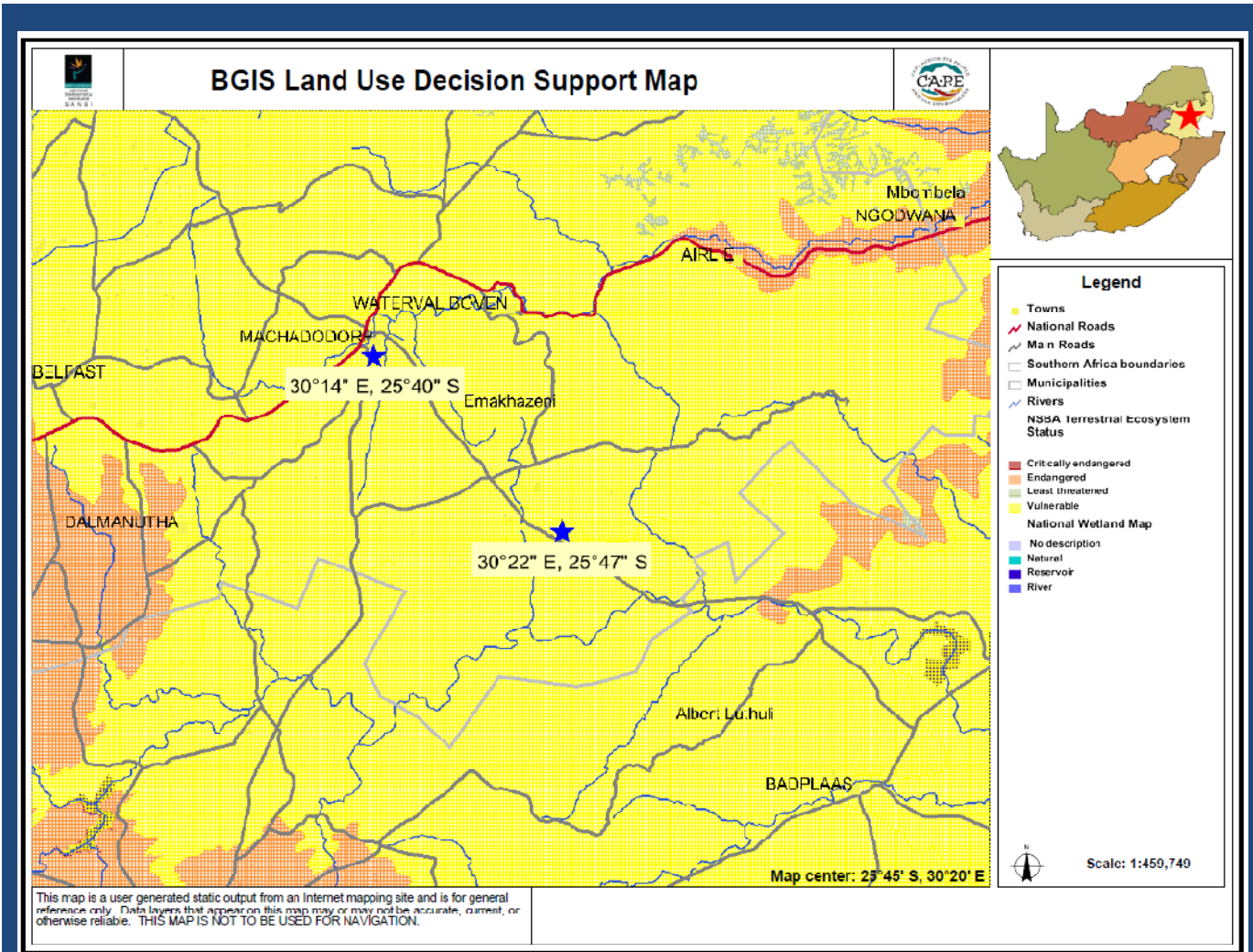


Figure 11: National Spatial Biodiversity Assessment Map of the study Area (SANBI BGIS, 2012)

Vegetation structure is generally accepted to be more critical in determining faunal habitat than actual plant composition. Therefore, the description of vegetation presented in this study concentrates on factors relevant to faunal species abundance and distribution, and does not give an exhaustive list of plant species which occur in the study area. No comprehensive vegetation or faunal surveys were conducted due to time and financial constraints and faunal species lists provided in the Appendix are of species most likely to occur on the site using habitat as an indicator of species presence. Vegetation composition of the three alignments consists of Lydenburg Montane Grassland (Gm 18) on the northern portions of the alignment and KaNgwane Montane Grassland (Gm 16) on the southern portions (east of the Bankspruit) as well as Eastern Temperate Freshwater Wetlands (AZf 3) within the valley bottom wetlands (Mucina & Rutherford 2006).

Lydenburg Montane Grassland is classified as Vulnerable. The conservation target is 27%, with 2.4% formally protected within reserves (Gustav Klingbiel, Makobulaan, Mt Anderson, Ohrigstad Dam, Sterkspruit and Verlorenvlei) as well as in a number of private conservation areas (Buffelskoof, Crane Creek, mc, In-de-Diepte, Kaalboom, Kalmoesfontein, Mbesan, Mondi Indigenous Forest, Mt Sheba: Waterval etc.). The level of transformation is relatively high at 23% with mostly alien plantations (20%) and cultivated lands (2%). Erosion potential very low (74%) and low (12%).

The southern portion of the proposed alignments to the east and south of the Blankspruit and immediately to the north of the Komati River is situated within the KaNgwane Montane Grassland (Mucina & Rutherford 2006). Previously classified as Piet Retief Sourveld (VT 63) (Acocks 1953) or North-eastern Mountain Grassland (LR 43) (Low & Rebelo 1996).

Vulnerable. The conservation target is 27% with only 0.4% protected within any formally proclaimed nature reserves (Malalotja, Nootgedacht Dam and Songimvelo). A number of private conservation areas protect small patches of this unit. It is well suited for afforestation and 30% has already converted to plantations of alien trees. A further 6% is under cultivation. Erosion potential very low (55%) and low (7%).



Figure 12: Lydenburg Montane Grassland (Gm 18)



Figure 13: KaNgwane Montane Grassland (Gm 16)

Species observed within the foot-slopes of a diabase or quartzite rock outcrop situated on the eastern slopes of a grassland hill (to the east of Gumeni substation) situated within the Lydenburg Montane Grassland vegetation unit included: A: Several Poison Bulbs *Boophone disticha* which are currently Listed as 'Declining' mainly due to unsustainable harvesting of the plants for the traditional medicinal practices*; B: Several Fire-ball Lilies (*Scadoxus puniceus*) were observed within the broken rocky areas as well as amongst the archaeological ruins ; C: An unidentified *Knihofia* sp. was observed within the mid and lower slopes of the rocky hill in protected areas with an elevated soil moisture level. It was not present within the adjacent valley bottom wetland. Photographs of specimen have been sent to SANBI for possible identification. The current alignment should be shifted away from this rocky hillslope.



Figure 14: A Bulbs Boophone distichta B: Fire-ball Lilies (Scadoxus puniceus) C: An unidentified Kniphofia sp**

- **Red Data Plants**

Suitable habitat occurs within the moist rocky hillslopes for several Red Listed plant species including several terrestrial orchids including species of Eulophia, Habenaria, Disa, Scizochilus, Branchycorythis, Brownlea and Dispersis. One red listed “Declining” plant species was observed within the rocky hillslopes adjacent to alignment1. As a precautionary measure a suitably qualified grassland specialist should conduct a thorough walk through all primary grasslands (Lydenburg and KaNgwane Montane Grasslands) especially any rocky hillslopes (diabase or quartzitic) or major outcrops occurring along the selected alignment as well as tower footprints; during the appropriate flowering/growing season for the majority of threatened plant species (November-March).

(H) Avifauna

- **Bird Micro Habitat**

Is important to understand the habitats available to birds at a smaller spatial scale, i.e. micro habitats. Micro habitats are shaped by factors other than vegetation, such as topography, land use, food sources and man-made factors. Investigation of this study area revealed the some of the following bird micro habitats.

Arable and/or cultivated lands

Arable or cultivated lands can represent a significant feeding areas for many bird species in any landscape for the following reasons: through opening up the soil surface, land preparation makes many insects, seeds, bulbs and other food sources readily accessible to birds and other predators; the crop or pasture plants cultivated are often eaten themselves by birds, or attract insects which are in turn eaten by birds; during the dry season arable lands often represent the only green or attractive food sources in an otherwise dry landscape. Arable lands exist sparsely in this study area, mainly in the form of maize or “mielie” fields. Relevant bird species that may be attracted to these areas include most importantly the Blue Crane, Southern Bald Ibis, Abdim’s Stork and White Stork.

Open Grasslands

Grasslands represent a significant foraging and/or hunting area for many bird species. The more prevalent vegetation types present both represent part of the Grassland Biome, and therefore this micro-habitat was found to be the most prolific habitat on the site, albeit in varying forms of transformation. Pristine, healthy grasslands were observed in the more isolated parts of the site while grassland appeared to be somewhat disturbed, especially from grazing of cattle, and human infrastructure. Important bird species that may be found in the grassland areas of the study site are: Blue Crane, Grey-crowned Crane, Secretarybird, Southern Bald Ibis, Denham’s Bustard, Whitebellied and Blue Korhaans, and White Stork. The grassland patches are also a favourite foraging area for game birds such as

francolins and Helmeted Guinea fowl, as well as being hunting habitat for raptors such as Martial Eagle, African Marsh Harrier, Lesser Kestrel and Black-shouldered kite.

Dams

Dams have become important attractants to various bird species in the South Africa landscape. Various waterfowl, such as Spur-winged geese, Egyptian geese, and numerous duck species, may frequent these areas and are vulnerable to collision with power lines. More importantly, Blue Cranes use dams to roost in communally, and Flamingos may use these areas as stop over points while moving between larger water bodies. Various Storks may also frequent these water bodies. Of particular concern are the Blue Cranes which regularly fly at dusk and in low light, when electrical infrastructure may be more difficult for them to see.

Rivers or drainage lines

Rivers in their true form represent important habitat for many species, including Black Stork, Yellow-billed Stork, Saddle-billed Stork, Ducks, Geese and a variety of other water birds. The wooded riparian habitat alongside a river may provide habitat for various species such as the Hamerkop, African Darter, various cormorants, kingfishers, bee-eaters, robinchats and numerous smaller species. Slow flowing sections of river with overhanging vegetation supply habitat for African Finfoot, while rivers also represent feeding areas for fish eating raptors such as the African Fish Eagle. Sandbanks associated with large rivers provide habitat for various wading species including, Lapwings, Plovers, Stilts, and Sandpipers. Rivers and drainage lines also represent important flight paths for many species.

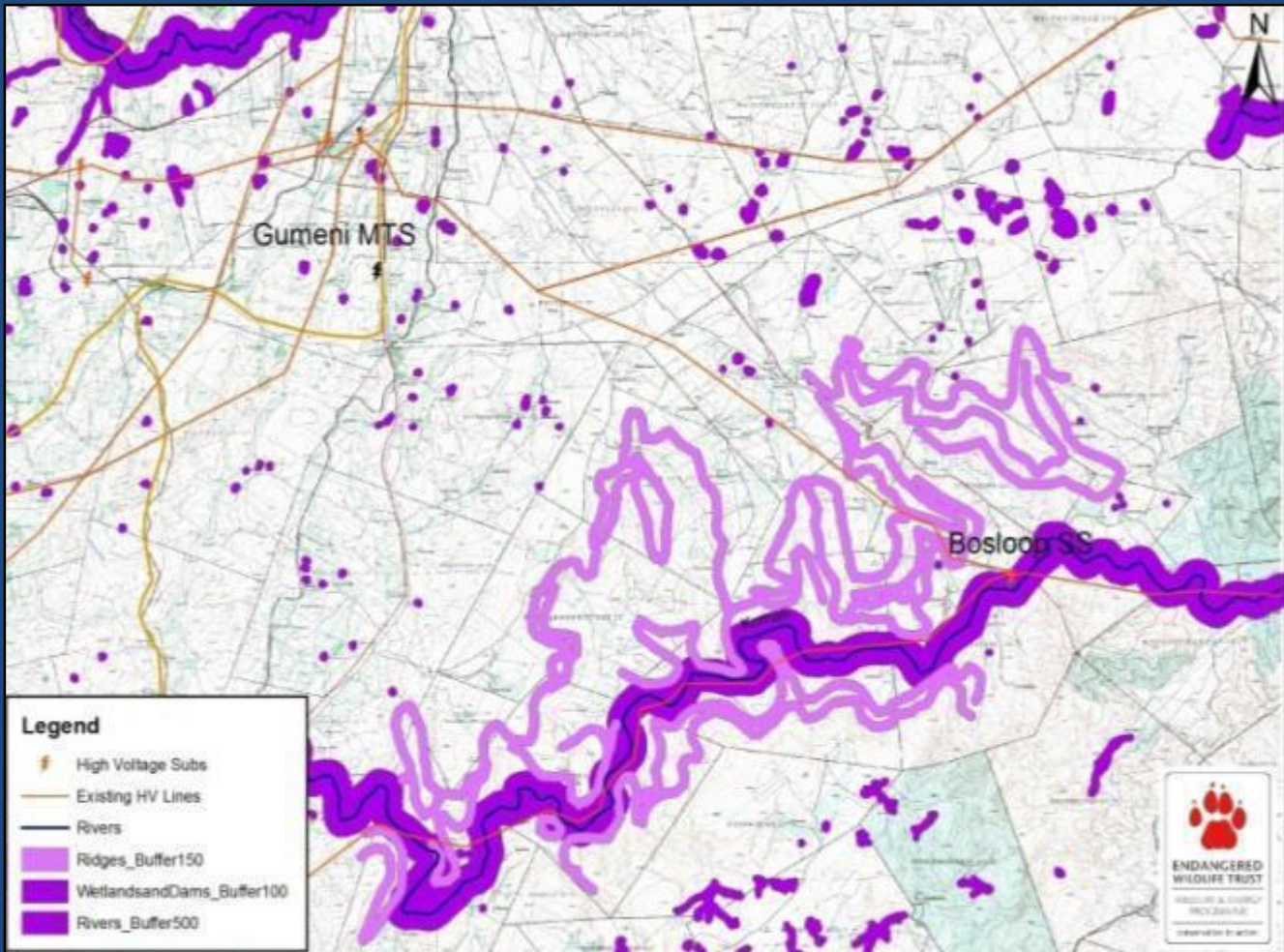


Figure 15: Sensitive Areas of the Study Site, Associated with Dams, Wetlands, Ridges and Rivers

• **Relevant Bird Populations**

Southern African Bird Atlas Project 1

The primary data source used to determine the distribution and abundance of bird species in the study area was the Southern African Bird Atlas Project data (Harrison et al, 1997). This data was collected over an 11 year period between 1986 and 1997. Although it is now quite old, it remains the best long term data set on bird distribution and abundance available to us at present. This data was collected on the

basis of quarter degree squares, which is also a relatively large spatial scale. The proposed line options pass through and/or alongside four quarter degree squares (QDGS's), 2530CA, 2530CC, 2530CD and 2530CB. However, the majority of the project area falls within 2530CD. The species recorded in the relevant quarter degree squares could have been recorded anywhere within these squares and not necessarily in the exact study area for the proposed developments. It does however provide a good indication of what could be found in the study area.

Across all squares a total of 32 Red Data species were recorded, comprising 3 Critically Endangered, 1 Endangered, 12 Vulnerable and 16 Near-threatened. The White Stork and Abdim's Stork, which are not listed, but are protected internationally through the Bonn Convention on Migratory species, were also recorded. The most important of these species for this study are the Wattled Crane, Cape Vulture, African Marsh-Harrier, Martial Eagle, African-Crowned Eagle, Grey-crowned Crane, Blue Crane, Denham's Bustard, White-bellied Korhaan, Southern Bald Ibis, Secretarybird, and White Stork. These species are all reasonably abundant in the area and/or are hugely vulnerable to collision with overhead power lines in South Africa. These species are thus the main focus of most of this study, and are added to the Focal Species List discussed below. Two of the Critically Endangered species (White-winged Fluff-tail and Rudd's lark), are not a focus of this study as the proposed power line is likely to have little, to no affect on them. Furthermore, the Saddle-billed Stork, is not included as a focal species, due to its low abundance (i.e. 2% report rate in only one QDGS). Additionally, mitigation measures considered for the other Stork Species will also apply to this species.

(I) – Heritage

The proposed power lines will run through a Mountainous area which forms part of the escarpment. The area from Badplaas towards Lydenburg is well known for the hundreds of archaeological sites from the Late Iron Age. These sites all have circular stone walls as well as terraces at the larger sites. The sites are associated with the so called Khoni people. Originally they were Ndebele people who eventually under Pedi rule became Sotho speaking. During the visit it was decided to reroute the first section of option 1 to follow the existing route of the Gumeni Nkomati line. This will shorten the line and it will run parallel to existing lines.



Figure 16: Stone wall identified in the study area

(J)- Visual

The visual impact assessment (VIA) evaluates the potential visual impact of the planned infrastructure which is the establishment of a new 132Kv line between the Gumeni and Bosloop substations. Three alignments are being considered by Eskom and will be evaluated during the VIA process to determine the best environmentally practicable site. The planned infrastructure will have certain visual characteristics associated with it. These elements will express themselves in terms of form, shape, line, colour, and to a lesser extent, texture. An understanding of this visual character will provide an appreciation of how various mine elements will be seen in the landscape.

There are numerous locations in the vicinity of the planned infrastructure that will be visually impacted to various levels. For the purposes of the VIA, a number of sites within key sectors of the planned infrastructure boundaries were selected as representative key viewing locations. These sites were selected with reference to field assessment, aerial photograph and view-shed analysis to determine the visibility of the planned infrastructure. Whilst there will be some variation in the impacts on specific viewing locations, an overall

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assessment of the visual impact on the selected locations will be representative for the majority of views experienced.

Visibility

For a visual impact to be experienced, landscape alterations resulting from the project need to be visible. Visibility of the planned infrastructure from adjoining view locations was determined by viewing into the planned infrastructure boundaries from a range of potential viewpoints. This was further assisted through the production of computer generated visible area maps (i.e. view-shed maps). The view-shed defines the extent to which the property is visible to the surrounding areas. A Digital Elevation Model (DEM) was generated making use of 5 meter contours for the planned infrastructure area. Existing structures and vegetation was not considered during the view-shed analysis.

Visual Sensitivity

The visual sensitivity of various viewing areas was determined by review of aerial photography, plans of the planned infrastructure, view-shed maps and topographic plans of the surrounding areas. This included the consideration of land use, viewing distances and the general level of screening available from topography, buildings and vegetation. The assigned sensitivities within each sector were also evaluated based on field study and other study data.

Visual Modification

The visual modification of the planned infrastructure on external viewpoints is illustrated in a number of photos taken from various key viewpoints within key sectors of the view-shed around the planned infrastructure boundary.

Landscape Character

The landscape setting can be defined in terms topography, vegetation, hydrology and land use features. These elements define the existing visual character of the landscape with which the planned infrastructure interacts. The planned infrastructure and surrounding areas comprise the following topographical features and landscape units with varying levels landscape quality (flat areas, low hills low and deep valleys). The vegetation communities are not very pronounced within the project area and the vegetation is dominated by large natural grassland areas. It includes bush land, thicket, bush clumps, high fynbos and grassland



Figure 17: Topography and Vegetation

1.5 Environmental Legal Requirements for the Proposed Project

A. EIA Regulations 2010

The Basic Assessment process is prescribed by the Environmental Impact Assessment Regulations (August 2010), as a pre-requisite to obtaining a decision from the Department of Environmental Affairs (DEA) in terms of the National Environmental Management Act (Act 107 of 1998)(as amended) for the activities that may detrimentally affect the environment. The relevant activities potentially requiring authorisation are listed in table 1 below.

Table 1 Listed Activity

GOVERNMENT NOTICE	ACTIVITY NO	ACTIVITY DESCRIPTION
544, 18 June 2010	10	The construction of facilities or infrastructure for the transmission and distribution of electricity (i) Outside urban areas or industrial complexes within the capacity of more than 33 kilovolts but less than 275 kilovolts.

B. National Water Act (Act 36 of 1998) - Section 21 Water Use Authorisations

Not applicable

C. National Environmental Management: Waste Act (Act 59 Of 2008)

No applicable

D. National Heritage Resources Act (Act 25 of 1999)

Not Applicable

E. Mineral and Petroleum Resources Development Act (MPRDA) – Act 28 of 2002

No applicable

1. 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.

Three route alignment options were considered by Eskom Distribution and were evaluated during the environmental assessment process to determine the best environmentally practicable alignment (refer to Figure 17 below).

Option 1 is indicated in an Aqua colour, the alignment runs in a southerly direction along the R36 for 2.44km within transformed grassland road reserves. Bisects several valley bottom wetlands and associated moist grasslands/hillslope seeps, the Bankspruit and the Skurweberg. It follows an existing line over the Skurweberg until the Bosloop Substation as well as within close proximity of an access road up the Skurweberg.

Option 2 is indicated in Yellow colour, in Figure 18 below, this alignment runs to the east of Gumeni substation and follows an existing line for approximately 7.2km. The proposed line bisects a patch of moist rocky hillslope grassland were several red listed *Boopkone disticha* were observed from the existing line option 2 diverts in a southerly direction through open grasslands and seasonal wetlands within the valley bottoms. The line option bisects large areas of open grassland as well as several valley bottom wetlands.

Option 3 is indicated in Pink colour in Figure 18 below, this alignment runs parallel to the R36 for approximately 1.8km, it then moves to the east, through mainly grassland in various stages of degradation and transformation. It passes through relatively undisturbed grassland areas as well as within close proximity to two artificially created dams along the valley bottom wetlands. The majority of the alignments is situated within transformed or degraded grasslands and bisects the narrower sections of the valley bottoms. This is the preferred option from an ecological perspective.

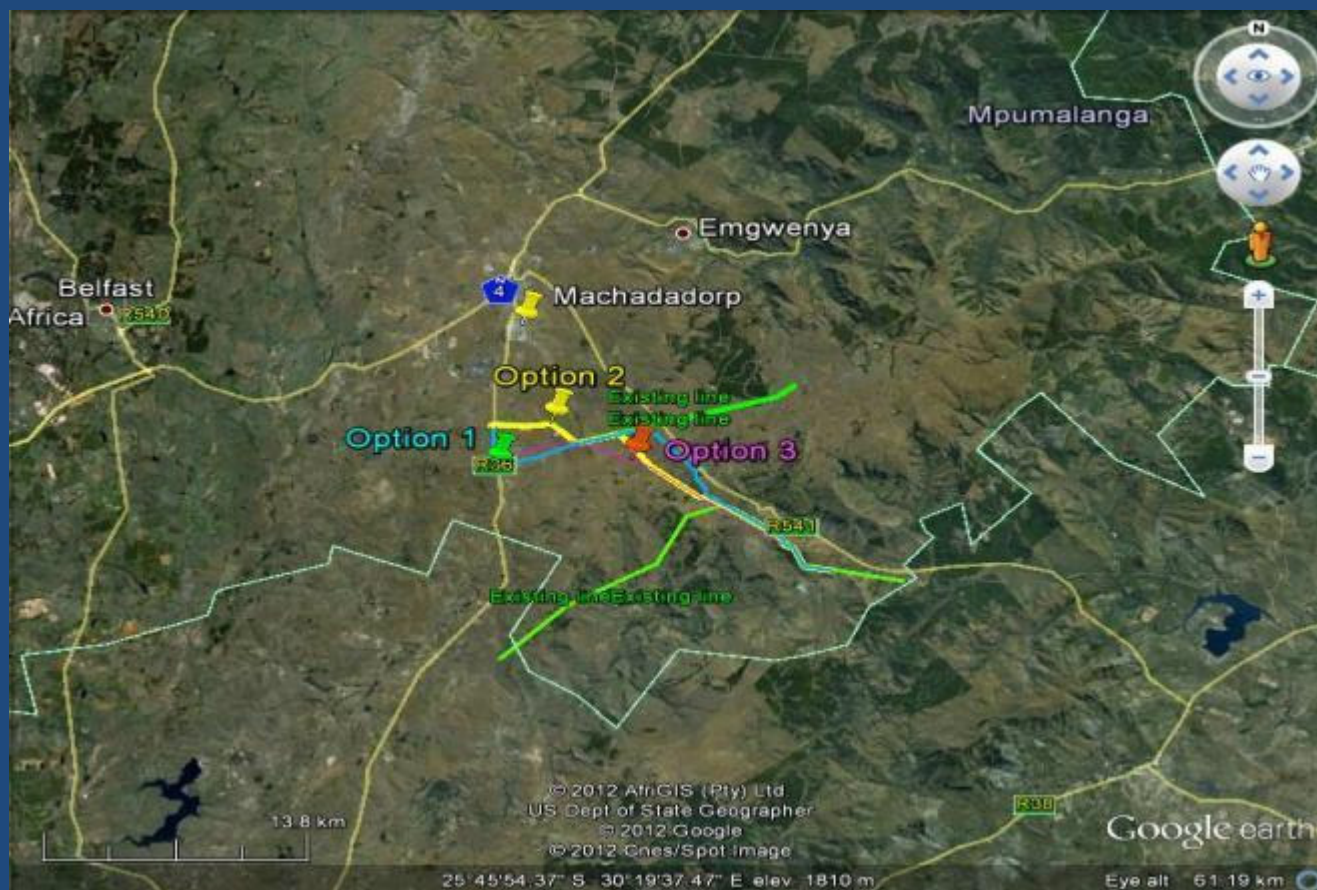


Figure 17: Proposed Alternative Options for the Project (Also see Appendix A)

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

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.

BASIC ASSESSMENT REPORT

List alternative sites, if applicable.

Alternative:

- Alternative S1² (preferred or only site alternative)
- Alternative S2 (if any)
- Alternative S3 (if any)

Latitude (S):	Longitude (E):
o	o
o	o
o	o

In the case of linear activities:

Alternative:

Alternative 1 (preferred or only route alternative)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

Latitude (S):	Longitude (E):
25° 44'06.81"	30°14'12.47"
25° 49'26.81"	30°17'22.90"
25°50'26.31"	30°24'44.75"

Alternative 2 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

25°44'06.81"	30°14'12.47"
25°47'45.14"	30°19'47.46"
25°50'26.31"	30°24'44.75"

Alternative 3 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

25° 44'06.81"	30°14'12.47"
25°46'47.33"	30°20'53.89"
25°50'26.31"	30°24'44.75"

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

4. PHYSICAL SIZE OF THE ACTIVITY

Alternative:

- Alternative A1³ (preferred activity alternative)
 - Alternative A2 (if any)
 - Alternative A3 (if any)
- or, for linear activities:

Size of the activity:

1555m ²
1555m ²
1555m ²

Length of the activity:

Alternative:

- Alternative A1 (preferred activity alternative)
- Alternative A2 (if any)
- Alternative A3 (if any)

32826.89 m
22573.35.m
344992 m

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

Size of the site/servitude:

Alternative:

- Alternative A1 (preferred activity alternative)

Servitude is 3m (1.5m each side)

² "Alternative S." refer to site alternatives.

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

BASIC ASSESSMENT REPORT

Alternative A2 (if any)

Servitude is 3m (1.5m each side)

Alternative A3 (if any)

Servitude is 3m (1.5m each side)

5. SITE ACCESS

Does ready access to the site exist?

YES – to all 3
alternatives

If NO, what is the distance over which a new access road will be built
Describe the type of access road planned:

The existing tar and gravel roads will be used during the construction phase and operational phase for maintenance purposes.

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 metres 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 metres;
- 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 metres 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.

See Attached Appendix A

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.

See Attached Appendix B

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.

BASIC ASSESSMENT REPORT

See Attached Appendix C

9. ACTIVITY MOTIVATION

9(a) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R48 Million
What is the expected yearly income that will be generated by or as a result of the activity?	It is not known yet.
Will the activity contribute to service infrastructure?	YES
Is the activity a public amenity?	YES
How many new employment opportunities will be created in the development phase of the activity?	It is not known yet.
What is the expected value of the employment opportunities during the development phase?	It is not known yet.
What percentage of this will accrue to previously disadvantaged individuals?	It is not known yet
How many permanent new employment opportunities will be created during the operational phase of the activity?	It is not known yet
What is the expected current value of the employment opportunities during the first 10 years?	It is not known yet
What percentage of this will accrue to previously disadvantaged individuals?	It is not known yet

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?		NO
2.	Does the proposed land use fall within the relevant provincial planning framework?		NO
3.	If the answer to questions 1 and / or 2 was NO, please provide further motivation / explanation: Eskom Holding conducts their own internal planning when improving existing or constructing new infrastructures for power supply within the country. The external stakeholders are consulted with during the Public Participation Process where they provide comments to the project. The Public Participation Process is a component of the Environmental Studies conducted for the proposed project.		

DESIRABILITY:			
1.	Does the proposed land use / development fit the surrounding area?	YES	
2.	Does the proposed land use / development conform to the relevant structure plans, SDF and planning visions for the area?	YES	
3.	Will the benefits of the proposed land use / development outweigh the negative impacts of it?	YES	
4.	If the answer to any of the questions 1-3 was NO, please provide further motivation / explanation: N/A		
5.	Will the proposed land use / development impact on the sense of place?		NO
6.	Will the proposed land use / development set a precedent?		NO
7.	Will any person's rights be affected by the proposed land use / development?		NO
8.	Will the proposed land use / development compromise the "urban edge"?		NO
9.	If the answer to any of the question 5-8 was YES, please provide further motivation / explanation. N/A		

BENEFITS:			
1.	Will the land use / development have any benefits for society in general?	YES	

BASIC ASSESSMENT REPORT

2.	Explain: The proposed construction of the powerline will provide additional electricity supply within the country.
3.	Will the land use / development have any benefits for the local communities where it will be located? YES
4.	Explain: The proposed project will provide undisturbed electricity to local communities and also accommodate future developments which the Emakhazeni local municipality is planning.

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:	Administering authority:	Date:
The Constitution of South Africa (Act No 108 of 1996)	National & Provincial	1996
National Environmental Management Act (Act No 107 Of 1998)(as amended)	National & Provincial	1998
National Environmental Management: Waste Act (Act 59 of 2008)	National & Provincial	2008
National Conservation of Agricultural Resources Act (No 43 of 1983)	National & Provincial	1983
National Environmental Management : Air Quality Act (Act No 39 of 2004)	National & Provincial	2004
National Heritage Resources Act (No 25 of 1999)	National & Provincial	1999
National Environmental Management: Biodiversity Act (10 of 2004)	National & Provincial	2004
National Water Act (Act No 36 of 1998)	National & Provincial	1998
Minerals and Petroleum Resources Development Act (28 of 2002)	National & Provincial	2002
National Road Traffic Act (No 93 of 1996)	National & Provincial	1996
Occupational Health and Safety Act (No 85 of 1993)	National & Provincial	1993
All relevant Provincial regulations, Municipal bylaws	Provincial	

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 [Redacted]
It is not known

If yes, what estimated quantity will be produced per month?

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

The construction waste generated on site will be collected weekly on site and disposed of at a registered landfill site determined by the contractor.

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

Construction solid waste will be disposed at a registered landfill site determined by the contractor.

Will the activity produce solid waste during its operational phase?

[Redacted] NO
N/A

If yes, what estimated quantity will be produced per month?

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?

[Redacted] 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?

[Redacted] 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.

BASIC ASSESSMENT REPORT

11(b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

	NO
--	----

If yes, what estimated quantity will be produced per month?

N/A	
-----	--

Will the activity produce any effluent that will be treated and/or disposed of on site?

	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?

	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	
-----	--

If yes, is it controlled by any legislation of any sphere of government?

	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:

During the construction phase, dust and vehicular emissions will be released as a result of earth moving machinery and trucks transporting construction material. The emissions will however have short term impacts on the immediate surrounding areas and thus the authorisation of such emissions will not be required.

11(d) Generation of noise

Will the activity generate noise?

YES	
-----	--

If yes, is it controlled by any legislation of any sphere of government?

	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:

The movements of construction trucks, machinery and other construction activities will generate noise on site and surrounding communities. However the noise will be of short term, localised and will last during the construction activities/phase of the project. The noise level is anticipated to be less than 50dBA as required by SANS 10103 and thus authorisation will not be required for the noise.

12. WATER USE

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

<input checked="" type="checkbox"/> municipal	<input type="checkbox"/> water board	<input type="checkbox"/> groundwater	<input type="checkbox"/> river, stream, dam or lake	<input type="checkbox"/> other	<input type="checkbox"/> 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:

--

Does the activity require a water use permit from the Department of Water Affairs?

	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.

BASIC ASSESSMENT REPORT

3 ENERGY EFFICIENCY

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

The contractor will be advised to transport all construction materials on site at the same time where possible and the collection of waste material conducted simultaneous with other activities to reduce the amount fuel usage for such transportation.

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

Diesel fuel will be used on site instead of electricity.

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 C and indicate the area, which is covered by each copy No. on the Site Plan.

Section C Copy No. (e.g. **1**
A):

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?

NO

If YES, please complete the form entitled "Details of specialist and declaration of interest"

for each specialist thus appointed:

All specialist reports must be contained in Appendix D.

Property description/physical address:

Farm Name	Portions
Dalmanutha 376 JT	3,4
Rietvlei 375JT	1,2,10,11,13,17,18
Uitkomst 390JT	7,8,9,10,12,14,19,20,23,27
Bemondsey 391JT	21
Boschhoek 392JT	6,7,8
Gemsbokhoek 397JT	5,11

(Farm name, portion etc.) Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application.

N/A

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 or a consent use application required?

NO

Must a building plan be submitted to the local authority?

NO

BASIC ASSESSMENT REPORT

Locality map:

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

- an 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)

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1: (Option 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
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Alternative S1: (Bridge 2 site)

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
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Alternative S1: (Option 3)

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 / low hills

2.8 Dune

2.9 Seafront

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

	Option 1		Option 2		Option 3	
Shallow water table (less than 1.5m deep)	YES		YES		YES	
Dolomite, sinkhole or doline areas		NO		NO		NO
Seasonally wet soils (often close to water bodies)	YES		YES		YES	
Unstable rocky slopes or steep slopes with loose soil		NO		NO		NO
Dispersive soils (soils that dissolve in water)		NO		NO		NO

BASIC ASSESSMENT REPORT

Soils with high clay content (clay fraction more than 40%)	NO		NO		NO
Any other unstable soil or geological feature	NO		NO		NO
An area sensitive to erosion	NO		NO		NO

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

4. GROUNDCOVER

Indicate the types of groundcover present on the site:

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

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

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

5. 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

BASIC ASSESSMENT REPORT

- 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?

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:

If YES, specify:

|

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:

If YES, specify:

|

BASIC ASSESSMENT REPORT

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 Archaeological or palaeontological sites, on or close (within 20m) to the site?	YES	
	Uncertain	
If YES, explain: Archaeological sites dating to Stone Age.		
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: According to the Heritage Specialist Dr Kusel the proposed powerlines crosses archaeological sites dating to stone age. However the archaeological sites will not be impacted on, provided that the proposed powerline follow the existing Komati Route.		
Will any building or structure older than 60 years be affected in any way?	NO	
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	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.		

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
 - (i) the site where the activity to which the application relates is or is to be undertaken; and
 - (ii) any alternative site mentioned in the application;
- (b) giving written notice to—
 - (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
 - (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
 - (v) the municipality which has jurisdiction in the area;
 - (vi) any organ of state having jurisdiction in respect of any aspect of the activity; and
 - (vii) any other party as required by the competent authority;
- (c) placing an advertisement in—
 - (i) one local newspaper; or
 - (ii) any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
- (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official Gazette referred to in subregulation 54(c)(ii); and
- (e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
 - (i) illiteracy;
 - (ii) disability; or
 - (iii) any other disadvantage.

2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and
- (b) state—
 - (i) that the application has been submitted to the competent authority in terms of these Regulations, as the case may be;
 - (ii) whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental authorisation;
 - (iii) the nature and location of the activity to which the application relates;
 - (iv) where further information on the application or activity can be obtained; and
 - (iv) the manner in which and the person to whom representations in respect of the application may be made.

3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

4. DETERMINATION OF APPROPRIATE MEASURES

The practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before the application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to this application. The comments and response report must be attached under Appendix E.

6. AUTHORITY PARTICIPATION

Please note that a complete list of all organs of state and or any other applicable authority with their contact details must be appended to the basic assessment report or scoping report, whichever is applicable.

Authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input.

List of authorities informed:

- Department of Environmental Affairs
- Emakhazeni Local Municipality
- Department of Social Development
- Mpumalanga Department of Economic Development, Environmental Tourism (MDEDET)
- Department of Public Works, Roads and Transport
- Department of Water Affairs
- South African Heritage Resources Agency (SAHRA)

BASIC ASSESSMENT REPORT

List of authorities from whom comments have been received:

Department of Environmental Affairs.

7. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for linear activities, or where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that subregulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable.

Has any comment been received from stakeholders?

YES

NO

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

No comments have been received from Stakeholders as yet.

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.

Issues raised by Interested and Affected Parties are attached in Appendix E, Annexure 6 and 8.

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached to this report as Annexure E):

Responses to the issues raised by Interested and Affected Parties are attached in Appendix E, Annexure 8.

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

List the potential direct, indirect and cumulative property/activity/design/technology/operational alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed.

The following parameters are used to describe the impact/issues in this assessment:

- (i) The risk or likelihood of the impact/issue occurring; and
- (ii) The degree of confidence placed in the assessment of the impact/issue

Please note that the rating number is provided in brackets next to the scale interval. Negative impacts are minus (-) values and positive impacts are plus (+) values. Higher negative valued impacts are more detrimental than lower negative valued impacts.

1. Temporal Scale

The temporal scale defines the significance of the impact at various time scales, as an indication of the duration of the impact.

- **Short Term (1)** – less than 5 years.
- **Medium Term (2)** – between 5 and 15 years.
- **Long Term (3)** – between 15 and 30 years.
- **Permanent (4)** – over 30 years and resulting in a permanent and lasting change that will always be there.

2. Spatial Scale

The spatial scale defines physical extent of the impact.

- **Individual (0)** – this scale applies to person/s in the area.
- **Household (1)** – this scale applies to households in the area.
- **Localised (2)** – small scale impacts from a few hectares in extent e.g. local district area.
- **Regional (3)** – the scale applies to impacts on a provincial level.
- **National (4)** – the scale applies to impacts that will affect the whole South Africa.
- **International (5)** – the scale of the impact will extend beyond the borders of South Africa.

3. Significance Scale

• Very High (4)

The impacts would be considered by society as constituting a major and usually permanent change to the environment, and usually result in severe or very severe effects, or beneficial or very beneficial effects.

• High (3)

These impacts will usually result in long-term effects on social and/or natural environment. Impacts rated as *High* will need to be considered by society as constituting an important and usually long term change to the environment, Society would probably view these impacts in a serious light.

• Moderate (2)

These impacts will usually result in medium to long-term effects on the social and/or natural environment. Impacts rated as *Moderate* will need to be considered by society as constituting a fairly important and usually medium-term change to the environment, These impacts are real but not substantial.

• Low (1)

These impacts will usually result in medium to short term effects on the social and/or natural environment. Impacts rated as *Low* will need to be considered by the public and/or the specialist as constituting a fairly unimportant and usually short term change to the environment. These impacts are not substantial and are likely to have little real effect.

• Non Significant (0)

There are no primary or secondary effects at all that are important to scientists or the public.

4. Risk or likelihood

The risk or likelihood of all impacts taking place as a result of project actions differs. Although these impacts may be severe, the likelihood of them occurring may affect their overall significance and will be taken into account.

- Very unlikely to occur (1) – the chance of these impacts occurring is extremely slim.
- Unlikely to occur (2) – the risk of these impacts occurring is slight.
- May occur (3) – the risk of these impacts is more likely, although not definite.
- Will definitely occur (4) – this impact will occur.

5. Degree of confidence or certainty

It is also necessary to state the degree of certainty or confidence with which one has predicted the significance of an impact. For this reason, a 'degree of certainty' scale has been provided to enable the reader to ascertain how certain we are of our assessment of significance:

- **Definite** – More than 90% sure of a particular fact. The use this one will need to have substantial supportive data.

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- Probable – Over 70% sure of a particular fact, or of the likelihood of that impact occurring.
- Possible – Only over 40% sure of a particular fact or of the likelihood of an impact occurring.
- Unsure – Less than 40% sure of a particular fact or the likelihood of an impact occurring.

2.1. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION

Alternative 1

Potential Impacts: Construction Phase	Significant rating of impacts	Proposed Mitigation Measures	Significant rating of impacts after mitigation
General Construction Impacts	Rating=10		Rating=6
<ul style="list-style-type: none"> • Movements of trucks delivering construction material and other construction activities will constitute the main impacts during the construction phase. 	<p>Temporal: Short term (1) Spatial: Localised (2) Significant: High (3) Likelihood: Definitely (4) Certainty: Probably</p>	<ul style="list-style-type: none"> • Dust suppression measures need to be implemented on site when necessary to reduce the dust impacts. • Waste managed accordingly and collected regularly to prevent accumulation on site. • Oil spillages must be minimised on site and should there be accidental spillages it need to be disposed of accordingly. • Chemical sanitary facilities be provided to workers and serviced weekly. • Where possible noise need to be minimised by conducting construction activities between 07H00-17H00. • The construction site should be barricaded all the time to prevent unauthorised access from the public. • Vegetation should be cleared in a phased manner to prevent exposure of soil which may result in erosion and siltation of nearby streams. 	<p>Temporal: Short term (1) Spatial: Localised (2) Significant: Low (1) Likelihood: unlikely (2) Certainty: Possible</p>
Avifauna Impacts			
<ul style="list-style-type: none"> • Habitat Destruction 	<p>Temporal: Medium term (2) Spatial: Localised (2) Significant: Moderate(2)</p>	<ul style="list-style-type: none"> • Strict control should be maintained over all activities during construction, in particular heavy machinery and vehicle movements, and staff. It is 	<p>Temporal: Short term (1) Spatial: Localised (2) Significant: Low(1)</p>

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	Likelihood: May occur (3) Certainty: Probably	difficult to mitigate properly for this as some habitat destruction is inevitable.	Likelihood: Unlikely(2) Certainty: Possible
	Rating=9		Rating =6
<ul style="list-style-type: none"> Disturbance 	Temporal: Short term (1) Spatial: Localised (2) Significant: Moderate(2) Likelihood: May occur (3) Certainty: Probably	<ul style="list-style-type: none"> Strict control should be maintained over all activities during construction. It is difficult to mitigate properly for this as some disturbance is inevitable. During Construction, if any of the "Focal Species" identified in this report are observed to be roosting and/or breeding in the vicinity, the EWT is to be contacted for further instruction. 	Temporal: Short term (1) Spatial: Localised (2) Significant: Low(1) Likelihood: Unlikely(2) Certainty: Possible
	Rating =8		Rating=6
Aquatic Resource Impacts			
<ul style="list-style-type: none"> Loss of wetland habitat and bed/bank modification. 	Temporal: Short term (1) Spatial: Localised (2) Significant: (2) Likelihood: May occur (3) Certainty: Probably	<ul style="list-style-type: none"> A buffer zone of at least 32m should therefore be adopted for all identified "Elands/Komati Tributaries". Furthermore, all wetlands associated with the Elands River catchment found along the proposed development corridor must not be developed. 	Temporal: Short term (1) Spatial: Localised (1) Significant: (1) Likelihood: very unlikely (1) Certainty: Possible
	Rating= 8		Total Ratings=4
<ul style="list-style-type: none"> Water Quality Impairment through sedimentation and construction related effluent disturbance. 	Temporal: Short term (1) Spatial: Localised (2) Significant: High (3) Likelihood: Definitely (4) Certainty: Possible	<ul style="list-style-type: none"> Runoff from the construction site is to be prevented from directly entering wetlands and associated water features (except where gradient is not feasible). Wetland buffer areas should be maintained to reduce the impact of runoff from the developed site's activities after the construction phases of the development. 	Temporal: Short term (1) Spatial: Localised (1) Significant: Low (1) Likelihood: unlikely (2) Certainty: Possible
	Rating=10		Rating=5

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<ul style="list-style-type: none"> Loss of terrestrial and wetland biodiversity 	<p>Temporal: Long term (3) Spatial: Localised (2) Significant: Moderate (2) Likelihood: Unlikely (2) Certainty: Probably</p>	<ul style="list-style-type: none"> The construction of the development must not utilise heavy construction vehicles where possible in proximity to the wetlands. All alien vegetation should be cleared off the development belt and landscaping using the closest representative reserves plant species is encouraged. The trimming of bulrush and reeds should be allowed if densities are too high. 	<p>Temporal: Short term (1) Spatial: Localised (1) Significant: Low (1) Likelihood: Very unlikely (1) Certainty: Possible</p>
	Rating=9		Rating=4
Ecological Impacts			
<ul style="list-style-type: none"> Loss of protected or rare plant species 	<p>Temporal: Long term (3) Spatial: Localised (2) Significant: High (3) Likelihood: May occur (3) Certainty: Probably</p>	<ul style="list-style-type: none"> During the CONSTRUCTION phase workers must be limited to areas under construction and access to the undeveloped areas, especially the surrounding. Close site supervision must be maintained during construction of the powerline. 	<p>Temporal: Short term (1) Spatial: Localised (1) Significant: Low (1) Likelihood: Unlikely (2) Certainty: Possible</p>
	Rating=11		Rating=5
<ul style="list-style-type: none"> Loss of faunal habitat 	<p>Temporal: Long term (3) Spatial: Localised (2) Significant: High (3) Likelihood: Definitely (4) Certainty: Probably</p>	<ul style="list-style-type: none"> Remaining indigenous bulbous geophytes and Aloes should be retained or replanted wherever possible. Where herbicides are used to clear vegetation, specimen-specific chemicals should be applied to individual plants only. General spraying should be prohibited. 	<p>Temporal: Short term (1) Spatial: Localised (1) Significant: Low (1) Likelihood: Unlikely (2) Certainty: Possible</p>
	Rating =12		Rating=5
<ul style="list-style-type: none"> Threatened fauna 	<p>Temporal: Short term (1) Spatial: Localised (2) Significant: High (3)</p>	<ul style="list-style-type: none"> It is recommended that the contractor and the environmental control officer should be made aware of the possible presence of certain threatened animal species (Highveld Golden Mole, 	<p>Temporal: Short term (1) Spatial: Localised (2) Significant: Low (1)</p>

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	<p>Likelihood: May occur (3) Certainty: Probably</p>	<p>Rough Haired Golden Mole) prior to the commencement of construction activities. In the event that any of the above-mentioned species are discovered relevant conservation authorities should be informed and activities surrounding the site suspended until further investigations have been conducted.</p>	<p>Likelihood: May occur (3) Certainty: Possible</p>
	Rating=9		Rating=7
Vegetation clearance	<p>Temporal: Short term (1) Spatial: Localised (2) Significant: High (3) Likelihood: Definitely (4) Certainty: Probably</p>	<ul style="list-style-type: none"> Vegetation must be cleared in a phased manner and areas which are not affected by construction activities should not be disturbed. 	<p>Temporal: Short term (1) Spatial: Localised (2) Significant: Low (3) Likelihood: Unlikely (2) Certainty: Possible</p>
	Rating=10		Rating=8
Disturbance of livestock	<p>Temporal: Short term (1) Spatial: Localised (2) Significant: High (3) Likelihood: May occur (3) Certainty: Probably</p>	<ul style="list-style-type: none"> Construction activities must be planned carefully so as not to interfere with the calving and lambing season for most animal species. The Contractor's workforce will have to be very careful not to disturb the animals as this may lead to fatalities which will give rise to claims from the Landowners. 	<p>Temporal: Short term (1) Spatial: Localised (2) Significant: Low (3) Likelihood: Unlikely (2) Certainty: Possible</p>
	Rating=9		Rating=8
Heritage Impacts			
<ul style="list-style-type: none"> The proposed powerlines crosses archaeological sites dating to Stone Age. 	<p>Temporal: Short term (1) Spatial: Localised (2) Significant: High (3) Likelihood: Unlikely(2) Certainty: Probably</p>	<ul style="list-style-type: none"> It is recommended that the powerlines be rerouted avoid the archaeological sites and features. 	<p>Temporal: Short term (1) Spatial: Localised (2) Significant: Low (1) Likelihood: Very unlikely (1) Certainty: Possible</p>
	Rating=8		Rating=5
Cumulative Impacts			

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<p>Biophysical</p> <ul style="list-style-type: none"> The surrounding habitat and species will be impacted upon by the construction of the new line which will further change the biodiversity of the area as some part of the agricultural area will be disturbed. <p>Visual</p> <ul style="list-style-type: none"> The construction of the powerline next to the R541 will impact on the aesthetic of the area and for people using the route. <p>Noise</p> <ul style="list-style-type: none"> During the construction phase of the project the movements of construction vehicles and other construction activities will result in an increased noise level in the surrounding area. The traffic congestion might also increase due to the construction activities. 	<p>Temporal: Long term (2) Spatial: Localised (2) Significant: High (3) Likelihood: May occur(3) Certainty: Probably</p>	<ul style="list-style-type: none"> If the proposed mitigation measures provided in this report and the Environmental Management Plan are not implemented adequately and effectively, the identified impact which would have been insignificant will result in the cumulative impacts. However, the overall project will result in a positive impact where there will be additional electricity supply in the area which will stimulate other developments. 	<p>Temporal: Short term (1) Spatial: Localised (2) Significant: Low (1) Likelihood: Unlikely (2) Certainty: Possible</p>
	Rating=10		Rating=6

Alternative 2

Potential Impacts: Construction Phase	Significant rating of impacts	Proposed Mitigation Measures	Significant rating of impacts after mitigation
General Construction Impacts	Rating=10		Rating=6
<ul style="list-style-type: none"> Movements of trucks delivering construction material and other construction activities will constitute the main impacts during the construction phase. 	<p>Temporal: Short term (1) Spatial: Localised (2) Significant: High (3) Likelihood: Definitely (4)</p>	<ul style="list-style-type: none"> Dust suppression measures need to be implemented on site when necessary to reduce the dust impacts. Waste managed accordingly and collected regularly to prevent 	<p>Temporal: Short term (1) Spatial: Localised (2) Significant: Low (1) Likelihood: unlikely (2)</p>

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	<p>Certainty: Probably</p>	<p>accumulation on site.</p> <ul style="list-style-type: none"> Oil spillages must be minimised on site and should there be accidental spillages it need to be disposed of accordingly. Chemical sanitary facilities be provided to workers and serviced weekly. Where possible noise need to be minimised by conducting construction activities between 07H00-17H00. The construction site should be barricaded all the time to prevent unauthorised access from the public. Vegetation should be cleared in a phased manner to prevent exposure of soil which may result in erosion and siltation of nearby streams. 	<p>Certainty: Possible</p>
Avifauna Impacts			
<ul style="list-style-type: none"> Habitat Destruction 	<p>Temporal: Short term (1) Spatial: Localised (2) Significant: Medium (2) Likelihood: May occur (3) Certainty: Probably</p>	<ul style="list-style-type: none"> Strict control should be maintained over all activities during construction, in particular heavy machinery and vehicle movements, and staff. It is difficult to mitigate properly for this as some habitat destruction is inevitable. 	<p>Temporal: Short term (1) Spatial: Localised (2) Significant: Low (1) Likelihood: Unlikely (2) Certainty: Possible</p>
	Rating=7		Rating =6
<ul style="list-style-type: none"> Disturbance 	<p>Temporal: Short term (1) Spatial: Localised (2) Significant: Medium (2) Likelihood: May occur (3) Certainty: Probably</p>	<ul style="list-style-type: none"> Strict control should be maintained over all activities during construction. It is difficult to mitigate properly for this as some disturbance is inevitable. During Construction, if any of the “Focal Species” identified in this report are observed to be roosting and/or breeding in the vicinity, the EWT is to be contacted for further instruction. 	<p>Temporal: Short term (1) Spatial: Localised (2) Significant: Low (1) Likelihood: Unlikely(2) Certainty: Possible</p>
	Rating =8		Rating=6

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Aquatic Resource Impacts			
Loss of wetland habitat and bed/bank modification.	Temporal: Medium term (2) Spatial: Localised (2) Significant: High(3) Likelihood: May occur (3) Certainty: Probably	<ul style="list-style-type: none"> A buffer zone of at least 32m should therefore be adopted for all identified "Elands/Komati Tributaries". Furthermore, all wetlands associated with the Elands River catchment found along the proposed development corridor must not be developed. 	Temporal: Short term (1) Spatial: Localised (2) Significant: Medium(2) Likelihood: May occur (3) Certainty: Possible
	Rating= 10		Ratings=8
Water Quality Impairment through sedimentation and construction related effluent disturbance.	Temporal: Medium term (2) Spatial: Localised (2) Significant: High (3) Likelihood: Definitely (4) Certainty: Possible	<ul style="list-style-type: none"> Runoff from the construction site is to be prevented from directly entering wetlands and associated water features (except where gradient is not feasible). Wetland buffer areas should be maintained to reduce the impact of runoff from the developed site's activities after the construction phases of the development. 	Temporal: Short term (1) Spatial: Localised (2) Significant: Medium (2) Likelihood: Unlikely (2) Certainty: Possible
	Rating=11		Rating= 7
Loss of terrestrial and wetland biodiversity	Temporal: Long term (3) Spatial: Localised (2) Significant: Moderate (2) Likelihood: Unlikely (2) Certainty: Probably	<ul style="list-style-type: none"> The construction of the development must not utilise heavy construction vehicles where possible in proximity to the wetlands. All alien vegetation should be cleared off the development belt and landscaping using the closest representative reserves plant species is encouraged. The trimming of bulrush and reeds should be allowed if densities are too high. 	Temporal: Short term (1) Spatial: Localised (1) Significant: Low (1) Likelihood: Very unlikely (1) Certainty: Possible
	Rating=9		Rating=4
Ecological Impacts			

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Loss of rare or protected plant species	<p>Temporal: Long term (3)</p> <p>Spatial: Localised (2)</p> <p>Significant: High (3)</p> <p>Likelihood: May occur (3)</p> <p>Certainty: Probably</p>	<ul style="list-style-type: none"> During the CONSTRUCTION phase workers must be limited to areas under construction and access to the undeveloped areas, especially the surrounding. Close site supervision must be maintained during construction of the powerline. 	<p>Temporal: Short term (1)</p> <p>Spatial: Localised (1)</p> <p>Significant: Low (1)</p> <p>Likelihood: Unlikely (2)</p> <p>Certainty: Possible</p>
	Rating=11		Rating=5
Loss of faunal habitat	<p>Temporal: Long term (3)</p> <p>Spatial: Localised (2)</p> <p>Significant: Very High (4)</p> <p>Likelihood: May occur (3)</p> <p>Certainty: Probably</p>	<ul style="list-style-type: none"> Remaining indigenous bulbous geophytes and Aloes should be retained or replanted wherever possible. Where herbicides are used to clear vegetation, specimen-specific chemicals should be applied to individual plants only. General spraying should be prohibited. 	<p>Temporal: Short term (1)</p> <p>Spatial: Localised (1)</p> <p>Significant: Low (1)</p> <p>Likelihood: May occur (3)</p> <p>Certainty: Possible</p>
	Rating=12		Rating= 6
Threatened fauna	<p>Temporal: Long term (3)</p> <p>Spatial: Localised (2)</p> <p>Significant: Very High (4)</p> <p>Likelihood: May occur (3)</p> <p>Certainty: Probably</p>	<ul style="list-style-type: none"> It is recommended that the contractor and the environmental control officer should be made aware of the possible presence of certain threatened animal species (Highveld Golden Mole, Rough Haired Golden Mole) prior to the commencement of construction activities. In the event that any of the above-mentioned species are discovered relevant conservation authorities should be informed and activities surrounding the site suspended until further investigations have been conducted. 	<p>Temporal: Medium term (2)</p> <p>Spatial: Localised (2)</p> <p>Significant: Medium (2)</p> <p>Likelihood: May occur (3)</p> <p>Certainty: Possible</p>
	Rating=12		Rating=9
Vegetation clearance	<p>Temporal: Medium term (2)</p> <p>Spatial: Localised (2)</p> <p>Significant: High (3)</p> <p>Likelihood: Definitely (4)</p>	<ul style="list-style-type: none"> Vegetation must be cleared in a phased manner and areas which are not affected by construction activities should not be disturbed. 	<p>Temporal: Short term (1)</p> <p>Spatial: Localised (2)</p> <p>Significant: Low (1)</p> <p>Likelihood: May occur (3)</p>

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	Certainty: Probably		Certainty: Possible
	Rating=11		Rating=7
Disturbance of livestock	Temporal: Short term (1) Spatial: Localised (2) Significant: High (3) Likelihood: May occur (3) Certainty: Probably	<ul style="list-style-type: none"> Construction activities must be planned carefully so as not to interfere with the calving and lambing season for most animal species. The Contractor's workforce will have to be very careful not to disturb the animals as this may lead to fatalities which will give rise to claims from the Landowners. 	Temporal: Short term (1) Spatial: Localised (2) Significant: Low (3) Likelihood: Unlikely (2) Certainty: Possible
Heritage Impacts	Rating=9		Rating=8
<ul style="list-style-type: none"> The proposed powerlines crosses archaeological sites dating to Stone Age. 	Temporal: Short term (1) Spatial: Localised (2) Significant: High (3) Likelihood: Unlikely(2) Certainty: Probably	<ul style="list-style-type: none"> It is recommended that the powerlines be rerouted avoid the archaeological sites and features. 	Temporal: Short term (1) Spatial: Localised (2) Significant: Low (1) Likelihood: Very unlikely (1) Certainty: Possible
	Rating=8		Rating=5
Cumulative Impacts			
Biophysical <ul style="list-style-type: none"> The surrounding habitat and species will be impacted upon by the construction of the new line which will further change the biodiversity of the area as some part of the agricultural area will be disturbed. Visual <ul style="list-style-type: none"> The construction of the powerline next to the R541 will impact on the aesthetic of the area and for people using the route. 	Temporal: Long term (2) Spatial: Localised (2) Significant: High (3) Likelihood: May occur(3) Certainty: Probably	<ul style="list-style-type: none"> If the proposed mitigation measures provided in this report and the Environmental Management Plan are not implemented adequately and effectively, the identified impact which would have been insignificant will result in the cumulative impacts. However, the overall project will result in a positive impact where there will be additional electricity supply in the area which will stimulate other developments. 	Temporal: Short term (1) Spatial: Localised (2) Significant: Low (1) Likelihood: Unlikely (2) Certainty: Possible

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Noise <ul style="list-style-type: none"> During the construction phase of the project the movements of construction vehicles and other construction activities will result in an increased noise level in the surrounding area. The traffic congestion might also increase due to the construction activities. 			
	Rating=10		Rating=6

Alternative 3

Potential Impacts: Construction Phase	Significant rating of impacts	Proposed Mitigation Measures	Significant rating of impacts after mitigation
General Construction Impacts	Rating=14		Rating 10
<ul style="list-style-type: none"> Movements of trucks delivering construction material and other construction activities will constitute the main impacts during the construction phase. 	Temporal: Short term (5) Spatial: Localised (2) Significant: (3) Likelihood: (4) Certainty: Probably	<ul style="list-style-type: none"> Dust suppression measures need to be implemented on site when necessary to reduce the dust impacts. Waste managed accordingly and collected regularly to prevent accumulation on site. Oil spillages must be minimised on site and should there be accidental spillages it need to be disposed of accordingly. Chemical sanitary facilities be provided to workers and serviced weekly. Where possible noise need to be minimised by conducting construction activities between 07H00-17H00. The construction site should be barricaded all the time to prevent unauthorised access from the public. 	Temporal: Short term (3) Spatial: Localised (2) Significant: (2) Likelihood: (3) Certainty: Possible

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		<ul style="list-style-type: none"> Vegetation should be cleared in a phased manner to prevent exposure of soil which may result in erosion and siltation of nearby streams. 	
Avifauna Impacts			
<ul style="list-style-type: none"> Habitat Destruction 	Temporal: Long term (3) Spatial: Localised (2) Significant: Very High (4) Likelihood: Definitely (4) Certainty: Probably	<ul style="list-style-type: none"> Strict control should be maintained over all activities during construction, in particular heavy machinery and vehicle movements, and staff. It is difficult to mitigate properly for this as some habitat destruction is inevitable. 	Temporal: Medium term (2) Spatial: Localised (2) Significant: Medium (2) Likelihood: May occur(3) Certainty: Possible
	Rating=13		Rating =9
<ul style="list-style-type: none"> Disturbance 	Temporal: Long term (3) Spatial: Localised (2) Significant: High(3) Likelihood: May occur (3) Certainty: Probably	<ul style="list-style-type: none"> Strict control should be maintained over all activities during construction. It is difficult to mitigate properly for this as some disturbance is inevitable. During Construction, if any of the "Focal Species" identified in this report are observed to be roosting and/or breeding in the vicinity, the EWT is to be contacted for further instruction. 	Temporal: Medium term (2) Spatial: Localised (2) Significant: Moderate(2) Likelihood: May occur(3) Certainty: Possible
	Rating=11		Rating=9
Aquatic Resource Impacts			
<ul style="list-style-type: none"> Loss of wetland habitat and bed/bank modification. 	Temporal: Long term (3) Spatial: Localised (2) Significant: High (3) Likelihood: Definitely (4) Certainty: Probably	<ul style="list-style-type: none"> A buffer zone of at least 32m should therefore be adopted for all identified "Elands/Komati Tributaries". Furthermore, all wetlands associated with the Elands River catchment found along the proposed development corridor must not be developed. 	Temporal: Medium term (2) Spatial: Localised (2) Significant: Moderate (2) Likelihood: May occur (3) Certainty: Possible
	Rating=12		Rating=9
<ul style="list-style-type: none"> Water Quality Impairment through sedimentation and construction related effluent disturbance. 	Temporal: Long term (2) Spatial: Localised (2) Significant: Very High (4)	<ul style="list-style-type: none"> Runoff from the construction site is to be prevented from directly entering wetlands and associated water features (except where gradient is not feasible). 	Temporal: Medium term (2) Spatial: Localised (2) Significant: Moderate (2)

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	<p>Likelihood: Definitely (4) Certainty: Probably</p>	<ul style="list-style-type: none"> Wetland buffer areas should be maintained to reduce the impact of runoff from the developed site's activities after the construction phases of the development. 	<p>Likelihood: May occur (3) Certainty: Possible</p>
	Rating=12		Rating=9
<ul style="list-style-type: none"> Loss of terrestrial and wetland biodiversity 	<p>Temporal: Long term (3) Spatial: Localised (2) Significant: Moderate (2) Likelihood: Unlikely (2) Certainty: Probably</p>	<ul style="list-style-type: none"> The construction of the development must not utilise heavy construction vehicles where possible in proximity to the wetlands. All alien vegetation should be cleared off the development belt and landscaping using the closest representative reserves plant species is encouraged. The trimming of bulrush and reeds should be allowed if densities are too high. 	<p>Temporal: Short term (1) Spatial: Localised (1) Significant: Low (1) Likelihood: Very unlikely (1) Certainty: Possible</p>
	Rating=9		Rating=4
Ecology Impacts			
<ul style="list-style-type: none"> Loss of rare or protected plant species 	<p>Temporal: Long term (3) Spatial: Localised (2) Significant: Very High (4) Likelihood: Definitely (4) Certainty: Probably</p>	<ul style="list-style-type: none"> During the CONSTRUCTION phase workers must be limited to areas under construction and access to the undeveloped areas, especially the surrounding. Close site supervision must be maintained during construction of the powerline. 	<p>Temporal: Medium term (2) Spatial: Localised (2) Significant: Moderate (2) Likelihood: May occur (3) Certainty: Possible</p>
	Rating=13		Rating=9
<ul style="list-style-type: none"> Loss of faunal habitat 	<p>Temporal: Long term (3) Spatial: Localised (2) Significant: High (3) Likelihood: May occur (3) Certainty: Probably</p>	<ul style="list-style-type: none"> Remaining indigenous bulbous geophytes and Aloes should be retained or replanted wherever possible. Where herbicides are used to clear vegetation, specimen-specific chemicals should be applied to individual plants only. General spraying should be prohibited. 	<p>Temporal: Medium term (2) Spatial: Localised (2) Significant: Moderate (2) Likelihood: May occur (3) Certainty: Possible</p>

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	Rating=11		Rating=9
<ul style="list-style-type: none"> Threatened fauna 	<p>Temporal: Long term (3)</p> <p>Spatial: Localised (2)</p> <p>Significant: High (3)</p> <p>Likelihood: May occur (3)</p> <p>Certainty: Probably</p>	<ul style="list-style-type: none"> It is recommended that the contractor and the environmental control officer should be made aware of the possible presence of certain threatened animal species (Highveld Golden Mole, Rough Haired Golden Mole) prior to the commencement of construction activities. In the event that any of the above-mentioned species are discovered relevant conservation authorities should be informed and activities surrounding the site suspended until further investigations have been conducted. 	<p>Temporal: Medium term (2)</p> <p>Spatial: Localised (2)</p> <p>Significant: Moderate (2)</p> <p>Likelihood: May occur (3)</p> <p>Certainty: Possible</p>
	Rating=11		Rating=9
Vegetation clearance	<p>Temporal: Long term (3)</p> <p>Spatial: Localised (2)</p> <p>Significant: High (3)</p> <p>Likelihood: Definitely (4)</p> <p>Certainty: Probably</p>	<ul style="list-style-type: none"> Vegetation must be cleared in a phased manner and areas which are not affected by construction activities should not be disturbed. Only an 8m strip may be cleared flush with the ground to allow vehicular passage during construction. No scalping shall be allowed on any part of the servitude road unless absolutely necessary. The removal of all economically valuable trees or vegetation shall be negotiated with the Landowner before such vegetation is removed. 	<p>Temporal: Short term (1)</p> <p>Spatial: Localised (2)</p> <p>Significant: Moderate (2)</p> <p>Likelihood: May occur (3)</p> <p>Certainty: Possible</p>
	Rating=12		Rating=8
Disturbance of livestock	<p>Temporal: Short term (1)</p> <p>Spatial: Localised (2)</p> <p>Significant: High (3)</p> <p>Likelihood: May occur (3)</p> <p>Certainty: Probably</p>	<ul style="list-style-type: none"> Construction activities must be planned carefully so as not to interfere with the calving and lambing season for most animal species. The Contractor's workforce will have to be very careful not to disturb the animals as this may lead to fatalities which will give rise to claims from the Landowners. 	<p>Temporal: Short term (1)</p> <p>Spatial: Localised (2)</p> <p>Significant: Low (1)</p> <p>Likelihood: Unlikely (2)</p> <p>Certainty: Possible</p>

BASIC ASSESSMENT REPORT

	Rating=9		Rating=6
Heritage Impacts			
<ul style="list-style-type: none"> The proposed powerlines crosses archaeological sites dating to Stone Age. 	<p>Temporal: Short term (1) Spatial: Localised (2) Significant: High(3) Likelihood: May occur(3) Certainty: Probably</p>	<ul style="list-style-type: none"> It is recommended that the powerlines be rerouted avoid the archaeological sites and features. 	<p>Temporal: Short term (1) Spatial: Localised (1) Significant Low (1) Likelihood: Unlikely(2) Certainty: Possible</p>
Cumulative Impacts	Rating=9		Rating=5
<p>Biophysical</p> <ul style="list-style-type: none"> The surrounding habitat and species will be impacted upon by the construction of the new line which will further change the biodiversity of the area as some part of the agricultural area will be disturbed. <p>Visual</p> <ul style="list-style-type: none"> The construction of the powerline next to the R541 will impact on the aesthetic of the area and for people using the route. <p>Noise</p> <ul style="list-style-type: none"> During the construction phase of the project the movements of construction vehicles and other construction activities will result in an increased noise level in the surrounding area. The traffic congestion might also increase due to the construction activities. 	<p>Temporal: Long term (2) Spatial: Localised (2) Significant: High (3) Likelihood: May occur(3) Certainty: Probably</p>	<ul style="list-style-type: none"> If the proposed mitigation measures provided in this report and the Environmental Management Plan are not implemented adequately and effectively, the identified impact which would have been insignificant will result in the cumulative impacts. However, the overall project will result in a positive impact where there will be additional electricity supply in the area which will stimulate other developments. 	<p>Temporal: Short term (1) Spatial: Localised (2) Significant: Low (1) Likelihood: Unlikely (2) Certainty: Possible</p>

BASIC ASSESSMENT REPORT

	Rating=10		Rating=6
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SUMMARY OF IMPACTS AND AVERAGE POINTS ALLOCATED TO EACH ALTERNATIVE DURING THE CONSTRUCTION PHASE

Impact	Alternative 1 (without mitigation measures)	Alternative 1 (with mitigation measures)	Alternative 2 (without mitigation measures)	Alternative 2 (with mitigation measures)	Alternative 3 (without mitigation measures)	Alternative 3 (with mitigation measures)
Construction	10	6	10	6	14	10
Aquatic	9	4.3	10	6.3	11	7.3
Avifauna	8.5	6	7.5	6	12	9
Ecology	10.2	6.6	9.2	5.4	11.2	8.2
Heritage	8	5	8	5	9	5
Cumulative	10	6	10	6	10	6
Total Average	55.7	33.9	54.7	34.7	67.2	45.5

2.2. IMPACTS THAT MAY RESULT FROM THE OPERATION

Alternative 1

Potential Impacts: Operational Phase	Significant rating of impacts	Proposed Mitigation Measures	Significant rating of impacts after mitigation
Avifauna			
<ul style="list-style-type: none"> Electrocution of birds 	Temporal: Long term (3) Spatial: Localised (2) Significant: High(3) Likelihood: May occur(3) Certainty: Probably	<ul style="list-style-type: none"> A "Bird Friendly" steel lattice structure (248 series type) should be used for the tower structures. Any deviation should be reported to EWT as it will alter this impact rating. 	Temporal: Short term (1) Spatial: Localised (2) Significant: Low(1) Likelihood: Unlikely (2) Certainty: Possible
	Rating=11		Rating=6
<ul style="list-style-type: none"> Collision of birds 	Temporal: Long term (3) Spatial: Localised (2) Significant: Moderate(2) Likelihood: May occur(3) Certainty: Probably	<ul style="list-style-type: none"> Mark the identified sections of line with anti collision marking devices on the earth wire to increase the visibility of the line and reduce likelihood of collisions. Marking devices should be spaced 10m apart. The sections of line that pose a concern and require marking should be finalised in a site "walkthrough" by EWT once final route is decided and towers/pylons pegged. 	Temporal: Short term (1) Spatial: Localised (2) Significant: Low(1) Likelihood: Unlikely(2) Certainty: Possible
	Rating=10		Rating =6

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Ecology Impacts			
<ul style="list-style-type: none"> Soil erosion and contamination. Infestation by alien species. 	Temporal: Medium-term (2) Spatial: Localised (2) Significance: Moderate (2) Likelihood: May occur (3) Certainty: Probably	<ul style="list-style-type: none"> Disturbed areas of natural vegetation as well as cut and fills must be rehabilitated immediately to prevent soil erosion. Re-seeding shall be done on disturbed areas as directed by the Environmental Control Officer. 	Temporal: Short-term (1) Spatial: Localised (2) Significance: Low (2) Likelihood: Unlikely (2) Certainty: Possible
	Rating=9		Rating=7
<ul style="list-style-type: none"> Fauna and Flora species disturbance during the maintenance of the powerline. 	Temporal: Short-term (1) Spatial: Localised (2) Significance: High (3) Likelihood: May occur (3) Certainty: Probably	<ul style="list-style-type: none"> During the maintenance of the powerline care should be taken not to disturb fauna and flora species which occurs outside the powerline servitude. 	Temporal: Short-term (1) Spatial: Localised (2) Significance: Low (2) Likelihood: Unlikely (3) Certainty: Possible
	Rating=9		Rating=8
Cumulative Impacts			
<ul style="list-style-type: none"> The potential cumulative impacts (if post construction mitigation measures are not complied with) at the proposed site are related to unsuccessful rehabilitation of the powerline route which can lead to erosion and proliferation of invader species and weeds already observable on site. 	Temporal: Short-term (2) Spatial: Localised (2) Significance: Moderate (2) Likelihood: May occur (3) Certainty: Possible	<ul style="list-style-type: none"> Strict adherence to the post construction mitigation measures with respect to rehabilitation of the site. 	Temporal: Short-term (1) Spatial: Localised (2) Significance: Moderate (2) Likelihood: May occur (3) Certainty: Possible
	Collective Rating=9		Collective Rating=8

BASIC ASSESSMENT REPORT

SUMMARY OF IMPACTS AND AVERAGE POINTS ALLOCATED TO THE PREFERRED ALTERNATIVE DURING THE OPERATIONAL PHASE

Impact	Alternative 1 (without mitigation measures)	Alternative 1 (with mitigation measures)
Avifauna	10.5	6
Ecology	9	7.5
Cumulative	9	8
Total Average	28.5	21.5

3. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Alternative 1 (preferred alternative)

Option 1 is preferred route alignment because it presents Medium-Low environmental impacts compared to other routes option 2 and 3.

According to the **Avifaunal** specialist study, all of the options are suitable from an avifaunal perspective, as long as the mitigations and recommendations of this report are adhered to.

According to the **Aquatic** specialist study route alignment option 1 is recommended as it crosses the least amount of significant identified surface water resources.

According to the **Ecological** specialist study, alignment option 1 is the second most preferred option. If the proposed new line is situated within close proximity (<20m) from the existing lines it will significantly reduce potential impacts on remaining fauna as well as limit disturbances of adjacent grasslands and wetlands as existing maintenance roads occur and the majority of sensitive faunal species would have located suitable habitat away from the current line.

According to the **Heritage** specialist study, line option 1 is the preferred route as it will partially follow an existing power line route which has been mitigated. The last section of the line also follows an existing line which is good from an infrastructure point of view.

According to the **Visual** specialist study, alignment option 1 is not a preferred option; it will result in high visual impacts as it will be built in areas where there is non existence of infrastructure.

Alternative 2

According to the **Avifauna** specialists study route alignment option 2 is most preferred route compared to option 1 and 3. However it needs to be adjusted to follow the regional tar road from Bosloop substation up to Skurwebergpas, to avoid climbing the ridge.

According to the **Aquatic** specialist study route alignment option 2 is not a preferred option due to a number of water resources it crosses and because it is located further away from a maintenance route (roads and servitudes).

According to the **Ecological** specialist study, route alignment option 2 is the least due to the line bisecting large areas of open grassland as well as valley bottom wetlands.

According to the **Heritage** specialist study, line option 2 will be a totally new route across open grassland and will cross some archaeological sites, thus it is not preferred.

According to the **Visual** specialist study, alignment option 2 is not a preferred option; it will result in high visual impacts as it will be built in areas where there is non existence of infrastructure.

Alternative 3

According to **Avifauna** specialist study route alignment option 3 is the least preferred option as it bisects large open areas in the north without following existing infrastructure.

According to the **Aquatic** specialist study route alignment option 3 is not preferred option as there are a number of water resources it crosses and because it is located further away from access route.

According to the **Ecological** specialist study, route alignment option 3 is the most preferred option as the majority of the alignment is situated within the transformed or degraded grassland and bisects as the narrower sections of the valley bottom wetland lands.

According to the **Heritage** specialist study, route alignment option 3 will run to a large extent through open grassland. Some small archaeological occurs in the last section of the line.

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According to the Visual specialist study, route alignment option 3 is the preferred option as it follows an existing line from Gumeni passing through the R36 and R541 thereby reducing the visual impacts.

No-go alternative (compulsory)

If the proposed project does not proceed as planned then the status quo will remain the same exacerbating the shortages of electricity supply in the area thus the status quo is not preferred.

BASIC ASSESSMENT REPORT

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	
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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):

N/A

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:

The environmental impacts identified in this report for the project are insignificant and can be mitigated, however it is urged that the appointed contractor and Eskom implement the mitigation measures and recommendations provided in this report and the Environmental Management Programme to make sure that the impacts remain insignificant. **Route alignment 1** emerged as the preferred option according to the specialist studies conducted for the project and the comments received from Interested Affected Parties.

Is an EMPr attached?

YES	NO
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The EMPr must be attached as Appendix F.