environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

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File Reference Number:	
Application Number:	**14/12/16/3/3/1/1114**
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. This report format is current as of **1 September 2012**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.
14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included on the electronic copy of the report submitted to the competent authority.

SECTION A: ACTIVITY INFORMATION

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

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

1. PROJECT DESCRIPTION

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

The proposed Lethabong project entails the following:

- The construction of the proposed Lethabong 88kV / 22kV Substation consisting of:
  - 2 X 20 MVA transformers
  - 4 X 22kV feeder bays
  - 2 X 88kV feeder bays

  The substation will be constructed on the Remainder of the farm Hartbeestfontein 228 JQ.
- An approximate 16km 88kV chickadee power line to be constructed from the Dam Switching Substation to the proposed Lethabong Substation.

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

Listed activity as described in GN R.544, 545 and 546	Description of project activity
GN 544, June 2010, Number 10 The construction of facilities or infrastructure for the transmission and distribution of electricity **(i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts;** (ii) or inside urban areas or industrial complexes with a capacity of 275 kilovolts or more.	An approximate 16km 88kV powerline will be constructed outside an urban area.
GN 544, June 2010, Number 23 The transformation of undeveloped, vacant or derelict land to (i) residential, retail, commercial, recreational, industrial or institutional use, inside an urban area, and where the total area to be transformed is 5 hectares or more, but less than 20 hectares, or **(ii) residential, retail, commercial, recreational, industrial or institutional use, outside an urban area and where the total area to be transformed is bigger than 1 hectare but less than 20 hectares;** except where such transformation takes place for linear activities	The proposed Lethabong substation will be constructed on land of approximately 200m x 200m (4 hectares)
GN 546, June 2010, Number 4 The construction of a road wider than 4 metres with a reserve less than 13.5 metres: In North West: i. Outside urban areas, in:	Roads wider than 4m will be constructed from the substation to where the line runs adjacent to an existing gravel road (servitude of Magalies Water): • The proposed Lethabong Substation as well as powerline route falls within an identified

(aa) A protected area identified in terms of NEMPAA, excluding conservancies; (bb) National Protected Area Expansion Strategy Focus areas; **(cc) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;** (dd) Sites or areas identified in terms of an International Convention; **(ee) Critical biodiversity areas (Terrestrial Type 1 and 2 and Aquatic Type 1) as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;** (ff) Core areas in biosphere reserves; **(gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from a biosphere reserve.** ii. In urban areas: (aa) Areas zoned for use as public open space; (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose; (cc) Natural heritage sites.	Terrestrial CBA2 as identified by SANBI (map attached in Appendix A). • The substation is also in very close proximity to a Formal Protected Area as identified by SANBI (map attached in Appendix A) and the line runs directly adjacent to the Vaalkop Nature Reserve which is managed by the North West Parks & Tourism Board.
GN 546, June 2010, Number 12 The clearance of an area of 300 square metres or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation. • Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004; • **Within critical biodiversity areas identified in bioregional plans;** • Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuary, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas.	The proposed project falls within an identified Terrestrial CBA2 as identified by SANBI. Vegetation clearance is required for the substation and small areas will be cleared for the pylons.

2. FEASIBLE AND REASONABLE ALTERNATIVES

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

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

Describe alternatives that are considered in this application as required by Regulation 22(2)(h) of GN R.543. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

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

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

a) Site alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

In the case of linear activities:

Alternative:	**Latitude (S):**	**Longitude (E):**
Alternative S1 (preferred)		
• Starting point of the activity Lethabong Substation	25° 25' 37.18" S	27° 31' 16.53" E
• Middle/Additional point of the activity Approximate middle of the route	25° 21' 9.86" S	27° 31' 15.32" E
• End point of the activity Dam Switching Station	25° 18' 14.65" S	27° 29' 56.57" E
Alternative S2 (if any)		
• Starting point of the activity Lethabong Substation	25° 25' 37.18" S	27° 31' 16.53" E
• Middle/Additional point of the activity Approximate middle of the route	25° 21' 9.86" S	27° 31' 15.32" E
• End point of the activity Dam Switching Station	25° 18' 14.65" S	27° 29' 56.57" E
Alternative S3 (if any)		
• Starting point of the activity Lethabong Substation	25° 25' 37.18" S	27° 31' 16.53" E
• Middle/Additional point of the activity Approximate middle of the route	25° 21' 21.90" S	27° 33' 12.89" E
• End point of the activity Dam Switching Station	25° 18' 14.65" S	27° 29' 56.57" E

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.
In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A.
Refer to Appendix A: "Co-ordinates for preferred and alternative routes"

ROUTE DESCRIPTION

The study area is characterised as a rural / agriculture / game farming area. The infrastructure is typical that of being associated with game and agricultural farming: farm dams, irrigation channels, farm houses, farm outbuildings, existing power lines and gravel / tarred roads. Agriculture is mainly pivot irrigation of various crops: vegetables, maize and wheat.

The gradient of the area is in general flat. A "koppie" is to be found a short distance from the proposed Lethabong substation site as well as in the approximate third of the preferred Alternative Route 1 and Alternative Route 2. Refer to the map below.

The area is disturbed / transformed by recent human interventions (game farming and agriculture, with associated activities).

Three alternative routes were investigated (please refer to the map below). The map shows the Preferred Route in red, Route Alternative 2 in yellow and Route Alternative 3 in purple.

Preferred Route Alternative and Route Alternative 2

These two routes split into two at the proposed Lethabong substation site (the southern starting point of the route). The Preferred Route runs to the right of the koppie and Route Alternative 2 to the left of the koppie. The biophysical environment for this section of the route is both identified in the Vegetation Ecological Investigation Report as *Unit 3: Rocky Hill* and was awarded as having a high conservation value as well as having a high ecosystem functioning.

Just after the koppie, the routes run on both sides and directly adjacent to the Magalies Water Servitude Road and the environment of both routes is similar. This section of the route transects two game farms, namely the Kwamahla Lodge to the right of the gravel servitude road (Preferred Route) and Mziki Game Ranch to the left of the road (Alternative 2). This section of the route was rated in the Vegetation Ecological Investigation Report as follows:

- *Terminalia sericiea* woodland with a low Conservation Value and a Medium Ecosystem Functioning
- Rocky hills with a high Conservation Value and a High Ecosystem Functioning
- *Combretum* woodland with a medium Conservation Value and a Medium-High Ecosystem Functioning

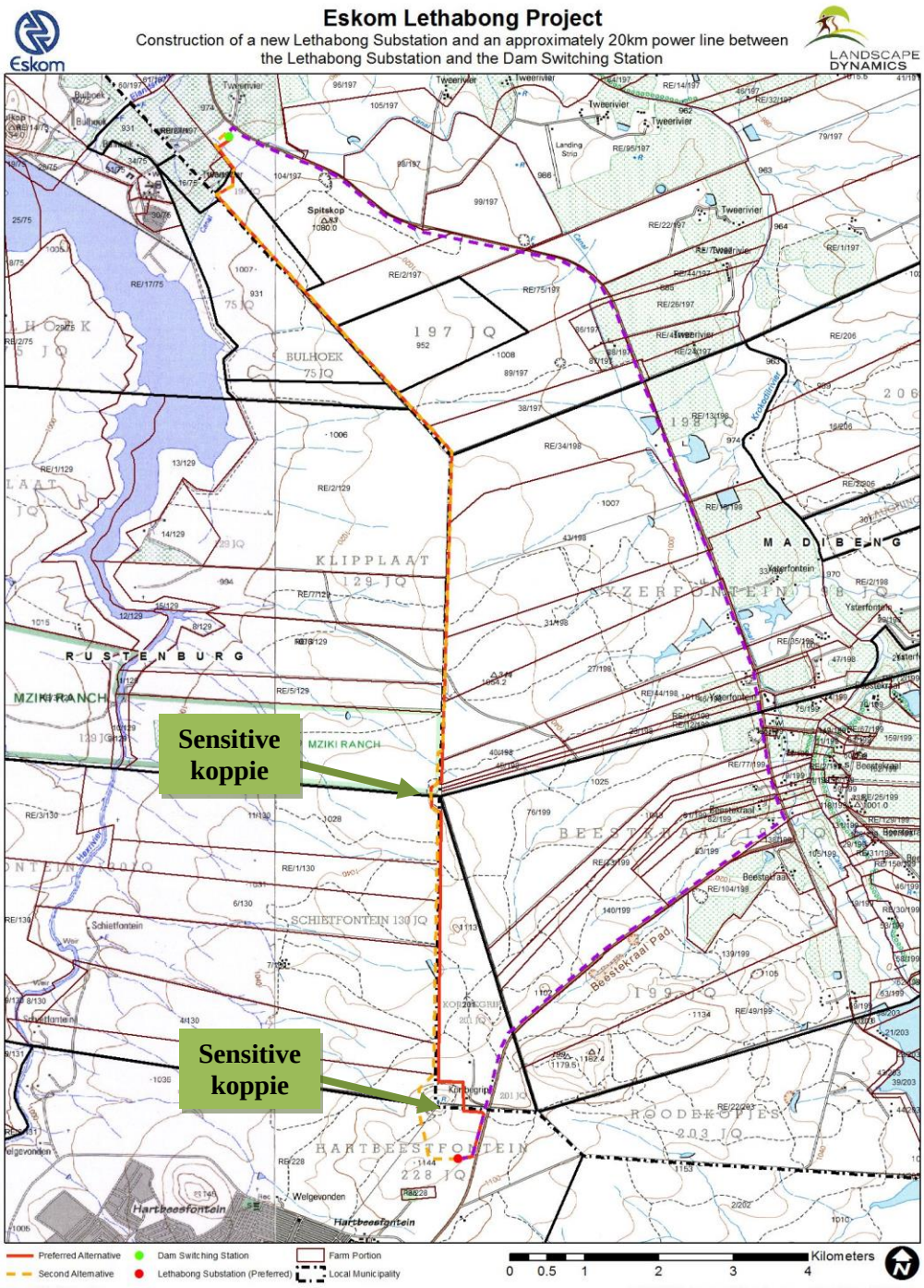
These routes come together just before a koppie approximately a third way down the route and swings to the left and right again over Mziki Game Ranch in order to miss this environmentally sensitive koppie.

The two alternatives come together after the koppie and the rest of the route runs along the Magalies Water Servitude Road with game farms on both sides of the road. The proposed line will run adjacent to an existing powerline for the approximate last third of the route. Before the Dam Switching Station, the route runs adjacent to agricultural fields.

Route Alternative 3

Route Alternative 3 runs for almost the entire route adjacent to the tarred Beestekraal Road. This area is characterised by game farming, lodges, large agricultural fields and pivot irrigation.

ROUTE ALTERNATIVES *INITIALLY* INVESTIGATED



SELECTING AN ALTERNATIVE ROUTE

Selecting an Alternative Route - Public Participation

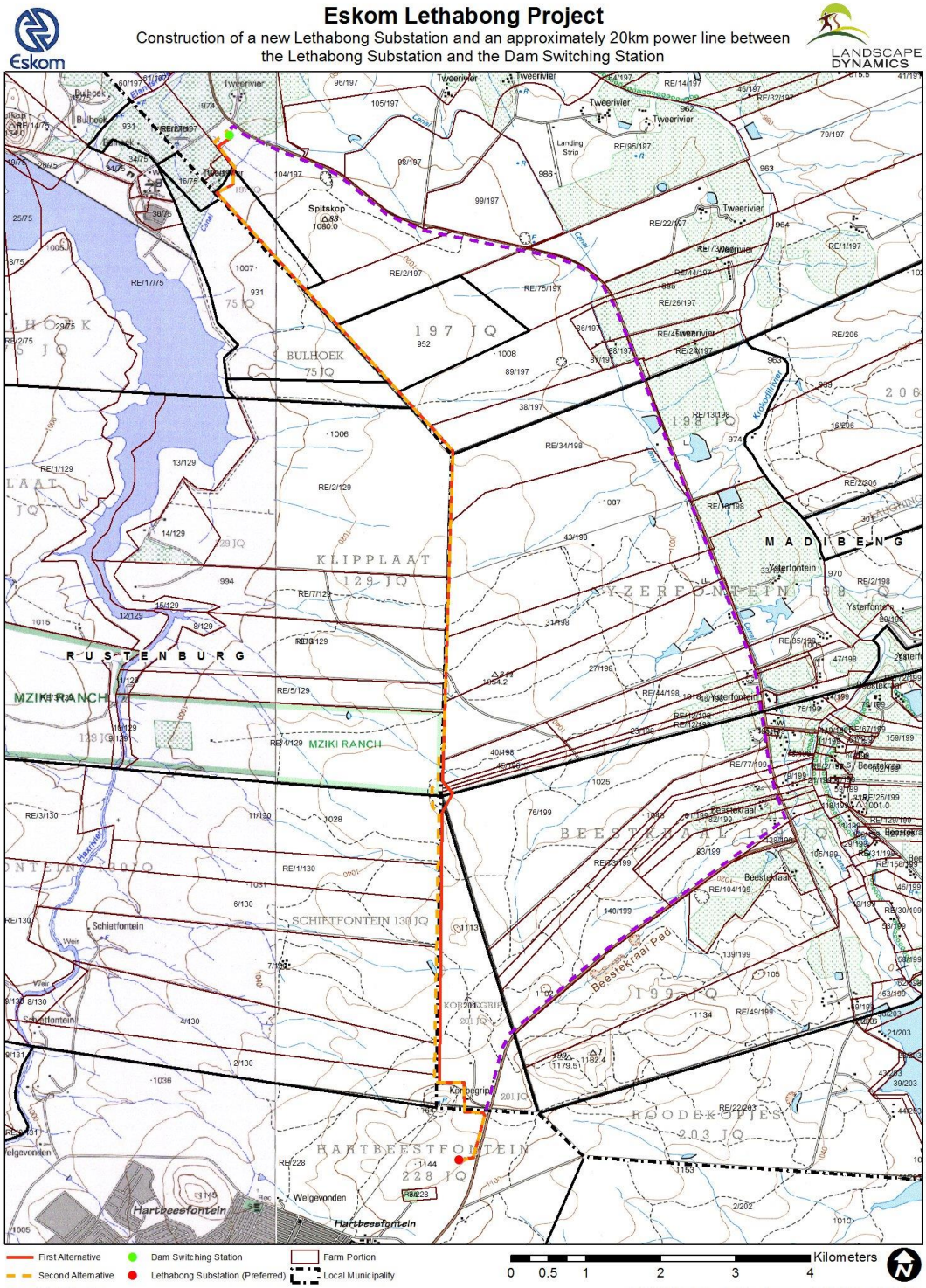
During the public participation programme the following objections were received:

- *Section of route where the route runs from the Lethabong Substation to the left of the koppie*
  The owner of the applicable portion of the Mziki Game Ranch severly objected against the route running over his property.

- *Approximate third of the route where the route runs to the left of the sensitive koppie*
  The owner of the applicable portion of the Miziki Game Ranch where the proposed Preferred Alternative runs over their property severely objected against the route running over their property.

In order to accommodate the above objections, several converstions / meetings were held with aplicable landowners and the route was changed and agreed upon as shown below.

FINAL ROUTE AS AGREED ON BY THE LANDOWNERS (map also attached in Appendix A)



Preferred Alternative = First Alternative = Red line

Selecting an Alternative Route - Specialist Studies

Specialist studies were undertaken (attached as Appendix D) and the different studies concluded as follows:

Vegetation Ecological Investigation

- This study investigated the vegetation found along the proposed routes and seven Vegetation Units were identified. Only two Units (Seasonal Stream & Rocky Hills) are regarded as having a high conservation value while the others have medium and low conservation values. All three routes have units with high, medium and low conservation values.
- None of the impacts assessed for the different vegetation units will have a high negative effect on the environment and no unit was found to be highly sensitive to development.
- No natural wetlands were found to be present along the proposed routes.
- Only one artificial dam constructed for irrigation and as a water hole for antelope was found along the proposed Alternative Route 3.
- No national river crosses any part of the proposed routes, though one seasonal stream will have to be crossed if Alternative Route 3 is to be followed.
- No red data species were found to be present in any of the vegetation units.
- None of the medicinal plants present in the different vegetation units are threatened.
- The Preferred Route is ecologically more acceptable than the second alternative due to it avoiding larger sections of the rocky hills.
- From a plant ecological point of view the construction of the power lines along the Preferred Route should not have any significant negative effect on the plant communities or their species composition, as long as the lines are constructed in the corridor between the two game fences. However, large scale removal of vegetation in this corridor could split the natural vegetation comprising one large mixture of plant communities into two which could have an edge effect on the vegetation. It, however, could be argued that the current corridor with two sets of fences already divides the plant communities along the route.
- Alternative 3 can also be considered and will mostly occur in areas next to the existing tar road that have already been degraded by the road and the erecting of fences. Care, however, will have to be taken not to erect any pylons in the seasonal stream area or on the rocky hill areas. The water canals in some areas will also need to be considered if this route is used. It should also be noted that this route will traverse close to one artificial dam and care should be taken that it does not negatively affect the dam.

It is concluded that from a plant ecological point of view, all three routes could be considered and that the proposed power line construction should not have any long-term negative effects on the environment.

Bird Impact Assessment Study

A *risk assessment* was undertaken to arrive at a preferred alternative for the proposed power line in terms of impacts on power line sensitive Red Data avifauna. The following factors were taken into account: water bodies, rivers, existing power lines, roads, towns and industrial developments, agricultural lands, highly disturbed woodland and moderately to lightly disturbed woodland.

From the assessment it emerged that Route Alternative 3 will have the lowest risk, followed by Alternatives 1 & 2 which are practically identical in terms of risk.

However, the construction of the proposed Lethabong substation and associated power lines will pose a **limited threat** to the birds occurring in the vicinity of the new infrastructure. The proposed alignments of the all 3 alternative power lines pose a **medium collision risk**, and a **medium electrocution risk**, in particular to vultures. With the **implementation of appropriate mitigation** measures, the risk should be reduced to **low for both impacts**. The habitat transformation associated with the construction of the power line should have a **low impact**. The impact of habitat transformation associated with the substation sites should be low and should only affect a few non-Red Data species at a local level.

Heritage Impact Assessment
No sites of cultural importance were identified.

CONCLUSION ON SELECTING AN ALTERNATIVE

Due to existing farming practices and other infrastructure, Alternative 3 is neither practical nor feasible and cannot be considered as a workable route alternative.

When all factors as explained above are taken into consideration, the Preferred Route can be seen as practical and feasible and could be recommended as the final route for environmental authorisation.

b) Lay-out alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

c) Technology alternatives

Alternative 1 (preferred alternative)
Alternative 2
Alternative 3

d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

Alternative 1 (preferred alternative)
Alternative 2
Alternative 3

e) No-go alternative

The 88kV network in the Brits area needs to be strengthened in order to create capacity to accommodate new loads in the area. Numerous applications for connections were received and many of them have been rejected due to a shortage of capacity. The proposed 88kV powerline will strengthen the wider network, thereby ensuring an enhanced and more reliable 22kV and 11kV network and supply.

Should the no-go option apply, the status quo will not just remain, but it will worsen. Electricity supply in the area will become less reliable and the negative impact on its users more intense. The economy of the area will also be further negatively affected.

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

3. PHYSICAL SIZE OF THE ACTIVITY

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

Alternative:	Size of the activity:
Alternative A1[1] (preferred activity alternative)	m^2
Alternative A2 (if any)	m^2
Alternative A3 (if any)	m^2

or, for linear activities:

Alternative:	Length of the activity:
Alternative A1 (preferred activity alternative)	15,900km
Alternative A2 (if any)	16,100km
Alternative A3 (if any)	20,500km

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

Alternative:	Size of the site/servitude:
Alternative A1 (preferred activity alternative)	Servitude will be 31m wide
Alternative A2 (if any)	Servitude will be 31m wide
Alternative A3 (if any)	Servitude will be 31m wide

4. SITE ACCESS

Does ready access to the site exist?	√ YES	√ NO

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

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

Access to the route will be obtained via existing farm roads as far as possible, but sections of new roads will be required in order to access the substation, the dam switching station, as well as to construct and maintain the power line in future.

Detail regarding the access roads will only be determined during the design phase of the project, in other words after the exact positions of the pylons are known.

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

5. LOCALITY MAP

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

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

6. LAYOUT/ROUTE PLAN

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

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;

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

7. SENSITIVITY MAP

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

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

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

Sensitivity Map

- *Ecological Sensitivity Map* indicating the seven identified Vegetation Units as well as the Conservation Value and Ecosystem Functioning thereof
- Areas that should be fitted with Birds Flight Diverters (BFDs) and preferred BFDs to be used

8. SITE PHOTOGRAPHS

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

9. FACILITY ILLUSTRATION

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

Sketches of typical lattice and monopole structure types as well as typical substation sites are attached as Appendix C.

10. ACTIVITY MOTIVATION

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

1. Is the activity permitted in terms of the property's existing land use rights?	YES	√ **NO**	Please explain
A new servitude, approximately 31m wide, will have to be registered.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	√ **YES**	NO	Please explain

- **NORTH-WEST PROVINCIAL SPATIAL DEVELOPMENT FRAMEWORK**
  A PSDF for the North-west Province is not readily available. However, in general, a PSDF is to guide sustainable development. In this case, electricity upgrade is necessary to ensure reliable electricity supply, thereby ensure economic development / job creation.

- **NORTH-WEST PROVINCIAL GROWTH AND DEVELOPMENT STRATEGY**
  The North-West Provincial Growth and Development Strategy provide a framework for the development of the Province. It also provides common vision, goals and objectives that should be achieved over a certain period of time. In terms of this strategy, the challenges to fight poverty / unemployment and improve the low level of expertise / skills are both immediate and long term macro goals that need to be addressed. It identifies primary goals for sustained growth and economic development. One of these goals are:
  - The Economic Goal, which requires an average economic growth rate of 6.6% per annum, to halve unemployment over a ten-year period. This is considered the minimum economic growth that would create enough capacity and momentum to place the Province on a virtuous cycle of integrated and sustainable growth and development during the next 10 years.

  Objectives identified that must be promoted at all levels of interaction in the Province to support these two macro goals are, amongst others:
  - Ensuring sustainable development through resource and environmental management.

  From a spatial perspective, what is of particular importance is the fact that three Spatial Development Initiatives (SDI's) have been launched to strengthen a potential activity corridor link into the North West and create a "diamond of competitive advantage" within the province. These are the Western Corridor, the Treasure Corridor and the Platinum Corridor. The Platinum Corridor SDI, which is focused on the north west portion of the Maputo-Walvisbay Corridor, affects the Madibeng / Rustenburg Area.

- **BOJANALA PLATINUM DISTRICT MUNICIPALITY INTEGRATED DEVELOPMENT PLAN**
  In terms of the Bojanala Platinum District Municipality Integrated Development Plan, the vision for the District is to
  "*promote co-operative governance, effective and efficient service delivery through co-ordination, facilitation and support to local municipalities*"

  The Key Performance Areas for the Bojanala District are, amongst others:
  - Local Economic Development; and
  - Basic Service Delivery and Infrastructure Investment.

(b) Urban edge / Edge of Built environment for the area	YES	NO	Please explain
Not applicable			
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	√ **YES**	NO	Please explain

Please note that the preferred Alternative Route 1 is mostly aligned within the Madibeng Area. Therefore, the planning policies of the Madibeng Area are addressed below. Cross border interaction between the Madibeng Local Municipality and the Rustenburg Local Municipality, which is imbedded in municipal legislation, should have the effect that the Rustenburg planning policies for the area to the west of the preferred Alternative Route 1 should compliment that of Madibeng, and vice versa.

- **MADIBENG INTEGRATED DEVELOPMENT PLAN**

  The vision for Madibeng, as set out in the Integrated Development Planning, is
  "to be a leading, united municipality through service excellence."

  Clearly there is a strong focus on service delivery, the spatial implications of which are:
  - To provide services where these are non-existent and improve existing services to an acceptable standard; and
  - To ensure that service delivery creates tangible products.

  The Municipal Wide Priority Needs which was identified as part of the Integrated Development Plan, includes amongst others:
  - Electricity; and
  - Local Economic Development.

  These priority needs then also informed the municipality's key priority areas, which are, amongst others:
  - Priority Four: Electricity; and
  - Priority Six: Local Economic Development.

- **SPATIAL DEVELOPMENT FRAMEWORK FOR THE MADIBENG AREA**

  The Spatial Development Framework must comply and be aligned with the municipality's overall strategic planning, as set out in the municipality's Integrated Development Plan.

  The approved Spatial Development Framework for the Madibeng Area identifies, amongst others, the following development objectives:
  - The cost efficient provision of engineering services. Madibeng covers a huge area which is characterised by scattered, disjointed settlements. This makes the provision of engineering services difficult and costly. In addition, many new leap-frog developments are approved that do not support the gradual extension of the engineering services networks. Currently, the lack of sufficient engineering services in the Madibeng area is of grave concern for all stakeholders.
  - The identification of areas for economic development. Economic development is currently primarily resourced based, as in the case of mining, agriculture and tourism.

Madibeng is an area with considerable tourism opportunities and potential, and it is a comparative advantage that should be protected and enhanced. The tourism value of Madibeng lies in, amongst others, the following qualities: game farming, eco-tourism / open space, outdoor recreation and agricultural tourism.

Although tourism is an activity that can take place in any environment (depending on the nature of the tourism service), there are certain areas in Madibeng that should be protected and promoted as tourism development areas because of specific intrinsic values or characteristics found in those areas. The Northern Tourism Zone (game farming) is one of the areas identified. Two very important principles which the tourism development areas must adhere to are quality and accessibility. Quality refers to aspects such as environmental management, availability of essential engineering services infrastructure, land use management, development control and architectural standards. Accessibility refers to the availability of and quality of movement infrastructure such as roads and rail as well as the availability of transport services in the area.

The availability of infrastructure such as road, water, sanitation and electricity is vital to ensure the development of an area. Without infrastructure investment, a local authority cannot expect to attract private sector investment which contributes to the economic development of the area.

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

The Lethabong area lies outside the urban edge. Structure Plans are mainly compiled for urban areas.

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

Specialist studies that were conducted for this project concluded that the preferred Alternative Route 1 is being the best and most sustainable option in terms of the receiving environment. The integrity of the existing environmental management priorities, therefore, will not be compromised.

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

Unknown

3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	√ **YES**	NO	Please explain

The 88kV network in the Brits area needs to be strengthened in order to create capacity to accommodate new loads in the area. Numerous applications for connections were received and many of them have been rejected due to a shortage of capacity. This has a severe effect on e.g. potential economic development. The proposed Lethabong project, therefore, is in line with the objectives of the Provincial, District and Local development planning policies, e.g. the development of economic potential via the provision of proper engineering infrastructure, such as electricity.

4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	√ **YES**	NO	Please explain
The proposed Lethabong project will provide the area with a long term solution. The economy, as well as the private sector, will benefit from this project.			
5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES	√ **NO**	Please explain
The 88kV network in the Brits area needs to be strengthened in order to create capacity to accommodate new loads in the area. The Lethabong project will ensure a more reliable supply of electricity and will also address the current need for additional electricity supply to the area. Access roads will be required in order to access the substation, the dam switching station, as well as to construct and maintain the preferred Alternative Route 1 in future. Detail regarding the access road, if required, will only be determined during the design phase of the project.			
6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	√ **YES**	NO	Please explain
The Madibeng Local Municipality recognises the need for proper engineering infrastructure (e.g. electricity) in its area of jurisdiction. The northern part of the Madibeng Area, where the Lethabong project will be build, is earmarked as a tourism / eco-tourism area. Much needed engineering infrastructure (e.g. electricity) is identified as a priority to unlock this potential.			
7. Is this project part of a national programme to address an issue of national concern or importance?	√ **YES**	NO	Please explain
The Lethabong project does contribute to the national network. Eskom is the national electricity utility, which generates and distributes electricity to industrial, mining, commercial, agricultural and residential electricity consumers and re-distributers.			
8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	√ **YES**	NO	Please explain
All impacts can be mitigated to acceptable levels. The activity will not impact negatively on the current land-uses along the preferred Alternative Route.			

9. Is the development the best practicable environmental option for this land/site?	√ **YES**	NO	Please explain
All impacts on the environment can be mitigated to acceptable levels. The protection of the bio-physical environment, therefore, is not jeopardised.			
10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	√ **YES**	NO	Please explain
All negative impacts on the environment can be mitigated to acceptable levels. The positive impact of a reliable electricity supply outweighs the possible negative impacts after mitigation measurements have been applied.			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	√ **YES**	NO	Please explain
Existing infrastructure always have the potential to be upgraded.			
12. Will any person's rights be negatively affected by the proposed activity/ies?	YES	√ **NO**	Please explain
No. A thorough public participation programme was conducted and all issues raised by the IAPs have been addressed.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	YES	√ **NO**	Please explain
The urban edge is irrelevant to the Lethabong project.			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	√ **YES**	NO	Please explain
"SIP10: Electricity Transmission and Distribution for all - expand the transmission and distribution network to address the historical imbalances, provide access to electricity for all and support economic development", is relevant.			
15. What will the benefits be to society in general and to the local communities?			Please explain
The proposed Lethabong project will be a long term solution to the current electricity supply / future demand for electricity in the broader area.			
16. Any other need and desirability considerations related to the proposed activity?			Please explain
A stable electricity supply is in support of economic growth, thereby creating more job opportunities.			

17. How does the project fit into the National Development Plan for 2030?	Please explain

The National Development Plan aims to eliminate poverty and to reduce inequality by 2030.

The Commission's Diagnostic Report, June 2011, set out South Africa's achievements and shortcomings since 1994. It identified the failure to implement policies and absence of broad partnerships as the main reasons for slow progress, and sets out nine primary challenges of which the following is relevant to this project: "*infrastructure is poorly located, inadequate and under-maintained*". Given the complexity of national development, the plan sets out six interlinked priorities. Relevant to this project is "*faster economic growth*".

The National Development Plan makes a confirm commitment to achieve a minimum standard of living. Elements of a decent standard of living include the following which is relevant to the project:

- A more efficient and competitive infrastructure;
- Infrastructure to facilitate economic activity that is conducive to growth and job creation; and
- Economic infrastructure: the proportion of people with access to the electricity grid should rise to at least 90% by 2030, with non-grid options available for the rest.

18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.

Current procedures and / or organisational structures are not necessarily achieving integrated decision making and / or co-operative governance and, as a result, there is a failure to properly achieve the objections of IEM as set out in Section 23 of NEMA. RIA's, however, often focus on the immediate harm a project will cause rather than any benefits it might create in the long term to sustainable development.

The stated objectives of Section 23 are to ensure integrated decision-making and co-operative governance so that NEMA's principles and the general objectives for integrated environmental management of activities (as prescribed in Section 23 of NEMA), can be achieved. The goals are to:

- Ensure that the Environmental Impact Assessments (EIA's) procedures facilitate integrated decision-making and co-operative governance; and
- Ensure that EIA reports explain how the proposed development will contribute to ecological sustainability. Whether it meets legislative objectives, and if not, explain why not.

For this project the following actions were taken to reach the general objectives of Integrated Environmental Management as set out in Section 23 of NEMA:

- An integral part of the Environmental Impact Study undertaken for this project is the Public Participation Process during which key stakeholders were identified. Relevant government departments, municipal authorities and others were communicated with throughout the study to ensure that all relevant policy guidelines and legislation are adhered to. More detail is supplied in "Section C: Public Participation".
- Consideration has also been given to relevant legislation:
    - Constitution of the Republic of South Africa, 1996;
    - NEM: Waste Act 59 of 2008;
    - NEM: Air Quality Act 39 of 2004;
    - NEM: Biodiversity Act 10 of 2004;
    - National Water Act 36 of 1998;

- Mineral and Petroleum Resource Development Act 28 of 2002;
- National Heritage Resource Act 25 of 1999;
- National Forest Act 84 of 1998; and
- Provincial Town-planning Ordinances and Municipal Town-planning Schemes.

It was confirmed in this study that no impact that could not be mitigated to acceptable levels would occur as a result of the project. By providing electricity whilst not impacting negatively on the environment, the project would contribute to a sustainable environment.

19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.

Chapter 2 of NEMA provides a number of principles that decision-makers have to consider when making decisions that may affect the environment. Therefore, when a competent authority considers granting or refusing environmental authorisation based on an Environmental Impact Assessment, these principles must be taken into account.

The NEMA principles with which this application conform are:

- The proposed project is socially, environmentally and economically sustainable:
  - The disturbance of ecosystems and loss of biological diversity would not take place;
  - Pollution and degradation of the environment can be avoided;
  - No sites of the nation's cultural heritage will be affected; and
  - Waste management measurements are in place;
- The participation of all I & AP in environmental governance throughout this Basic Assessment process was promoted; and
- The social, economic and environmental impacts of activities, including disadvantages, and benefits, were considered, assessed and evaluated, and informed decision-making by the authorities is hereby made possible.

11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
National Environmental Management Act, 107 of 1998	Authorization is required	Department of Environmental Affairs	1998
National Water Act, 36 of 1998	Authorization is not required	Department of Water Affairs	1998
National Heritage Resources Act, 25 of 1999	Comment is required	*North-west Provincial Heritage Resource Authority (NWPHRA) (please see comment below)	1999
Environmental Conservation Act, 73 of 1989	Authorization is not required	Department of Environmental Affairs	1989

National Environmental Management Biodiversity Act, 10 of 2004	Authorization is not required	Department of Environmental Affairs	2004
National Environmental Management: Biodiversity Act, 10 of 2004: Threatened & Protected Species Regulations	Authorization is not required	Department of Environmental Affairs	2004
National Spatial Biodiversity Assessment, 2011	Authorization is not required	Department of Environmental Affairs	2011
National Biodiversity Strategy Action Plan, 2005	Authorization is not required	Department of Environmental Affairs	2005
Paris Convention for the Protection of the Worlds Cultural and Natural Heritage	Authorization is not required	Department of Arts and Culture	-
White Paper on the Conservation and Sustainable Use of SA's Biological Diversity (GN 1095, 28 July 1997)	Authorization is not required	Responds to the United Nations Convention on Biological Diversity	1997
Conservation of Agricultural Resources Act, 43 of 1983	Authorization is not required	Department of Agriculture	1983
Endangered and Rare Species of Fauna and Flora (AN 1643 February 1984)	Authorization is not required	Lists endangered species in terms of the Nature Conservation Ordinance, 12 of 1983	1984
RAMSAR Convention on Wetlands of International Importance Especially as Waterfowl Habitat	Authorization is not required	Department of Water Affairs	-
Mineral and Petroleum Resources Development Act, 28 of 2002	Authorization is not required	Department Mineral Resources	2002
Section 63 (1) b and c of the Nature Conservation Ordinance, 19 of 1974	Authorization is not required	Department of Environmental Affairs	1974
Nature Conservation Regulations 955 of 1975	Authorization is not required	Department of Environmental Affairs	1975
Section 7(1) and 15(1) of the National Forests Act, 84 of 1998	Authorization is not required	Department of Agriculture	1998

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

√ YES	NO
Approximately 1m^3	

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

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

- Unusable waste will be disposed of at registered waste disposal sites according to the applicable waste classification.
- Hazardous construction waste will be disposed of at a H:H registered waste disposal facility.
- Steel (ferrous and non-ferrous) and aluminium will be recovered and sold as scrap for recycling.
- Refuse bags will be supplied to construction personnel for dumping of household waste. Bins with lids will be provided at construction camps for household waste.

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

- Solid waste will be transported off site by the contractor and returned to Eskom stores where scrap will be sold to buyers.
- Any solid waste that cannot be recycled will be transported to appropriate registered waste disposal sites.
- General household waste generated by the construction team will be removed by the relevant contractor to a registered waste disposal site.

For all waste that is disposed of, Eskom shall obtain waste manifests and disposal certificates, which shall be reported to the ECO on a monthly basis.

Will the activity produce solid waste during its operational phase?	YES	√ NO
If YES, what estimated quantity will be produced per month?	-	m^3

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

Not applicable

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

Not applicable

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

Not applicable

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

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

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

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

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

b) Liquid effluent

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

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

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

If YES, provide the particulars of the facility:

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

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

Not applicable

c) Emissions into the atmosphere

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

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

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

No significant emissions are released.

d) Waste permit

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

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

e) Generation of noise

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

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:

Limited noise will occur during the construction phase. Eskom must ensure that equipment is always in good working order to minimise unnecessary noise levels. No permanent noise will occur during the operational phase.

13. WATER USE

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

Municipal	Water board	Groundwater	River, stream, dam or lake	√ **Other**	The activity will not use water
Limited volumes of water will be used for construction purposes and personal drinking water. A water cart will transport the water to and from the construction site, as and when required.					

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:		litres
Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?	YES	√ **NO**
If YES, please provide proof that the application has been submitted to the Department of Water Affairs.		

14. ENERGY EFFICIENCY

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

N/A. The proposed project is an Eskom Distribution electricity initiative.

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

N/A. The proposed project is an Eskom Distribution electricity initiative.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

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

Section B Copy No. (e.g. 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? | √ YES | NO |

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

Property description/physical address:

Province	North-west Province
District Municipality	Bojanala Platinum District Municipality
Local Municipality	Rustenburg and Madibeng Local Municipalities
Ward Number(s)	• Rustenburg Local Municipality: Ward 28 • Madibeng Local Municipality: Ward 14
Farm name and number	Please refer to Appendix J
Portion number	-
SG Code	Please refer to Appendix J

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

Current land-use zoning as per local municipality IDP/records:

Agriculture

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required? | YES | √ NO |

Eskom is an Organ of State and as such is exempted from rezoning, consent use and subdivision applications. However, land owner consent is required before a servitude can be registered over a person's property. At this stage of the EIA process all the landowners has been informed about and communicated with regarding the intended project. As soon as Environmental Authorization has been obtained, the negotiator on behalf of Eskom will have option documents signed and he / she will appoint independent land valuators to determine the compensation amount relevant to each property. A negotiation process will then take place between Eskom and the relevant landowners after which the servitudes will be registered on the relevant property title deeds.

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

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

Alternative S2 (if any):

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

Alternative S3 (if any):

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

2. LOCATION IN LANDSCAPE

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

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

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

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

Geologically the area is classified as Lebowa Granite Suite, Nebo Granite within the Bushveld Complex.

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.

A **Vegetation Ecological Investigation** was done by Enviroguard Ecological Services CC and is attached as Appendix D. The report is summarised below.

The purpose of this impact assessment is to determine areas of high sensitivity and to provide guidelines to ensure that the proposed development is ecological sensitive and to prevent unnecessary destruction of natural ecosystems.

VEGETATION UNITS

The study area comprises natural vegetation and smaller sections of agricultural lands. A few small natural rocky outcrops comprising granite rocks and mostly woody vegetation are also found scattered along the proposed routes. A total of seven different **Vegetation Units** were identified.

Vegetation Unit 1 (*Acacia tortilis* woodland) comprises a large part of the proposed route. The vegetation comprises climax and secondary successional species mostly although signs of overgrazing are evident in some locations. *Acacia tortilis* occurs as large trees in some areas covering up to 80% of the area, while other areas have large numbers of seedlings and small shrubs. The dominance of the small tree *Acacia tortilis* with the indigenous invader *Acacia mellifera* suggests previous disturbance. This unit has fertile soil and should be able to support a large number of herbivores. The palatable grass *Panicum maximum* is present underneath some of the trees, however the more dominant secondary successional and pioneer grasses *Eragrostis rigidior, Melinis repens, Pogonarthria squarrosa* and *Heteropogon contortus* are indicative of a previous disturbance of the herbaceous layer. From a plant ecological and ecosystem functioning point of view this unit has a medium conservation value.

Vegetation Unit 2 is typical of medium to deep sandy soil in these areas. This unit occurs as small pockets distributed between the other vegetation units and as a result comprises of species (especially woody species) present in the other vegetation units. It, however, is dominated by the tree *Terminalia sericea* that occurs in sandy soil and along seeplines. The area is not diverse and due to the aggressive growth of *Terminalia sericea* this unit has relative low species richness. Large areas in the sourish mixed bushveld are dominated by *Terminalia sericea* and the tree is declared as an indigenous invader that will densify in sandy soil and slowly displace other vegetation in adjacent areas where overgrazing has taken place. From a wildlife perspective this unit does not offer much grazing or browsing, though antelopes will occasionally utilise the vegetation. From a plant ecological and ecosystem functioning point of view this unit has a low conservation value.

The Rocky Hills Vegetation Unit (Unit 3) occurs as small outcrops on the southern part of the proposed route. The tar road traverses through some of these hills. The vegetation is typical of warm north-facing slopes with shallow leached and dry soil (compared to the lower-lying areas). The vegetation is mostly natural and has a medium specie richness with mostly climax plant species present. Rocky Hills and slopes act as "reservoirs" for vegetation of the area as well as adjacent lower-lying areas. These areas play an important role in the larger ecosystem. Thus from a conservation and ecosystem functioning point of view these areas have a high conservation value.

The Combretum woodland (Unit 4) occurs throughout the study area. This woodland is in its natural condition with a medium specie richness. The vegetation is mostly climax and secondary successional species with smaller patches in-between with signs of trampling by animals. This vegetation type occurs over vast areas of the Bushveld and is not under threat or sensitive. The area do however play an important role in ecosystem functioning and has a medium conservation value.

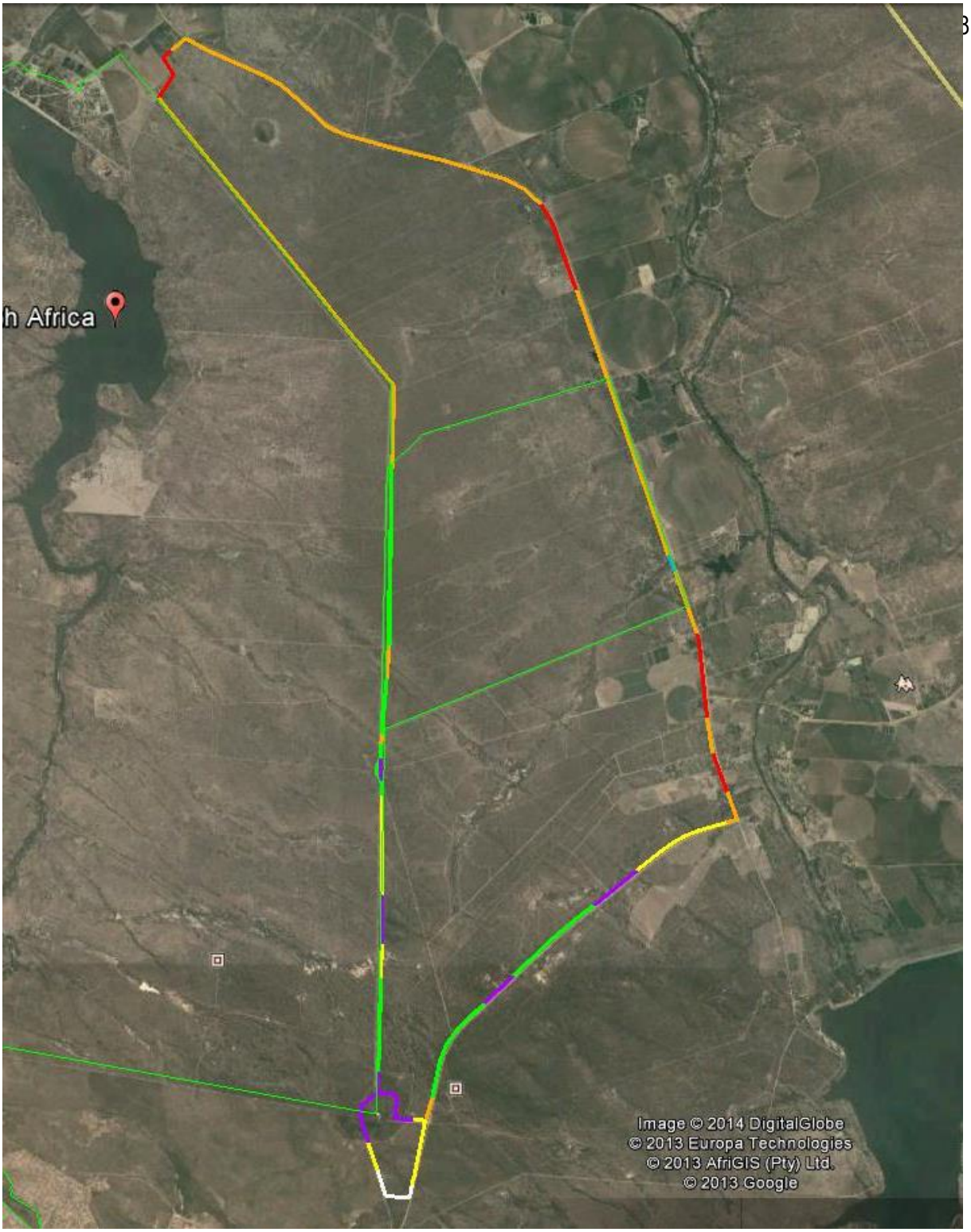
Vegetation Unit 5 (*Burkea africana* degraded woodland) occurs on deep sandy soil with a poor nutrient status. It seems as though the area was previously cleared for agricultural activities or as a result of heavy grazing. This unit has a relative low species richness and is not in a pristine condition. Most of the species are secondary succession or pioneer species. The area has a low-medium ecosystem functioning and from an ecological point of view is regarded as having a low conservation value. The site for the Lethabong Substation situated within this vegetation unit.

The seasonal stream (Unit 6) is typical of stream vegetation in the area. Sections are degraded due to animal use, while dams are built at various places for agricultural practices. Water courses are regarded as important features in the environment. Not only do they channel water, but they provide unique habitats for different plant and animal species. These areas also provide water to adjacent ecosystems during times of drought. Thus from an ecosystem functioning and conservation point of view this unit is regarded as having a high conservation value.

Vegetation unit 7 (Agricultural lands) is actively and intensively farmed with various crops as well as irrigation schemes. The natural vegetation of these areas has been destroyed and the areas transformed from an ecological perspective. These areas are therefore from a plant ecological and ecosystem functioning point of view regarded as having a low conservation value. At various places along the proposed route along the tar road, developed areas occur. These comprise houses, concrete-lined dams, concrete water channels and outbuildings where the natural vegetation has been totally degraded and transformed. The natural ecosystem does not provide any ecosystem services and the area is regarded as having a low conservation value.

VEGETATION UNITS & SENSITIVITIES
(Map on following page)

Colour on map	Vegetation Unit	Conservation Value	Ecosystem Functioning
Orange	*Acacia tortilis* woodland	Medium	Medium
Yellow	*Terminalia sericiea* woodland	Low	Medium
Purple	Rocky hills	High	High
Green	*Combretum* woodland	Medium	Medium-High
White	*Burkea Africana degraded woodland*	Low	Low
Blue	Seasonal stream	High	High
Red	Agricultural lands	Low	Low



THREATENED SPECIES

No red data species were found in any of the vegetation units although Vegetation Units 2 and 5 are marginally suitable for some species. No such species were found on the proposed power lines though in other areas of these units outside the proposed power line routes suitable habitat could exist.

MEDICINAL SPECIES

A total of five medicinal plants were identified in the study area. Most of these species occur within units 1, 2, 4 & 6, but all of these species are common species with none currently threatened.

ALIEN PLANT SPECIES

A total of two different declared alien invasive species, the tree *Melia azedarach* and the succulent forb *Opuntia ficus indica,* were found to be present in the study area. *Melia azedarach* is a deciduous spreading tree that can grow more than 20m high. This tree occurs in savannah, roadsides and riverbanks where it quickly seeds and then transforms the land into a homogeneous stand of vegetation with resultant loss in ecosystem functioning. This tree was found to be present in units 1, 3 and 6 with dense stands in especially units 1 and 6. *Opuntia ficus-indica* is a succulent branched plant that can in ideal conditions grow up to four meters tall. This plant is a declared category 1 weed and will quickly transform large stands of natural vegetation due to its ability to resprout from its cladodes (metamorphic stem). Cladodes that fall onto the ground will form new roots and stems thereby displacing the natural vegetation. The cladodes are also regarded as poisonous when eaten by game and domestic animals. This plant was found in units 1 and 3. It is important that these plants are removed from the different vegetation units and that a programme is implemented on a long-term basis to control the spread of these plants.

INDIGENOUS INVADER PLANT SPECIES

A total of three indigenous invader species namely *Acacia tortilis* (Units 1, 2, 3 & 6)*, Acacia mellifera* (units 1, 3 & 6) and *Terminalia sericea* (2, 3 & 5) were found to be present in the study area. These species are part of the natural ecosystem and do not pose a threat to the environment under natural conditions. Where vegetation is disturbed due to overgrazing, agricultural activities, general mismanagement etc., these species can quickly spread, forming dense stands that replace other indigenous species. Of the three only *Acacia mellifera* shows signs of encroaching and displacing the natural vegetation in units 1 and 6. It is recommended that control measures are put in place to ensure no further encroachment of this species.

WETLANDS

No natural wetlands were found to be present in the proposed routes, though one artificial dam built for water drinking and irrigation purposes are close to the proposed power lines. These dams have steep ground dam walls that are overgrown with woody species such as *Acacia tortilis* and *Dichrostachys cinerea* and various pioneer grasses. In some cases, a few individuals of *Typha capensis* and the category 1 succulent *Cereus jamacaru* were present on some of the edges of the dams. A concrete water canal for irrigation purposes are also present along the third alternative proposed route next to the tar road. The edges of the water canal are degraded and dominated by pioneer and secondary successional grasses. The woody layer has been cleared.

IMPACT EVALUATION

The construction of pylons for the power lines will inevitably have an impact on the surrounding ecosystem. The severity of the impact, however, varies, depending on the nature of the activity and mitigation measures followed. Different impacts on the vegetation will be experienced during construction and operational phase. These impacts on the total ecosystem are analysed below according to their extent, duration, intensity and probability:

The results of the above impact evaluations show that the proposed power lines should have no severe (high) impacts on the different units with medium impacts that will be experienced in units 1, 3, 4 & 6. The impact on unit 4 will be low if pylons could be placed in open grassland or degraded patches within this unit. By avoiding placing any pylons within the stream bank area (unit 6) the impact would be low. The impacts on units 2, 5 & 7 will be low.

SENSITIVITY ANALYSIS

A sensitivity analysis was done for the seven vegetation units identified. This was achieved by evaluating the different vegetation units against a set of habitat criteria. The results indicate that units 1, 3, 4 & 6 possess medium ecological sensitivity with all the others having a low sensitivity.

CONCLUSION

- Only two vegetation units (Seasonal stream & Rocky hills) are regarded as having a high conservation value while the others have medium and low conservation values. The vegetation studied are mostly in a secondary succession and climax stages and fairly natural. Most of the land is used for game farming purposes. Although representative of the natural vegetation none of the units are regarded as very sensitive with large patches of these vegetation types available in other parts of the bushveld. None of the impacts assessed for the different vegetation units will have a high negative effect on the environment and no unit was found to be highly sensitive to development.
- No natural wetlands were found to be present along the proposed routes. Only one artificial dam constructed for irrigation and as a water hole for antelope was found along the proposed route 3. No national river crosses any part of the proposed routes, though one seasonal stream will have to be crossed if the third alternative route is to be followed.
- No red data species were found to be present in any of the vegetation units.
- None of the medicinal plants present in the different vegetation units are threatened.
- The preferred Alternative Route 1 is ecologically more acceptable than the second alternative due to it avoiding larger sections of the rocky hills (Unit 3). From a plant ecological point of view the construction of the power lines along this route (preferred route) should not have any significant negative effect on the plant communities or their species composition as long as the lines are constructed in the corridor between the two game fences. However, large scale removal of vegetation in this corridor could split the natural vegetation comprising one large mixture of plant communities into two which could have an edge effect on the vegetation. It could, however be argued that the current corridor with two sets of fences already divides the plant communities along the route.
- Alternative 3 can also be considered and will mostly occur in areas next to the existing tar road that have already been degraded by the road and the erecting of fences. Care will, however, have to be taken not to erect any pylons in the Seasonal stream area (unit 6) or on the Rocky hill areas (unit 3). The water canal in some areas will also need to be considered if this route is used. It should also be noted that this route will traverse close to one artificial dam and care should be taken that it does not negatively affect the dam.

It is concluded that from a plant ecological point of view all three routes could be considered and that the proposed power line construction should not have any long-term negative effects on the environment.

5. SURFACE WATER

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

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

A concrete water canal for irrigation purposes is also present along the third alternative route next to the tar road. The edges of the water canal are degraded and dominated by pioneer and secondary grasses. The woody layer has been cleared

6. LAND USE CHARACTER OF SURROUNDING AREA

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

√ **Natural area**	√ **Dam or reservoir**	Polo fields
Low density residential	Hospital/medical centre	Filling station [H]
Medium density residential	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation
Informal residential[A]	Church	√ **Agriculture**
Retail commercial & warehousing	Old age home	River, stream or wetland
Light industrial	Sewage treatment plant[A]	√ **Nature conservation area**
Medium industrial [AN]	Train station or shunting yard [N]	√ **Mountain, koppie or ridge**
Heavy industrial [AN]	Railway line [N]	Museum
Power station	Major road (4 lanes or more) [N]	Historical building
Office/consulting room	Airport [N]	√ **Protected Area**
Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam[A]	Sport facilities	Archaeological site
Quarry, sand or borrow pit	Golf course	Other land uses (describe)
The area is characterised by game farming and agriculture and associated activities.		

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

Not applicable

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

Not applicable

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

Not applicable

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

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

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

The proposed Lethabong Substation and powerline route falls within an identified Terrestrial CBA2 as identified by SANBI (map attached in Appendix A).

7. CULTURAL/HISTORICAL FEATURES

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

A Heritage Impact Assessment for the proposed Eskom Lethabong project was conducted by Archaetnos Culture & Cultural Resource Consultants (attached in Appendix D) and concluded that no sites of cultural importance were identified on any of the three route alternatives for the power line.

The following is however recommended:

- From a heritage perspective there is no specific preference for any of the 3 route alternatives. Any of these may therefore be utilised.
- No mitigation measures are needed.
- It should be noted that the subterranean presence of archaeological and/or historical sites, features or artifacts are always a distinct possibility. Care, therefore, should be taken when development commences that if any of these are discovered, a qualified archaeologist be called in to investigate the occurrence.

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

Not applicable

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

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

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

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

The preferred Alternative Route runs mainly on the municipal boundary between the Madibeng Local Municipality and the Rustenburg Local Municipality, with the Lethabong Substation situated in the Rustenburg Area and the Dam Switching Station in the Madibeng Area. The Socio-economic factors were obtained from the website www.localgovernment,co.za and relevant planning policies.

Level of unemployment:

- Rustenburg Local Municipality: approximately 26%. (Please note that this figure doesn't include the latest possible effect that the mining strike could have had on the unemployment rate.)
- Madibeng Local Municipality: approximately 47%. (Please note that this figure doesn't include the latest possible effect that the mining strike could have had on the unemployment rate.)(Study: Community Study of Madibeng Local Municipality, July 2009, Health and Development Africa)

Economic profile of local municipality:

- Rustenburg Local Municipality: The main economic activity in the Rustenburg area is "mining". The latest situation regarding the mining strike, however, could have an effect on this as the economy may diversify to ensure that the area doesn't rely on mining per se for job opportunities in future. The Rustenburg area is also well known for nature conservation areas (e.g. the Pilansberg Nature Reserve) and tourism (e.g. Sun City).
- Madibeng Local Municipality: The main economic activities in the Madibeng area is "mining, agriculture, tourism, manufacturing and game farming". Again, the latest situation regarding the mining strike, however, can have an effect on this as the economy may diversify further to ensure that the area doesn't rely on mining per se for job opportunities in future.

Level of education:

According to Statistics SA (2011):

- Approximately 8.6% had no schooling at all;
- approximately 33.8% got to high school;
- approximately 28.4% of South Africans over the age of twenty years completed the 12th grade; and
- approximately 12.1% have a tertiary qualification.

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	Unknown
What is the expected yearly income that will be generated by or as a result of the activity?	Unknown
Will the activity contribute to service infrastructure?	√ YES / NO
Is the activity a public amenity?	YES / √ NO
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	Unknown, depends on the contractor. Permanently – none.
What is the expected value of the employment opportunities during the development and construction phase?	Unknown
What percentage of this will accrue to previously disadvantaged individuals?	Unknown
How many permanent new employment opportunities will be created during the operational phase of the activity?	None
What is the expected current value of the employment opportunities during the first 10 years?	Unknown
What percentage of this will accrue to previously disadvantaged individuals?	Unknown

9. BIODIVERSITY

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

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

Refer to the Critical Biodiversity Areas Map (as obtained from the SANBi website) attached in Appendix A. The Preferred Route falls within a CBA2.

Systematic Biodiversity Planning Category				If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	**Other Natural Area** (ONA)	No Natural Area Remaining (NNR)	**CBA2** Critical Biodiversity Areas (CBAs) are areas of the landscape that need to be maintained in a natural or near-natural state in order to ensure the continued existence and functioning of species and ecosystems and the delivery of ecosystem services. In other words, if these areas are not maintained in a natural or near-natural state then biodiversity conservation

				targets cannot be met. Maintaining an area in a natural state can include a variety of biodiversity-compatible land uses and resource uses. CBA2's are defined as *Near-natural landscapes* and the land management objectives are: • Ecosystems and species are largely intact and undisturbed. • Areas with intermediate irreplaceability or some flexibility in terms of area required to meet biodiversity targets. There are options for loss of some components of biodiversity in these landscapes without compromising the ability to achieve targets. • These are landscapes that are approaching but have not passed their limits of acceptable change. **Other Natural Areas** These areas are production landscapes, where the aim is to manage land to optimise sustainable utilisation of natural resources.

b) Indicate and describe the habitat condition on site

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Detail regarding the vegetation condition is addressed in the **Vegetation Ecological Investigation** (attached as Appendix D) and summarised in Section B, paragraph 4, "Groundcover" of this report.		
Natural	40%	The area along the preferred route transverses mainly game farms
Near Natural (includes areas with low to moderate level of alien invasive plants)	40%	The area along the preferred route transverses mainly game farms
Degraded (includes areas heavily invaded by alien plants)	10%	Some areas are invaded by alien plants
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	10%	The last stretched of the preferred route runs along agricultural fields

c) Complete the table to indicate:

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

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

Please refer to the SANBI map "Threatened Ecosystems" – according to this map the study area does not fall within either Critical, Endangered or Vulnerable ecosystems.

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

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

Detail regarding the vegetation condition is addressed in the **Vegetation Ecological Investigation** (attached as Appendix D), which was undertaken by EnviroGuard Ecological Services CC. It is also summarised in Section B, paragraph 4, "Groundcover" of this report.

BIRD IMPACT ASSESSMENT

A **Bird Impact Assessment** (included in Appendix D) was undertaken by Chris van Rooyen Consulting and is summarised below.

Important Bird Areas

The study area is situated approximately 27km from an Important Bird Area (IBA), but the IBA is not expected to be impacted by the proposed project. An active vulture restaurant is situated at the Mankwe Wildlife Reserve vulture research site approximately 18km north-west of the proposed Dam Switching Station. Likewise, due to the distance from the proposed project, no impacts on vultures at the restaurant linked directly to the proposed project are expected. The Scheerpoort Cape Vulture colony is situated approximately 43km south of the proposed Lethabong Substation on the southern cliffs of the Magaliesberg. The avifaunally significant Rooikoppies Dam at its closest point is located approximately 2.7km east of the proposed third alternative alignment. With the possible exception of vultures, the proposed power line is not expected to directly influence the avifauna at any of these localities, because the development footprint does not extend into these areas.

The most important relevant protected area, from an avifaunal perspective, is the Vaalkop Dam Nature Reserve, a North-West Provincial nature reserve. The 12 000ha Vaalkop Dam Nature Reserve encompasses dense woodland and the 1 045ha Vaalkop Dam which, because of its dynamic water levels, supports a rich and diverse waterbird community. The surrounding area with its mosaic of woodland, the Elands and Hex Rivers, agricultural landscapes and reed-lined settling ponds creates further prime bird habitat.

Vegetation types and bird habitats

The natural vegetation type in the study area is Central Sandy Bushveld (Mucina & Rutherford). It is generally accepted that vegetation structure, rather than the actual plant species, influences bird species distribution and abundance. Therefore, the vegetation description below does not focus on lists of plant species, but rather on factors which are relevant to bird distribution.

Woodland

Moist woodland (which forms part of the savanna biome and also encompasses Central Sandy Bushveld) is the dominant vegetation type in the study area and consists of a grassy under-storey and a distinct woody upper-storey of predominantly broad-leaved, winter deciduous trees and tall shrubs. Soil types are varied but are generally nutrient poor. The savanna biome contains a large variety of bird species (it is the most species-rich community in southern Africa) but very few bird species are restricted to this biome. It is also relatively well conserved compared to the grassland biome. The savanna biome is particularly rich in large raptors, and forms the stronghold of Red Data species such as White-backed Vulture, Cape Vulture, Martial Eagle, Tawny Eagle, and Lappet-faced Vulture. Apart from Red Data species, it also serves as the stronghold of several non-Red Data raptor species, such as the Brown Snake Eagle *Circaetus cinereus*, Black-chested Snake Eagle *Circaetus pectoralis*, and a multitude of medium-sized raptors for example the migratory Steppe Buzzard *Buteo vulpinus*, African Harrier Hawk (Gymnogene) *Polyboroides typus*, Wahlberg's Eagle *Aquila wahlbergi* and African Hawk Eagle *Aquila spilogaster*. Apart from raptors, woodland in its undisturbed state is suitable for a wide range of other power line sensitive birds, including the Kori Bustard *Ardeotis kori*.

It is likely that most of the species mentioned in the preceding paragraph (except Kori Bustard) still occur in the study area from time to time, although some probably only sporadically due to habitat transformation. The natural vegetation in the area where the new line is to be constructed originally comprised natural woodland, and this is largely still the case in the study area as a whole, except for Alternative 3, which skirts and crosses several agricultural areas.

The area around the proposed Dam switching station has also been transformed with the establishment of industrial/agricultural infrastructure (e.g. the Vaalkop Dam and Magalies Water purification plant) and agricultural activity which cleared areas of the original woodland, especially along the Elands River.

Agriculture

The agricultural activity is mostly pivot irrigation with cereals crops and fodder planted on a rotational basis, which are irrigated with water from the Crocodile and Elands Rivers. In general, the agricultural areas are less important for Red Data power line sensitive species, due to the fact that the original woodland has been completely eradicated. In general, agricultural monocultures are less important for the Red Data power line sensitive species that might still occur in the study area, as it lacks the structural variety of the original woodland. The tiling of soil is one of the most drastic and irrevocable alterations wrought on natural systems. It completely destroys the structure and species composition of the original vegetation. Furthermore, the ecology of cultivated fields are essentially unstable because it is intensively managed, often resulting in high variation over the short and medium term. Nonetheless, some species might benefit to some extent from the clearing of the original woodland, e.g. Black-winged Pratincole and Yellow-throated Sandgrouse, and Lanner Falcon which on occasion hunt small birds in agricultural areas.

River, dams and wetlands

The two most important rivers in the study area are the Crocodile River and the Elands River. The Elands River is a perennial river impounded and controlled by the Vaalkop Dam. Drainage lines are important habitat for birds in that they act as corridors of microhabitat for water birds, while the riparian vegetation on the banks provide cover for skulking species such as African Finfoot and White-backed Night-Heron could potentially

occur in quiet backwaters of both rivers with overhanging riparian vegetation. The extensive reed-beds in the river channels could attract African Marsh-Harrier. The large pools in the river channel may attract Red Data species such as Yellow-billed Stork and Marabou Stork. A host of non-Red Data species is also dependent on drainage lines for food and shelter.

There is a lot of run-off and overflow water coming out of the sludge dams and return pumps from the Magalies Water Works that is flowing into the Elands River. This has created a permanent stream and artificially large wetland area. The sludge dams and the surrounding wetland area has become a focal point for water birds. Red Data power line sensitive species that could be attracted to the sludge dams and associated wetland habitat include Greater Flamingo, Yellow-billed Stork, African Marsh-Harrier, African Grass-Owl, Greater Painted-snipe, Half-collared Kingfisher and Marabou Stork. Pink-backed Pelican and Lesser Flamingo could occur sporadically. African Grass-Owl land African Marsh-Harrier could be attracted to a large marshy area in cultivated lands next to pivots and south of the Elands River..

The permanent supply of irrigation water from the Crocodile River has resulted in several farm dams in the study area, especially along Alternative 3. Large sections of the Rooikoppies Dam are infested with alien aquatic weeds, but there are limited areas of open, sandy shoreline with rock outcrops. Dams are attractive to a variety of birds, and could on occasion attract Red Data species such as Black Stork, Yellow-billed Stork, Marabou Stork, Greater Flamingo, Lesser Flamingo and Pink-backed Pelican.

ASSESSMENT OF IMPACTS

Displacement through habitat transformation and disturbance

As far as the proposed Lethabong substation station is concerned, the habitat (dense woodland) does not contain particularly unique features that will make it critically important for Red Data power line sensitive species. The species that will be most directly affected by the loss of habitat are the smaller, non-threatened passerines that are currently potentially resident in that patch of vegetation. It is not envisaged that any Red Data species will be permanently displaced from the study area by the habitat transformation that will take place at the site of the proposed substation.

Collisions with the proposed power line

In the case of water-associated birds, the Elands and Crocodile Rivers and their tributaries might potentially hold some attraction to these species, and also for large raptors that use exposed shoreline and sandbanks in the river for drinking and bathing. Farm dams in the Crocodile River, and the sludge dams and associate wetland habitat in the Elands River are important potential focal points for birds, including Red Data species such as Yellow-billed Stork, Black Stork, Greater Flamingo, Lesser Flamingo and others. A power line that skirts these focal points, or run between them, will pose a collision risk to several Red Data collisions sensitive species.

Electrocutions

A mono-pole steel pole will be used for the new 88kV lines. Clearance between phases on the same side of the pole structure is normally around 2.2m for this type of design, and the clearance on strain structures is 1.8m. This clearance should be sufficient to prevent phase – phase electrocutions of birds on the towers. The length of the stand-off insulators is likely to be a maximum of 1.5 metres. This is relevant as birds such as vultures are able to touch both the conductor and the earthed pole simultaneously potentially resulting in a phase – earth electrocution. This is particularly likely when more than one bird attempts to sit on the same pole, e.g. when vultures congregate at a carcass.

Cape Vultures, White-backed Vultures and (rarely) Lappet-faced Vultures could forage over the study area, given the close proximity of the Pilanesberg National Park, and the vulture "restaurant" at the Mankwe Wildlife Reserve. There are plenty of livestock and game in the surrounding area (e.g. in the Vaalkop Dam Nature Reserve), and should a carcass be available to the birds, they might attempt to roost on the poles. This is likely to be a sporadic event, rather than a regular occurrence. The pole design holds no inherent electrocution risk for large solitary raptors in the study area, e.g. several species of eagles, as they almost never perch together in large numbers next to each other.

SELECTING A PREFERRED ALTERNATIVE

A *risk assessment* was undertaken to arrive at a preferred alternative for the proposed power line in terms of impacts on power line sensitive Red Data avifauna. The following factors were taken into account: water bodies, rivers, existing power lines, roads, towns and industrial developments, agricultural lands, highly disturbed woodland and moderately to lightly disturbed woodland.

From the assessment it emerged that Route Alternative 3 will have the lowest risk, followed by Alternatives 1 & 2 which are practically identical in terms of risk.

RECOMMENDATIONS

- *Power line*: The spans that skirt or cross drainage lines and water bodies should be marked with Bird Flight Diverters on the earth wire of the line, five metres apart, alternating black and white.
- *Poles*: The poles should be fitted with bird perches on top of the poles to draw birds, particularly vultures, away from the potentially risky insulators.

CONCLUSION

The construction of the proposed Lethabong substation and associated power lines will pose a **limited threat** to the birds occurring in the vicinity of the new infrastructure. The proposed alignments of the all 3 alternative power lines pose a **medium collision risk**, and a **medium electrocution risk**, in particular to vultures. With the **implementation of appropriate mitigation** measures, the risk should be reduced to **low for both impacts**. The habitat transformation associated with the construction of the power line should have a **low impact**. The impact of habitat transformation associated with the substation sites should be low and should only affect a few non-Red Data species at a local level.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Also refer to Appendix E1 where proof of the advertisement and notices are given

Publication name	Brits Pos		
Date published	26 November 2013		
Site notice position		**Latitude**	**Longitude**
Beestekraal Road, close to the Dam Switching Station and entrance to the Vaalkop Dam Nature Reserve		25^0 18' 06.67" S	27^0 29' 40.99" E
T-junction of the Beestekraal Road and the road leading to the R511 (Alternative 3)		25^0 22' 28.16" S	27^0 33' 32.68" E
T-junction of the Beestekraal Road and the road leading to the new Lethabong substation (where the Alternative Route swings west)		25^0 25' 12.61" S	27^0 31' 33.08" E
Lethabong Substation		25^0 25' 34.43" S	27^0 31' 26.97" E
First entrance gate of the Magalies Water Servitude Road (Preferred Route and Alternative Route 2)		25^0 24' 40.85" S	27^0 31' 10.39" E
T-junction in the approximate middle of the Preferred Route. It is at this point where the new powerline will run along an existing 88kV line		25^0 20' 29.81" S	27^0 31' 15.70" E
Date placed	26 November 2013		

Include proof of the placement of the relevant advertisements and notices in Appendix E1.

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 54(2)(e) and 54(7) of GN R.543.

Actions undertaken during the initial Public Participation Process

- A list of all the directly Affected Landowners was compiled;
- A general IAP list, which includes municipalities, government departments and other applicable organisations, was compiled;
- Background information was emailed, faxed and posted to all affected and interested parties;
- 6x on-site notices were placed along the power line route on 26 November 2013; and
- A newspaper advertisement was placed in the local Brits Pos on 26 November 2013.

Distribution of the draft Basic Assessment Report (BAR) for comment

The Draft BAR, this document, is distributed in the following manner (a 40-day comment period applies):

- Hard copies are delivered to:
  - National Department of Environmental Affairs;
  - North-west Department of Economic Development, Environment, Conservation and Tourism: Development Impact Management;
  - Department of Water Affairs
  - Municipal Manager: Madibeng Municipality; and
  - Municipal Manager: Rustenburg Municipality
  - NW Parks & Tourism Board
  - Vaalkop Nature Reserve

- All registered Interested and Affected Parties will receive an electronic copy of the draft BAR, where possible. They will also be notified that a hard copy of the document is available for perusal at Kwamahla Lodge (this is also where the open day was held).

Distribution of Final Basic Assessment Report for comment

- All comments received will be addressed accordingly and will be documented in the Final BAR to be submitted to the Department of Environmental Affairs for approval.

Key stakeholders (other than organs of state) identified in terms of Regulation 54(2)(b) of GN R.543:

List of Directly affected Land Owners on the Preferred Alternative Route
(refer to Appendix E.5 for contact details)

REGISTERED LANDOWNER: PROPERTY: CONTACT PERSON
Department of Rural Development and Land Reform, North West: R/E of the Farm Hartbeestfontein 228 JQ; Mr Hugh Zackey
Rustenburg Local Municipality, North West: Portion 3 of the Farm Hartbeestfontein 228 JQ, Dr M K Mako and N Nkele
Magalies Water: Mr Buks Strydom
Kwamahla Lodge: Plaas Kortbegrip 201 JQ: Mr Hennie & Mrs Juna Kloppers
Portion 76 of the Farm Beestekraal 199 JQ; Mrs Isabella Elizabeth de Beer (Son: Mr Johan de Beer)
Thaba Morula Boerdery CC: Portion 12 & 23 of the Farm Yzerfontein 198 JQ; Mr Andre de Wet
Portion of Portion 45 of the Farm Yzerfontein 198 JQ; Mr Anton Knoetze
Portion 40 of the Farm Yzerfontein 198-JQ; Mr C J & J F C Bester
Ramelebane Communal Property Association: Portions 27, 31, 34, & 43 of the Farm Yzerfontein 198 JQ; Mr Bisman Mosowe
Dikgatlhong Communal Property Association: Portions 2, , 27,38, 39, 75 en 104 of the Farm Tweerivier 197 JQ; Mr Charles Moagi

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

Proof of distribution of Background Information Documents is included in Appendix E.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

3.1 Comments received during the initial Advertising Period from 26 November 2013 up to the Public Open Day, which was held on 13 March 2014.

Summary of main issues raised by I&APs	Summary of response from EAP
Mr. H. Kloppers, Kwamahla Lodge **Farm Kortbegrip 201** • This will be the third servitude registered over the property. Property is 260ha in extent. This will impact negatively on the property value. • Property is utilised as an eco-tourism enterprise. The powerline will have a negative visual impact. • The property already overlooks the Magalieswater Reservoir and a cell phone mast. • Proposal that the powerline runs to the west of the "koppie". • The conservation of trees must be a priority. • Mr. Kloppers indicated that he is in principle not against the proposed servitude, but the financial compensation must be in line with the market value of the farm.	• Mr Kloppers indicated that he is happy with the servitude running over his property and signed a servitude agreement with Eskom.
The following residents of the Bushwillow Estate / Portions of the Farm Vaalkop objected to the development: • **Derick Peacock, Portion 24 Vaalkop 76 JQ** • **Maretha Alant** • **Ian Bloxam: Chairman Bushwillow Landowners Association** • **Brian and Bev Fowler: Portion 42 Bushwillow** • **Alan Williams, Portions 17, 18 and 19 Vaalkop 76 JQ** • **Anthony Swart, Portion 8 Vaalkop 76 JQ** • **Sue and Norval Lippiatt, Portion 33 Bushwillow** **The reasons for their objections are:** • There is an objection against the Preferred Route as well as the second alternative route. • Both routes are situated for almost 80% of its length along a watershed / ridge line, which is elevated comparing to the surrounding landscape. • The route will be clearly visible from the Bushwillow Estate. • A further power line will have a negative impact on the property value. • The proposed Greater Vaalkop Conservancy Area (spearheaded by the NW Parks & Tourism Board) is almost finalised. The Preferred Route will run through it. • Alternative 3 Route is preferred.	• Strict mitigation measures are provided in the EMP to ensure the protection of the natural environment. The NW Parks & Tourism Board as well as the management of the Vaalkop Dam Nature Reserve is included in the public participation process. They attended the public meeting and will also receive a hard copy of the Draft BAR to further ensure the protection of the natural environment, thereby acknowledging the existence and protection of the Greater Vaalkop Conservancy Area. • It is also important to note that, apart from visual impact, the impact caused by powerlines are mainly during the construction phase, and therefore not permanent. • Due to existing farming practices, Alternative 3 is neither practical nor feasible and cannot be considered as a workable route alternative. • *Visual impact* ○ According to the understanding of the consultants as to the position of the Bushwillow Estate, the new powerline will be further than 3km from the Estate (most of the route will be more than 5km away). It is doubtful whether the route will be clearly visible from the Estate and the chances that it could be intrusive and impact on property values within the Estate are slim and unlikely. ○ The new line will follow an existing power line for the approximate last third of the route. The presence of pre-existing power lines in an area serves as a

	mitigatory factor (rather than a cumulative negative impact) in terms of establishing new powerlines in the same area. ○ The ability of the surrounding environment to absorb the visual impact of the powerline is relatively high due to the topography of the landscape being mostly flat and dense natural vegetation throughout most of the proposed route. ○ The point at which a power line may be perceived as intrusive or offensive, is a subjective judgment, however in general 88kV lines do not evoke overpowering changes to sense of place as they are absorbed into the landscape or a skyline within a few hundred meters. They are such a common feature along our road systems that most people accept them as part of the landscape.
Pelham Jones, CEO and Director of Mziki Private Nature Reserve; Schietfontein 130 JQ and Portions 3, 7 and R/6 Klipplaat 129 JQ • Above-mentioned properties are fenced and managed as a single land unit, known as Mziki Private Nature Reserve. • Mziki NR objects to the Preferred Alternative as well as the second Alternative based on the negative visual impact that these line will cause. • The line will make it unfeasible for the properties to the east of the line to be included in the proposed Nature Conservancy for the area. • Alternative 3 is preferred.	• The Preferred Alternative does not cross any part of Mziki Private Nature Reserve.
Johan van Rensburg, Calcuplan • Wants to be registered as an IAP.	• Registered as such
The Municipal Manager **Rustenburg Local Municipality** • Acknowledge receipt of initial documentation.	• Noted
Phuti Mahloko, NW Parks & Tourism Board • EIA process is noted.	• Noted

Pieter Nel: Manager Ecological Services: Conservation Management Division: NW Parks & Tourism Board Mr Nel requested to be registered as an IAP.	• Registered as such

3.2 Comments received on and after the Public Open Day up to compilation of the Draft BAR

The following people sent their apologies for not attending the public meeting:

- Madibeng Local Municipality: Waste & Environmental Division: Mpho Magasa
- Department of Agriculture, Forestry & Fisheries: Directorate: Land Use and Soil Management: Mr David Kleyn

Summary of main issues raised by I&APs	Summary of response from EAP
Vaalkop Nature Reserve: Protected Areas Management & Expansion: MD Lesejane • The NW Parks & Tourism Board is in the process of confirming the declaration status of the Vaalkop Nature Reserve and they are also in the process of incorporating more land into the reserve. • Alternatives 1 & 2 cuts through the proposed Eco-Tourism destination. • The powerlines will have an adverse visual impact and Alternative 3 is therefore preferred.	• After extensive site investigations it became clear that, due to existing farming practices, Alternative 3 is neither practical nor feasible and cannot be considered as a workable route alternative. • Strict mitigation measures are provided in the EMP which should ensure the protection of the natural environment. The Preferred Route, with mitigation measures in place is supported by both the Vegetation as well as Bird Impact Assessments. • It is also important to note that, apart from visual impact, the impact caused by powerlines are mainly during the construction phase, and therefore not permanent. *Visual impact* • The new line will follow an existing power line for the approximate last third of the route. The presence of pre-existing power lines in an area serves as a mitigatory factor (rather than a cumulative negative impact) in terms of establishing new powerlines in the same area. • The ability of the surrounding environment to absorb the visual impact of the powerline is relatively high due to the topography of the landscape being mostly flat and dense natural vegetation throughout most of the proposed route. • The point at which a power line may be perceived as intrusive or offensive, is a subjective judgment, however in general 88kV lines do not evoke overpowering changes to sense of place as they are absorbed into the landscape or a skyline within a few hundred meters.

	They are such a common feature along our road systems that most people accept them as part of the landscape.
NW Parks & Tourism Board: MJ Setuki *and* Vaalkop Conservancy: Ephraim Morei • Option B is recommended as it would not impact on the planned conservancy project.	• See comment above
Charles Moagi: Dikgatlhong • Alternative 3 is preferable because the other two options will impact on the future plans of the conservancy.	• See comment above
Ramelebane Communal Project Association • The foreseen no specific problems regarding the line • They will present the powerline options to their communities • Note that land claims have not yet been finalised.	• Comment noted
Mr Marx: Farm 83 portion 199 • He is against Alternative 3	• After extensive site investigations it became clear that, due to existing farming practices, Alternative 3 is neither practical nor feasible and cannot be considered as a workable route alternative.
Mr Griesel • He rents land from Dikgatlhong and the powerlines will not affect these properties.	• Comment noted
Mr Wessie Badenhorst • He is open for discussions	• Comment noted

3.3 Meeting with specific landowners to confirm the route at the koppie in the approximate third of the route

The alignment of the route around the koppie in the approximate third of the route was not confirmed as Mziki Ranch will not allow the proposed power line to run on the western side of the koppie, thereby transecting their property.

In order to accommodate the above objections, a meeting was held with the aplicable landowners on 27 May 2014 at Thaba Morula (the minutes are attached as Appendix E6c). The purpose of the meeting was to communicate the possibility with the relevant landowners to have the power line passing east of the koppie. The landowners on the eastern side of the koppie agreed to this, provided that:

- Eskom must emphasise the fact of the impact being bigger on smaller properties due pro rata impact on the land to the evaluators;
- The landowners have to meet the evaluators personally on site;
- Reasonable and fair compensation must be paid; and
- Only selective bush clearing should be implemented during the maintenance of the servitude.

3.4 Comment received on the Draft BAR (distributed for a 40 day commenting period: 3 September to 4 November 2014)

Thaba Morula: Mr Wicus de Wet (directly affected landowner)
Mr de Wet wanted to see the land valuation form from which Eskom is working.

Response
As environmental consultants, Landscape Dynamics does not work with land evaluations at all. The best person to contact would be the Eskom official whom already had contact with Mr de Wet regarding the negotiation process.

NW Department of Rural, Environment & Agriculture: Control Environmental Officer Grade A: Development Impact Management: Ms Motshabi Mohlalisi
The acknowledged received of the Draft BAR and that the project has been assigned to Ms Queen Imasiku.

Response
Comment noted and IAP register updated.

Mziki Five (pty) Ltd and Mziki Threee (pty) Ltd: Mr Ken Barker
It was confirmed that the line will now pass on the east side of the small koppie next to the 'Mziki North gate' and therefore not enter the Mziki property at all. The members will be delighted that their North entrance gate will remain unaffected by the new power line. It is appreciated that the line has been moved as indicated.

Mr Barker wanted to know when construction will commence.

Response

- Comment noted.
- It is not confirmed when Eskom plans to commence with construction, but it seems that it may be early next year. The directly affected landowners will however all be informed well in advance by Eskom before construction commences.

Rustenburg Local Municipality: Directorate Community Development: Unit Manager: Integrated Environmental Management: Ms Lilian Sefike

- According to the Municipality's EMF, the site is situated within the Environmental Management Zone, identified as Agricultural Holdings Management Zone, Conservation Management Zone, Aquatic Management Zone and Built up Area Management Zone. The proposed project will take place outside of the urban edge. SANBI wetlands control zones have been identified in the proposed areas.
- The Unit is satisfied that the project would not have a substantial detrimental impact on the environment and that potential detrimental impact resulting from this project should be mitigated to acceptable levels.
- The Lethabong project will ensure more reliable power supply to the area.
- The following recommendations are being made:
  - All recommendations as made in the BAR and EMP must be implemented and complied with. Areas designed as sensitive must be delineated and appropriate buffer zones established.
  - All hazardous and solid waste must be removed to a licensed waste disposal site for the type of waste produced. No solid waste may be disposed of on site. The storage of solid waste, until such a time as it may be disposed of, must be in a manner acceptable to the Municipality, DWA and DEA.
  - Measures for controlling and eradicating invasive and exotic plant species on the disturbed surface must be developed and implemented. The applicant is required to monitor and eradicate any vegetative weedy species on a monthly basis for the period of six months after completion of construction activities.
  - Precaution must be taken to reduce the possibility of soil erosion and pollution.
  - Provisions must be made for the adequate storage of used and contaminated substances such as oil, lubricants and other petroleum products during the construction and operational phases. It must be stored in such a way that it does not pose a threat to the environment.
  - Any complaint from the public during the construction and operation of the project must be attended to by the person involved as soon as possible to the satisfaction of the parties concerned. A complaint register must be kept up to date and should be produced upon request.
- It is recommended that the proposed Lethabong project be supported.

Response

- Comments noted
- The recommendations as mentioned are included in the EMP.
- Regarding the management of alien vegetation within the Eskom servitude, the following applies (as stipulated in the EMP):
  - Alien invasive vegetation within the power line servitude and around the substation should be removed on an annual basis for the first five years after construction has been completed. Preferably, no herbicides should be sprayed, as this could kill adjacent non-target species. Trained personnel should be contracted to undertake alien invasive vegetation management, and no soil disturbance should be allowed.
  - The management of alien vegetation is governed by Regulation GNR.1048 of 25 May 1984 (as amended) issued in terms of the Conservation of Agricultural Resources Act, Act 43 of 1983. In terms of these regulations, Eskom must "control" i.e. to combat Category 1, 2 and 3 plants to the extent necessary to prevent or to contain the occurrence, establishment, growth, multiplication, propagation, regeneration and spreading such plants within servitude areas or land owned by Eskom.

South African Heritage Resource Agency: Mr Phillip Hine

- The preferred route alignments must be subject to a final walk-down. Specific emphasis must be placed on tower locations. The results of the walk down must be submitted to SAHRA for comment.
- No further palaeontological studies are required for the project.
- If any archaeological/palaeontological or any other heritage resources are identified during construction activities, SAHRA Archaeology, Palaeontology and Meteorites (APM) Unit (Colette Scheermyer/Phillip Hine, tel. 021 462 4502), and an archaeologist/palaeontologist, dependent on the nature of the find must be alerted immediately. If the newly discovered heritage resource is considered to be significant, a mitigation assessment may be required.

Response

- It is stipulated in the EMP that a walk-down must be done once the route design has been finalised. Please note that the route corridor will not change as a result of possible findings during the walk-down, only the position of the pylons may slightly be moved.
- Comment noted
- This is included in the EMP.

Thaba Morula: Mr Andre de Wet

Mr De Wet demanded directly to the lawyer that no vegetation will be damaged or removed over Portion 12 & 23 of the Farm Yzerfontein 198-JQ. They requested confirmation in writing.

Response

Landscape Dynamics responded via email as follows:

Eskom cannot make a promise that "*no vegetation will be damaged or removed*". During the construction process damage to vegetation inevitably does take place. However, the Environmental Management Plan provides various strict measures to prevent damage to the natural veld as far as possible as well as mitigation measures and rehabilitation guidelines to ensure the least possible impact on the environment during and after construction.

The following is applicable to the vegetation on Mr de Wet's property:

- The minutes of the meeting held on 27 May 2014 (attached), states the following: "Only selective bush clearing could now take place – to be planned in close cooperation with the relevant landowners. Generally trees are, in the present days, only removed or pruned where they could affect the operation of the powerline."
- The following was now written into the Final EMP which will be submitted to the Department of Environmental Affairs for their approval:
  - *"Bush clearing must be planned in close cooperation with the relevant landowners. It should be kept in mind that, generally speaking, trees are only removed or pruned where they could affect the operation of the powerline.*
  - *Very specifically, Mr Andre de Wet from Thaba Morula (Portion 12 & 23 of the Farm Yzerfontein 198-JQ) must be contacted before any vegetation clearance takes place on his property. Thorough discussions must take place regarding the removal and/or pruning of any plant and tree species.*

The Basic Assessment Report will be submitted to the Department of Environmental Affairs for their perusal and ultimately, the issuing of the Environmental Authorisation. Mr de Wet will be informed of the Department's decision in due course.

3.5 Submission of Final BAR

As can be seen from the above comment, no comment was received that changed the essence of the Draft BAR. The Final BAR is therefore now submitted to the Department of Environmental Affairs for perusal and ultimately, the issuing of the Environmental Authorisation.

4. COMMENTS AND RESPONSE REPORT

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

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Municipalities

Rustenburg Local Municipality: The Municipal Manager: Dr M K Mako and N Nkele
Rustenburg Local Municipality: Town Planning Section, The Manager Town Planning and the Manager of Planning and Human Settlement: Mr T Molwantwa and Mr J Pieters
Rustenburg Local Municipality: Unit Manager for Environment: Ms Lillian Sefike
Rustenburg Local Municipality : The Director - Infrastructure, Technical and Service: Mr Michael Mokgwamme
Rustenburg Local Municipality The Councillor, Ward 28
Madibeng Local Municipality: Environmental Section: Mr R B Moatshe
Madibeng Local Municipality: Town Planning Section, The Director - Human Settlement and Planning: Mr Bathabile Moabi
Madibeng Local Municipality: The Director - Community Services: Ms Neo Matsena
Madibeng Local Municipality: The Director - Infrastructure, Technical and Service: Mr Michael Lelaka
Madibeng Local Municipality: The Municipal Manager: Mr M Monde Juta
Madibeng Local Municipality: The Councillor, Ward 14
Bojanala District Municipality: The Municipal Manager: Mr Innocent Sirovha and the Manager of the Office of the Municipal Manager – Ms Tsholofelo

National and Provincial Departments

Department of Water Affairs, Northwest Region: The Assistant-director: Water Resources Management Crocodile (West) Marico: Ms Letabo Ramashala
North West Department of Public Safety & Liaison: The Acting Head of Department: Mr. B Mahlakoleng, cc B. Mogoerane
North West Department of Public Works, Roads and Transport: The Chief Director Infrastructure: Mr M Gwavu (Acting)
North West Department of Public Works, Roads and Transport: The Chief Director Roads Management: Mr F N Thobakgale (Acting)
North West Government Department of Public Works, Roads and Transport: The Provincial Head Office: Mr Johan HP van Wyk
North West Department of Agriculture: The Head of the Department: Mr M Molefile
North West Department of Minerals and Resources: The Regional Manager: Mr Pieter Swart
South African Heritage Resources Agency: Heritage Officer, North West Province: Mr Phillip Hine
North West Provincial Heritage Resources Authority (NWPHRA)
SA National Roads Agency: Northern Region, The Regional Manager: Mr Jan Oliver

Transnet Freight Rail: Corporate Environmental Specialist, Risk Management: Mr Ndivhuwo Netshilaphala
Transnet Freight Rail: Environmental Officer (Working in the region): Mr Francis Rahlapane
North-west Department of Rural Development and Land Reform: The Chief Director, Land Restitution Support: Mr Lengane Bogatsu
Department Rural Development and Land Reform: Regional Land Claims Commissioner: Mr Harry Maphutha
Department Rural Development and Land Reform, District Manager: Mr Hugh Zackey, Mr Daniel Masina
The Department of Agriculture, Forestry and Fisheries: Control Resource Auditor: Land use and Soil Management: Mr Piet Theron
Department of Agriculture, Forestry and Fisheries, Director: Land Use and Soil Management: Mr David Kleyn
Department of Agriculture, Forestry and Fisheries, Mr James Wallis
North West Parks and Tourism Board, Conservation Management Division: Manager Ecological Services: Mr Pieter Nel
North West Parks and Tourism Board, Conservation Management. Division: Environmental Compliance Officer: Mr Phuti Mahloko
Department Economic Development, Environment, Conservation and Tourism, North West Province, Chief Directorate: Environmental Services, Directorate: Environmental Quality Management: Ms Queen Imasiku

Include proof that the Authorities and Organs of State received written notification of the proposed activities as appendix E4.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

6. CONSULTATION WITH OTHER STAKEHOLDERS

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

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs must be included as appendix E5.

Copies of any correspondence and minutes of any meetings held must be included in Appendix E6.

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

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

Alternative Route 1 (preferred alternative)		
Activity and Impact Summary	**Significance Rating**	**Proposed Mitigation**
Soils Concrete foundations will be made for each pylon. Access roads could be constructed / upgraded. Vegetation, therefore, will have to be cleared. An increase in surface water runoff may occur which could lead to soil erosion.	Low	Mitigation measures are supplied in Appendix F: Impact Assessment, as well as in the EMP.
Vegetation Loss of natural vegetation, habitat fragmentation (loss of landscape connectivity), impacts on species of special concern (sensitive plant communities), establishment of declared weeds and alien invasive plants and an increased risk for veld fires could impact on Vegetation.	Low	Mitigation measures are supplied in Appendix F: Impact Assessment, as well as in the EMP.
Surface Freshwater Aquatic Ecosystems No freshwater systems are present.	None / low	No mitigation measures are necessary.
Groundwater Extra care is required to minimise the risk for potential groundwater pollution as a result of oil spills, etc. during the construction phase.	Moderate	Mitigation measures are supplied in Appendix F: Impact Assessment, as well as in the EMP.
Avifauna (birds) A risk for electrocution, birds colliding with powerlines and habitat destruction & disturbance could have an impact on the avifauna of the area.	Moderate	Mitigation measures are supplied in Appendix F: Impact Assessment, as well as in the EMP.
Fauna Disturbance and / or destruction of habitat and illegal placement of snares could impact on the fauna within the broader area.	Low	Mitigation measures are supplied in Appendix F: Impact Assessment, as well as in the EMP.

Alternative Route 1 (preferred alternative)		
Activity and Impact Summary	**Significance Rating**	**Proposed Mitigation**
Cultural/ Heritage No sites of cultural / heritage significance are present. There, however, is always the potential for the discovery of heritage resources of some kind.	Very low	Mitigation measures are supplied in Appendix F: Impact Assessment, as well as in the EMP.
Air quality Dust created by construction vehicles could impact on the air quality during the construction phase.	Low	Mitigation measures are supplied in Appendix F: Impact Assessment, as well as in the EMP.
Noise Labourers and machinery could result in noise pollution during the construction phase.	Low	Mitigation measures are supplied in Appendix F: Impact Assessment, as well as in the EMP.
Community An influx of workers could result in an increased risk for crime and safety during the construction phase.	Moderate	Mitigation measures are supplied in Appendix F: Impact Assessment, as well as in the EMP.
Visual impacts The preferred Alternative Route could have a negative visual impact on certain areas that are being utilised for eco-tourism enterprises, game farms, the Vaalkop Nature Reserve and the proposed Vaalkop Conservancy.	Low-medium	• The new line will follow an existing power line for the approximate last third of the route. The presence of pre-existing power lines in an area serves as a mitigatory factor (rather than a cumulative negative impact) in terms of establishing new powerlines in the same area. • The ability of the surrounding environment to absorb the visual impact of the powerline is relatively high due to the topography of the landscape being mostly flat and dense natural vegetation throughout most of the proposed route. • The point at which a power line may be perceived as intrusive or offensive, is a subjective judgment, however in general 88kV lines do not evoke overpowering changes to sense of place as they are absorbed into the landscape or a skyline within a few hundred meters. They are such a common feature along our road systems that most people accept them as part of the landscape. No mitigating measures are proposed.

Alternative Route 1 (preferred alternative)		
Activity and Impact Summary	**Significance Rating**	**Proposed Mitigation**
Land-use Disturbance to agricultural and other land-use activities could take place with an associated negative impact on the land-use within the study area.	Low	Mitigation measures are supplied in Appendix F: Impact Assessment, as well as in the EMP.
Socio-economic Impact The 88kV network in the Brits area needs to be strengthened in order to create capacity to accommodate new loads in the area. Numerous applications for connection were received and many of them have been rejected due to a shortage of capacity. The construction of the Lethabong Substation and associated 88kV powerline will have a positive impact on the electricity provision for the area.	Positive impact	Positive impact – no mitigation measures are proposed.

Alternative Route 2		
Impacts as described above also apply to Alternative 2, with additional impacts as described below		
Soils Large sections of rocky hills are found.	High	Use the Preferred Alternative

Alternative Route 3		
Impacts as described above also apply to Alternative 2, with additional impacts as described below.		
Soils Large sections of rocky hills are found.	Low	Use the Preferred Alternative
Surface Freshwater Aquatic Ecosystems • An artificial dam constructed for irrigation and as a water hole for antelope is present along the proposed route 3. • One seasonal stream is present on this route. • The water canal in some areas will also need to be considered if this route is used.	Medium	Use the Preferred Alternative

Conclusion of the Impact Significant Rating
Identified impacts that the proposed power line may have on the environment can be easily and reasonably be mitigated to an acceptable level. No impacts were identified that could influence the feasibility and viability of the Lethabong project.

A complete impact assessment in terms of Regulation 22(2)(i) of GN R.543 must be included as Appendix F.

2. 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.

Please note that a comprehensive Impact Assessment (with detailed mitigation measures) is supplied in Appendix F. The Impact Statement below is a conclusion of this Impact Assessment.

The EAP recommends environmental authorisation for the preferred Alternative Route based on the following:

- **General**:
  - **Vegetation ecological investigation Assessment**: From a plant ecological point of view, all three routes are considered favourable. The proposed power line construction of anyone of the proposed routes should not have any long-term negative effects on the environment.
  - **Bird Impact Assessment:** The construction of all three the Alternative Routes will pose a limited threat to the birds occurring in the vicinity of the new infrastructure. Each of the power lines will pose a medium collision risk and a medium electrocution risk, in particular to vultures. However, with the implementation of appropriate mitigation measures, the risk can be reduced to low for both impacts.
  - **Heritage Impact Assessment**: From a heritage perspective there is no specific preference for any of the 3 route alternatives. Any of these, therefore, may be utilised.

Route specifics

- **Preferred Alternative Route 1**
  - The alignment of this route follows an existing power line for a section of the route.
  - The necessary agreements with the affected landowners have also been reached, specifically regarding the eastern alignment of it around the koppie.
- **Alternative Route 2**
  - The necessary agreements with the affected landowners (Mziki Private Nature Reserve) could not be reached, specifically regarding the western alignment of it around the koppie.
- **Alternative Route 3**
  - An artificial dam, a water hole for antelope, seasonal stream and water canals in some areas were found along this proposed route.
  - This route is mostly aligned along an existing tarred road, commonly known as the Beestekraal Road. Most of the development along this road, e.g farm houses and related agriculture buildings and agricultural fields are directly adjacent to or very close to this road. The proposed power line, therefore, will have a direct negative impact on these developments. This makes this route, from a land-use point of view, less favourable and impractical and this route is not feasible.

- **Conclusion**
  It is proposed that Alternative Route 1 be approved as the preferred route and that the necessary environmental authorisation for this route be granted.

No-go alternative (compulsory)

The 88kV network in the Brits area needs to be strengthened in order to create capacity to accommodate new loads in the area. Numerous applications for connections were received and many of them have been rejected due to a shortage of capacity. The proposed 88kV powerline will strengthen the wider network, thereby ensuring an enhanced and more reliable 22kV and 11kV network and supply.

Should the no-go option apply, the status quo will not just remain, but it will worsen. Electricity supply in the area will become less reliable and the negative impact on its users more intense. The economy of the area will also be further negatively affected.

SECTION E. RECOMMENDATION OF PRACTITIONER

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

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

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 implementation of the Environmental Management Plan must be a condition in the authorization of the project.

Is an EMPr attached?	√YES	NO

The EMPr must be attached as Appendix G.

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

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

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

_____

NAME OF EAP

_____ _____

SIGNATURE OF EAP DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps
- Locality Map
- Route Map, indicating the final Preferred Alternative 1 in red
- Co-ordinates for preferred and alternative routes
- SANBI Maps
    - Critical Biodiversity Areas
    - Protected Areas
    - Threatened Ecosystem Status
- Ecological Sensitivity Maps
    - Vegetation Units as well as Conservation Value and Ecosystem Functioning thereof
    - Areas that should be fitted with Birds Flight Diverters (BFD) and preferred BFD to be used

Appendix B: Photographs
- Photographs of the study area

Appendix C: Facility illustration(s)
- Sketches of typical lattice and monopole structure types as well as typical substation sites

Appendix D: Specialist reports (including terms of reference)
- Vegetation Ecological Investigation – Enviroguard Ecological Services
- Bird Impact Assessment – Chris van Rooyen Consulting
- Heritage Impact Assessment - Archaetnos Culture & Cultural Resource Consultants

Appendix E: Public Participation
- E1a – Proof of Placement of Advertisement: Onsite notifications
  E1b – Proof of Placement of Advertisement: Newspaper advertisement
- E2a – Background Information Document (BID)
  E2b – Proof of initial notification to Interested & Affected Parties
- E3 – Comments and Reponses Report
- E4 – Proof of Notification of availability of the Draft BAR to IAPs
- E5 – Complete register of Interested & Affected Parties
- E6 – Copies of Correspondence, notes and minutes of meetings
    - E6a) Comment received during the Initial Advertising Period from 26 November 2013 up to the Open Day
    - E6b) OPEN DAY
        - Proof of invitations sent to all IAPs on the Register of IAPs
        - Attendance Register
        - Comment received during and after the Open Day
    - E6c) Notes on the meeting with specific affected landowners and attendance register
    - E6d) Written comment received on the Draft BAR

Appendix F: Impact Assessment
- Impact Assessment

Appendix G: Environmental Management Programme (EMPr)
- Environmental Management Plan

Appendix H: Details of EAP and expertise
- Landscape Dynamics Company Profile

Appendix I: Specialist's declaration of interest
- Specialist's declaration of Interest

Appendix J: Additional Information
- None