



**PROPOSED CONSTRUCTION OF HERMES 132 KV
POWERLINE AND SUBSTATION DEVIATION, CITY OF
MATLOSANA LOCAL MUNICIPALITY, NORTH WEST
PROVINCE.**

DRAFT BASIC ASSESSMENT REPORT

October 2013

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PROPOSED CONSTRUCTION OF HERMES 132 KV POWERLINE AND SUBSTATION DEVIATION, CITY OF MATLOSANA LOCAL MUNICIPALITY, NORTH WEST PROVINCE.

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This report has been issued for public review as of 03 October 2013 to 03 November 2013



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environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

(For official use only)

File Reference Number:
Application Number:
Date Received:

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

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. 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.

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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

1.1 Background Information

Eskom Holdings SOC Ltd is proposing to construct a substation of about 80 x 80 m (6400m²) ; and an approximately 9km 132kV overhead power line from the deviation point of the previously authorised 140km power line from Hermes to Dominion Reefs, City of Matlosana Municipality, North West Province. The Authorisation (**DEA Reference Number: 12/12/20/1739**) for the project was granted on **Tuesday, 22nd February 2011**. However, due to the appeal from one of the landowners, a deviation of about 9 km and a new site for the location of the substation is proposed. The objective of the proposed powerline and substation is to strengthen the Hermes network capacity as well as to improve the quality of supply in these areas. The power line falls within the boundaries of Dr Kenneth Kaunda District Municipality, in the North West Province.

Following the project Environmental Authorisation, one of the affected landowners – Shiva Uranium lodged an appeal and Eskom entered into discussions with them, however Eskom has not been able to move forward as they could not reach an amicable solution with Shiva Uranium with regard to accessing their property. This deviation is therefore a resultant from this appeal. No alternatives to the proposed project (powerline and substation) were considered during the initial Basic Assessment process as the project was a result of an appeal lodged against the initial project. It has however emerged during the Basic Assessment process that the proposed substation site is located in an area of high ecological sensitivity; an alternative site located in the same property was therefore considered. This Basic Assessment Report (BAR) covers the findings of the site assessment and impacts identified in the Hermes deviation powerline and the associated Alternative sites for the proposed construction of the substation.

1.2 Project Description and Route Description

The proposed deviation will entail the construction of a 132kV distribution line and an approximately 9.5 km powerline. The proposed footprint of the Hermes substation is 6400m² (80x 80 substation). The distribution line will run from the proposed Hermes substation eastwards to Klerksdorp where it will terminate at the corner between the Farms of Elandslaagte 427 IP, Elandslaagte 330 IP and Wolverand 413 IP, North West Province.

As has already been mentioned, two alternative sites have been considered during the Basic Assessment for the location of the substation. Both Alternative sites are located on Portion 50 of the Farm Rhenosterspruit 326 IP. Please refer to **Figure 1** and **Appendix A** for project location, **Appendix B** for the Site photographs showing an overall view of the site, and **Appendix C** for the Infrastructural layout plans.

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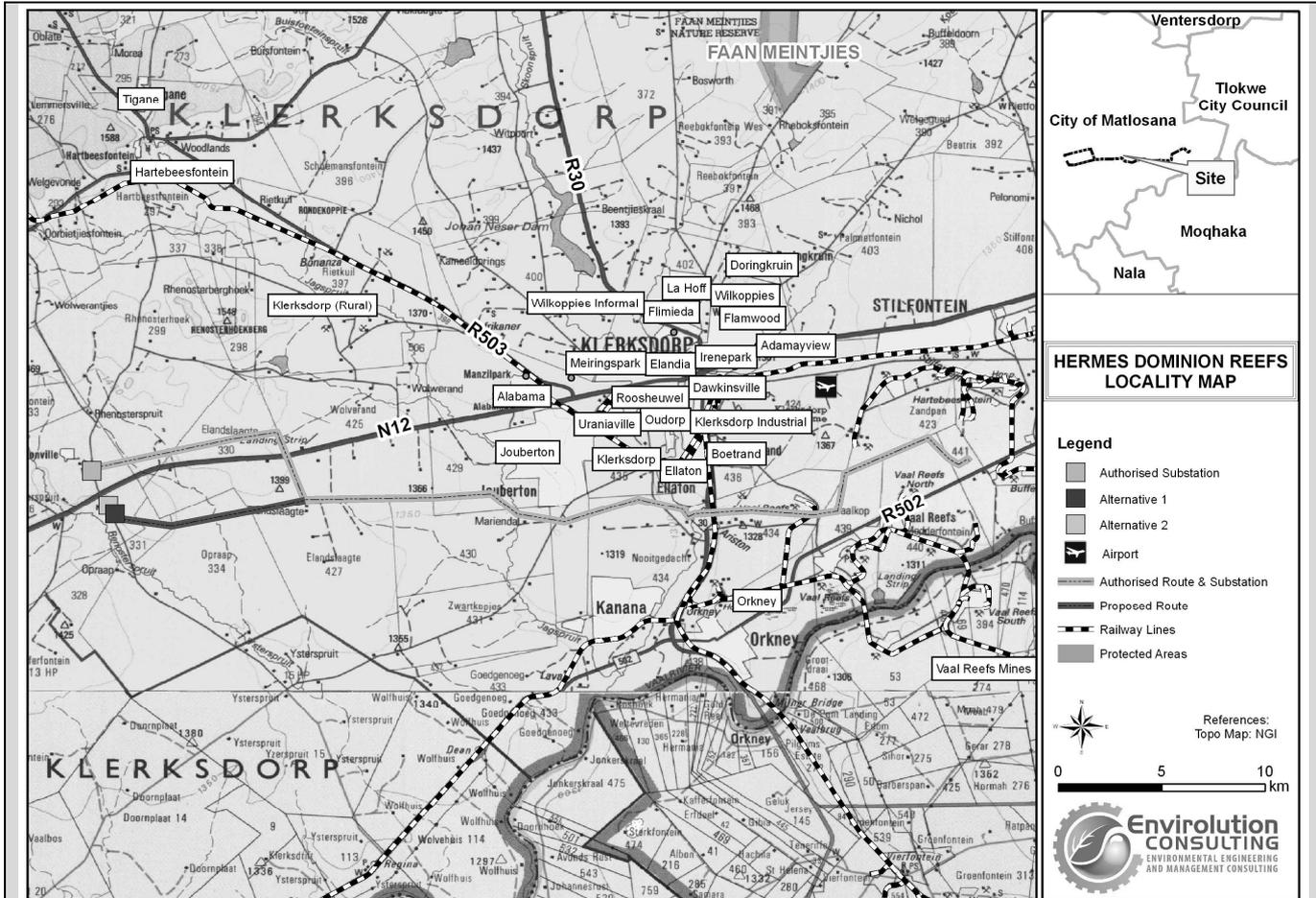


Figure 1: Map showing location of the powerline and substation in relation to the previously authorised route.

1.3 Project Locality

The study site falls within the quarter degree square 2626CD and is located about 30km west of the town of Klerksdorp in the North West Province. The site is situated south of the N12 between Klerksdorp and Wolmaranstad. A dirt road, D860, forms the western boundary of the proposed site (Please refer to Figure 1). A mining area is situated about 800m north-west of the proposed site.

1.4 Environmental Setting

The study area is located within the Middle Vaal Water Management Area and fall within Quaternary Catchments C24H & C24H. Annual rainfall is approximately 530 mm per annum and falls mainly during the summer months, often through thundershowers. The mean annual temperature is approximately 16.5°C and incidents of frost are on average ± 37 days per annum, while winters are often very dry.

Andesite of the Allenridge formation (Platberg Group; Ventersdorp Supergroup) is present in most of the site, along with Aeolian and colluvial sand overlying them. Typical soil forms include Avalon, Westleigh and Clovelly (Mucina & Rutherford 2006).

The regional vegetation of the study area is described by Mucina & Rutherford (2006) as Dry Highveld Grassland. It includes the Klerksdorp Thornveld in the far western portion of the study area while the remainder is covered by Vaal-Vet-Sandy Grassland.

1.5. Specialist studies

Several specialist studies have been undertaken to provide more detailed information on the environment aspects that may be affected by the proposed project. Specialist Ecological (Flora and Fauna), Wetland, Visual, Heritage and Geotechnical Assessments were undertaken during the Basic Assessment and their reports are attached as Appendices to this BAR.

1.5 Servitude Requirements

The servitude width required by Eskom for the 132kV overhead distribution line is 31 metres (15.5 metres from the centre of the powerline) while the separation distance between a 132kV line and any other line is 55m.

An 8 m-wide strip is generally required to be cleared of all trees and shrubs down the centre of distribution power line servitude for stringing purposes only. Any tree or shrub in other areas that will interfere with the operation and/or reliability of the distribution power line must be trimmed or completely cleared. Vegetation clearance for the proposed distribution power line will be minimal due to the mainly grassland habitat. The Eskom Standard and specifications for vegetation clearance and invasive alien plant management for new power line construction specifications have been incorporated into the Environmental Management Programme (EMPr), which will guide the construction, operational and maintenance phases of the project. A 132kV distribution substation normally require a footprint of about 1600m².

1.6. Access roads

For construction purposes the proposed sites can be reached via the existing access roads. No roads that trigger NEMA Regulations Listed Activities will be required. An existing gravel road (that will be upgraded as part of this development) provides access to the site. The use of roads on private property will be subject to the Environmental Management Programme (EMPr) and will be determined based on discussions with landowners should it be necessary.

Stormwater will be managed according to the Eskom Guidelines for Erosion Control and Vegetation Management (**Appendix G1**) as well as the Environmental Management Programme (EMPr) that has been compiled for the construction and operational phase.

1.7. Construction Site Camps

Normally the powerline contractor would set up at least one site camp but this does not necessarily need to be near the substation site. The contractor may however prefer to use a fully serviced site in another location. The exact location of the construction camps and material stockyards are yet to be determined.

1.8 Sewage

A negligible sewage flow is anticipated for the duration of the construction period. Onsite treatment will be undertaken through the use of chemical toilets. The toilets will be serviced periodically by the supplier and effluent will be collected for disposal into the registered Waste Water Treatment Works.

1.9 Solid Waste Disposal

All solid waste will be collected at a central location at each construction site and will be stored temporarily until removal to a registered permitted landfill site.

1.10 Concrete Batching

Concrete batching will be required for the foundations of the distribution line towers. The following guidelines are contained in the Eskom specification For The Transmission Line Towers and Line Construction:

- a) The Contractor shall be responsible for negotiating the site of his batching plant (if required) and the conditions under it may be established, with the landowner. The Contractor shall be responsible for the proper management of the batching plant.
- b) Upon completion of works, the ground of the batching plant area shall be rehabilitated and the site cleaned and

left as it was found and to the satisfaction of the Supervisor and landowner.

c) The use of local water for concrete must first be negotiated with the landowner and the appropriate authorities. Such water is to be analysed and accepted by the Project Manager before use

1.11 Foundations

The excavations shall be kept covered or barricaded in a manner accepted by the Supervisor to prevent injury to people or livestock. Failure to maintain proper protection of excavations may result in the suspension of excavation work until proper protection has been restored.

1.12 Stringing

Once towers have been erected, cables will be strung between the towers.

1.13 Bird Flight Diverters

If required Bird flight deflectors will be fitted during the construction phase.

1.14 Electricity

Diesel generators will be utilised for the provision of electricity where electricity connection is not readily available.

1.15 Construction Process

Generally, the construction of the powerline is expected to consist of the following sequential phases:

- Step 1: Feasibility and identification of line alternatives.
- Step 2: Basic Assessment input and environmental permitting.
- Step 3: Negotiation of final route with affected landowners.
- Step 4: Survey of the proposed route.
- Step 5: Selection of structures suited to the terrain and ground conditions.
- Step 6: Final design of the distribution line and placement of towers.
- Step 7: Issuing of tenders and eventually appointment of contractors for the project.
- Step 8: Vegetation clearance and construction of access roads (if required).
- Step 9: Pegging of structures.
- Step 10: Construction of foundations.
- Step 11: Assembly and erection of structures.
- Step 12: Stringing of conductors.
- Step 13: Rehabilitation of disturbed areas and protection of erosion sensitive areas.
- Step 14: Testing and commissioning.
- Step 15: Operation and routine maintenance.

It is estimated that the construction period for this project will be 18-24 months.

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

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GN R 544 2010 (Listing Notice 1) 10 (i)	
<i>The construction of facilities or infrastructure for the transmission and distribution of electricity –</i> <i>(i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts;</i> •	<i>The proposed 132kV line will be approximately 9km metres in length and proposed Dominion Reefs substation will be about 6400m².</i>
GN R 544 2010 (Listing Notice 1) 11	
<i>The construction of:</i> <i>(xi) infrastructure or structures covering 50 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse.</i>	<i>The proposed deviation interact with watercourses</i>
GN R 544 Listing Notice 1) 23	
<i>The transformation of undeveloped, vacant to – residential, retail, commercial, recreational, industrial or institutional use, outside an urban area and where the total area to be transformed is bigger than 1 hectare but less than 20 hectares</i>	<i>The proposed substation is 80 x 80 m and Eskom may clear 1 hectare land for the purposes of substation construction</i>

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

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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.

Site alternatives

A: Substation:

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
	26° 55' 22.34" S	26° 24.34.90" E
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
	26° 55' 10.44" S	26° 24.25.02" E
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
	N/A	N/A

In the case of linear activities:

As has already been mentioned, two alternative sites have been considered during the Basic Assessment for the location of the substation. Both Alternative sites are located on Portion 50 of the Farm Rhenosterspruit 326 IP. Substation Alternative 1 is located in the south western corner of Farm Elandslaagte 330 IP, whereas Alternative 2 is located on the north western corner of the same farm. Both sites are bordered by a gravel road to the west. Please refer to **Figure 1** for project location and Site photographs contained in **Appendix A** for an overall view of the site.

B: Powerline:

Alternative:

Alternative S1 (preferred)

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

Latitude (S):

Longitude (E):

26°55'47.26" S	26°27'05.11" E
26°55'43.02" S	26°25'44.07" E
26°55'08.44" S	26°24'27.10" E

Alternative S2 (if any)

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

Alternative S3 (if any)

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

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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.

The proposed deviation will entail the construction of a 132kV distribution line and an approximately 9 km powerline. The distribution line will run from the proposed Hermes substation eastwards to Klerksdorp where it will terminate at the corner between the Farms of Elandslaagte 427 IP, Elandslaagte 330 IP and Wolverand 413 IP, North West Province.

a) Lay-out alternatives

*Examples of Schematic drawings of the powerline infrastructures and substation that may be used for the development have been included in **Appendix C**. NB: Please note that details regarding the number and the type of towers and other support infrastructures associated with the powerline will be confirmed during the detail design phase and following the approval of the proposed development. Currently it is proposed that a combination of Steel Mono Pole 132kv Compact Line Tower Series, Stayed angle structure 0 - 90 degree deviation (D-DT 7615), Intermediate single circuit structure 0 degree deviation (D DT 7611), Steel H Structures For 132kv Lines, Steel Terminal H-structure 120kN Capacity 8m Cross Arm (D-DT 7808) and self supporting lattice structures (D-DT 7705:- 248A and D-DT 7706:- 248B) will be used at the bends Refer to **Appendix C** for details.*

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 No-go option implies that the Project does not proceed, and will thus comprise of Eskom not going ahead with the construction of the 132kV powerline. Ideally this would be the preferred alternative as the status quo of the environment remains unchanged, due to the growing demand for energy in the area however this alternative is not feasible. Should Eskom rely on the existing network to supply future demand it is highly likely that present supply will be compromised due to the increased load on the network. High energy demand activities e.g. mining are prominent in the area. Currently a large amount of pressure is placed on the Hermes substation and it is unlikely that it has the capacity to meet future demands.

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):

A: Substation:

Alternative:

- Alternative A1¹ (preferred activity alternative)
- Alternative A2 (if any)
- Alternative A3 (if any)

Size of the activity:

±10000m ²
±9000m ²
N/A

or, for linear activities:

A: Powerline:

Alternative:

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

Length of the activity:

±9km
N/A
N/A

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

Alternative:

Powerline (preferred activity alternative)

Substation:

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

Size of the site/servitude:

31 m servitude (15.5 m from centre of powerline)
±10000m ²
±9000m ²

4. Site access

Does ready access to the site exist?

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

YES	NO
m	

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

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Describe the type of access road planned:

The proposed sites can be reached via the existing access roads. The site is situated south of the N12 between Klerksdorp and Wolmaranstad. An existing gravel road (D860) forms the western boundary of the proposed site and will provide access to the site.

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.

8. Site photographs

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

9. Facility illustration

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

10. Activity motivation

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

1. Is the activity permitted in terms of the property's existing land use rights?	YES	NO	Please explain
<p>Most of the proposed route and substation passes through privately owned farm areas. Once in place, the power line is unlikely to significantly disrupt farming activities. Eskom will acquire all servitudes, affected property owners will be permitted to use areas underneath the lines for farming. Other activities, besides the construction of buildings and tall structures and growing of tall trees, may also continue below the lines.</p>			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES		
<p>According to PSDF Eskom has a backlog of 6,145 households that do not have access to Free Basic Electricity as per the Municipality indigent data register. It is the objective of the City of Matlosana to Provide 98.87% of urban households with access to basic electricity.</p>			

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(b) Urban edge / Edge of Built environment for the area	YES		
The development is outside urban edge			
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	YES		Please explain
The City of Matlosana 2011/2012 IDP has identified the shortage of electricity supply to industrial urban residential and commercial areas of Klerksdorp and addressing electrification backlogs as some of the core challenges. According to the City of Matlosana IDP, the inadequate electricity bulk capacity and the impact on service delivery and development remains a challenge for the city. Most of the suburbs and inner city reticulation network still need to be strengthened. The upgrading of the City's electricity network has therefore become a strategic priority, especially the substations and transmission lines.			
(d) Approved Structure Plan of the Municipality	YES		Please explain
The proposed project entails electricity infrastructure, which is compatible with the City of Matlosana 2011/2015 IDP			
(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
There is no EMF that has been compiled for the area. The North West Biodiversity Conservation Assessment can be used to guide priority areas in terms of Conservation			
(f) Any other Plans (e.g. Guide Plan)	YES		Please explain
Beside the North West Biodiversity Conservation Assessment and the 2011/2012 IDP, no other plans are known to guide the development			
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		Please explain
The proposed development is in line with the National Development Plan and the City of Matlosana SDF's and IDP's, which related to the provision and upgrade of City infrastructure such as electricity supply			

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<p>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.)</p>	YES		Please explain
<p>The City of Matlosana 2011/2012 IDP has identified the shortage of electricity supply to industrial urban residential and commercial areas of Klerksdorp and addressing electrification backlogs as some of the core challenges. According to the City of Matlosana IDP, the inadequate electricity bulk capacity and the impact on service delivery and development remains a challenge for the city. Most of the suburbs and inner city reticulation network still need to be strengthened. The upgrading of the City's electricity network has therefore become a strategic priority, especially the substations and transmission lines.</p>			
<p>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.)</p>	YES		Please explain
<p>The proposed project is the construction of 132kV distribution line aimed at improving the quality of supply. It will not require any capacity for services such as water and sanitation from relevant Municipalities. It will however improve the quality of supply in the area</p>			
<p>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.)</p>	YES		Please explain
<p>The proposed project is the construction of 132kV distribution line aimed at improving the quality of supply. It will not require any capacity for services such as water and sanitation from relevant Municipalities. It will however improve the quality of supply in the area</p>			
<p>7. Is this project part of a national programme to address an issue of national concern or importance?</p>	YES		Please explain
<p>The upgrading of the electricity network and infrastructure especially the substations and transmission and distribution lines is a strategic priority towards addressing the shortage of electricity in South Africa.</p>			
<p>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.)</p>	YES	NO	Please explain
<p>Although the proposed development transverse privately owned agricultural lands, the location of the sites is strategic selected such that is within or next to the centre of the load demand</p>			

BASIC ASSESSMENT REPORT

9. Is the development the best practicable environmental option for this land/site?	YES	NO	Please explain
<p>Most of the proposed route and substation passes through privately owned farm areas. Once in place, the power line is unlikely to significantly disrupt farming activities. Eskom will acquire all servitudes, affected property owners will be permitted to use areas underneath the lines for farming. Other activities, besides the construction of buildings and tall structures and growing of tall trees, may also continue below the lines</p>			
10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES	NO	Please explain
<p>The objective of the proposed powerline and substation is to strengthen the Hermes network capacity as well as to improve the quality of supply in these areas.</p>			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	YES	NO	Please explain
<p>Sixty percent (60%) of the line will run parallel next to the existing Power-lines</p>			
12. Will any person's rights be negatively affected by the proposed activity/ies?	YES	NO	Please explain
<p>The proposed the proposed powerline and substation construction will not negatively affect any persons rights. The servitude rights for the line will be acquired by Eskom and financial compensation will be paid.</p>			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	YES	NO	Please explain
<p>The proposed development is a result of a deviation from the previously appealed powerline by the land owners. The deviation will transverse agricultural lands that are outside the urban edge</p>			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	YES	NO	Please explain
<p>Acceleration of identified in transmission infrastructure has been highlighted as of importance in unlocking the economic opportunities in the Northwest province. (SIP 4). Sip 10 has also identified the expansion of electricity transmission and distribution network as a way to address historical imbalances and providing access to electricity for and supporting economic development.</p>			
15. What will the benefits be to society in general and to the local communities?	Please explain		
<p>The provision of a reliable electricity network and provision of capacity for new users.</p>			
16. Any other need and desirability considerations related to the proposed activity?	Please explain		
<p>The proposed project will ensure that economic growth continues in the region as the region has several mining developments</p>			

BASIC ASSESSMENT REPORT

17. How does the project fit into the National Development Plan for 2030?	Please explain
CHAPTER 4 of the National Development Plan 2030 on Economic Infrastructure has outlined how the proportion of people with access to the electricity grid should rise to at least 90 percent by 2030, with non-grid options available for the rest. Action 2020 of The National Development Plan also considers the Ring-fencing the electricity distribution businesses of the 12 largest municipalities (which account for 80 percent of supply), resolve maintenance and refurbishment backlogs and develop a financing plan, alongside investment in human capital. The Hermes Deviation project serves to improve the quality of electricity supply for anticipated project in the City of Matlosana Municipality.	
18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.	
This report serves as a Basic Assessment report that will investigate all potential impacts (social, economic and environmental) that may result from the development including alternatives, assess and evaluate and further provide a mitigation plan for all identified potential impacts.	
19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.	
Specialist investigations (fauna, flora, fauna, visual, heritage, geotechnical) were appointed to investigate potential environment impacts. Identified environmental impacts were assessed and mitigation measures provided to control and manage these environmental impacts. Interested and Affected parties, land owners and relevant stakeholder were identified and involved throughout the Basic Assessment process and their comments addressed and recorded as part of this assessment.	

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, No. 107 of 1998 (NEMA), as amended & NEMA EIA Regulations, 2010: GN544, published in Government Gazette 33306 on 18 June 2010	A Basic Assessment Report (BAR) is required for this project.	Department of Environmental Affairs (DEA)	1998
National Environmental Management: Biodiversity Act, Act 10 of 2004	The North West Biodiversity Conservation Assessment can be used to guide priority areas in terms of Conservation of CBA's and ESA	Department of Environmental Affairs (DEA)	2004
National Water Act, No. 36 of 1998	The proposed distribution lines are within 500m of wetlands.	Department of Water Affairs (DWA)	1998
National Heritage Resources Act (Act No 25 of 1999)	Resources could be identified during construction phase	South African Heritage Resources	1999

BASIC ASSESSMENT REPORT

		Agency
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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
10m ³	

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

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

Small quantities of solid waste will be generated during the construction phase of the project. This waste will be disposed at a licensed waste facility by the contractor. Note soil excavated from trench and earth works during the grading of the substation will be used as backfill

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

Construction waste will be collected by waste trucks on a weekly basis and disposed off at the Klerksdorp registered landfill site.

Will the activity produce solid waste during its operational phase?

YES	NO
±25m ³	

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

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

Construction waste will be collected by waste trucks on a weekly basis and disposed off at a registered landfill site.

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

Klerksdorp Regional Waste Site

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

N/A

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

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?

YES	NO
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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?

	NO
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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?

	NO
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If YES, what estimated quantity will be produced per month?

	m ³
	NO

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

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.

Chemical toilets are going to be used and the sewage waste will be collected by the Contractor on weekly basis for disposal on a hazardous waste site

Will the activity produce effluent that will be treated and/or disposed of at another facility?

YES	
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If YES, provide the particulars of the facility:

Facility name:	Klerksdorp Regional Waste Disposal Facility		
Contact person:	Pieter Marais City of Matlosana Municipality		
Postal address:	Private Bag X5017		
Postal code:	2570		
Telephone:	018 - 406 8370	Cell:	
E-mail:		Fax:	

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

None, as effluent from chemical toilets on site will be disposed off at the Waste Water Treatment Works by an accredited Waste Contractor

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities?

	NO
YES	NO

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

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:

During the construction phase, dust and vehicular emissions will be released as a result of earthmoving machinery. However these emissions will have a short term impact on the immediate surrounding area and thus no authorisation will be required for such emissions. Appropriate dust suppression measures must be implemented (e.g. removal of vegetation in a phased manner and using recycled water for spraying dust to reduce the impacts).

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
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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
YES	NO

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

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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:

Noise will be generated by construction vehicles and construction activities. It will however be short term, localised and will last during the construction phase. The noise levels are anticipated to be less during the day lesser during night time as required for suburban districts with little road traffic in terms of SANS 10103 thus no authorisation will be required.

In order to minimise the impacts of noise during the construction phase, construction activities should be restricted to between 07H00 and 17H00 Monday to Friday. This is required in order to avoid noise and lighting disturbances outside of normal working hours. All construction equipment must be maintained and kept in good working order to minimise associated noise impacts. If required, adequate noise suppression measures (i.e. screens, etc) must be erected around the point source of construction and/or operational noise pollution to reduce noise to an acceptable level.

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
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If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?

litres	
YES	NO

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

The applicant will apply for a Water use Licence from the Department of Water Affairs in areas where water resources are impacted (streams and wetland crossing) before commencement of construction in the affected areas

14. Energy efficiency

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

- Electricity - Apart from the use of energy efficient lighting at the substation, no other measures are considered
 -Fuel and Oil - Delivery Vehicles and other construction equipment will use petrol, diesel and oil. Use and number of such vehicles and machinery will be restricted to that which is absolutely necessary for the construction activities and deliveries.

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

Energy efficient lighting will be used where practical

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. 1 (e.g. A):

A – Powerline Deviation

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

See **Appendices D1** (Geotechnical report), **D2** (Flora and Fauna Assessment), **D3** (Heritage report), **D4** (Wetland Assessment), **D5** (Agricultural Potential), and **D6** (Visual Assessment) for the specialist studies that were conducted.

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	Northwest
District Municipality	Dr Kenneth Kaunda District Municipality
Local Municipality	City of Matlosana
Ward Number(s)	Ward No 4
Farm name and number	Elandslaagte 427 IP, Elandslaagte 330 IP and Wolverand 413 IP; Portion 50 of the Farm Rhenosterspruit 326 IP
Portion number	Elandslaagte 427 IP, Elandslaagte 330 IP and Wolverand 413 IP; Portion 50 of the Farm Rhenosterspruit 326 IP
SG Code	T0IP00000000033000000;T0IP00000000032600000; T0IP00000000032600028

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.

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

Agricultural land. The proposed development crosses land type Bc20, where shallow soils and rock dominate with low agricultural potential.

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
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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
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The terrain along virtually the whole route is almost flat, with slopes of less than 2%, and crosses the Rhenospruit where the altitude is around 1 420 m above sea level.

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
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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
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2. Location in landscape

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

2.1 Ridgeline <input type="checkbox"/>	2.4 Closed valley <input type="checkbox"/>	2.7 Undulating plain / low hills <input type="checkbox"/>
2.2 Plateau <input type="checkbox"/>	2.5 Open valley <input type="checkbox"/>	2.8 Dune <input type="checkbox"/>
2.3 Side slope of hill/mountain <input type="checkbox"/>	2.6 Plain <input type="checkbox"/>	2.9 Seafront <input type="checkbox"/>

3. Groundwater, soil and geological stability of the site

Further details on the Geotechnical stability of the site are included in **Geotechnical report** attached as **Appendix D1**.

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

	Proposed alignment:	Alternative 1 (if any):	Alternative 2 (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

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Seasonally wet soils (often close to water bodies)	YES	NO	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil		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		YES	NO	YES	NO
Any other unstable soil or geological feature		NO	YES	NO	YES	NO
An area sensitive to erosion	YES	NO	YES	NO	YES	NO

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

4. Ground cover

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.

See also *Ecological report attached as Appendix D2.*

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

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6. Land use character of surrounding area

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

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

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

The site is situated south of the N12 between Klerksdorp and Wolmaranstad. An existing gravel road (D860) forms the western boundary of the proposed site and will provide access to the site. These roads will not be directly impacted by the proposed project

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:

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:

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.

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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	

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

*A Heritage Impact Assessment (HIA) was undertaken for this proposed development, see **Appendix D3**. The conclusion of the HIA was that there are no sites, features or objects of cultural heritage significance that would prevent the development from continuing in the proposed corridor*

Will any building or structure older than 60 years be affected in any way?
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

YES	NO
YES	NO

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

8. Socio-economic character

a) Local Municipality

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

Level of unemployment:

According to the IDP and Census 2011 Municipal Fact Sheet, published by Statistics South Africa, the City of Matlosana has a population of about 398 676 of which 85 168 are unemployed. Poverty Rate is at 56.6% whereas unemployment Rate is at 42%.

Economic profile of local municipality:

As is the case with the regional economy, mining dominates the current local economic scene. Various mines still operate in the area. The Vaal Reefs mine owned and controlled by Anglo Gold Ashanti is in close proximity to the Hermes Substation.

The mining sector is followed by the construction, trade, financial and manufacturing sectors, general services and farming. A large section of the manufacturing sector is dependent on mining and had therefore failed to grow and diversify. This district is thus to a large extent still dependant on the primary sector, characterised by low-skilled, resource intensive production³. From 1996 until 2001 the City of Matlosana Local Municipality had a negative growth rate of 3,65%, although the area became more diversified by almost 10% since 1996. Estimates are that the economy achieved a positive growth rate in 2005, the first such achievement since 1996.

Formal trading activities are limited to the relatively small urban centres, and most activities serve

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only the local residents and business community. This clearly indicates that the economy is vulnerable to adverse economic influences such as the decline of a particular sector.

Level of education:

With regard to Education, the City of Matlosana in the population group (aged 20 +), 7.90 have received no formal Schooling, whereas 9.00 have received Higher Education with 28.20 % having Matric level

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R		
What is the expected yearly income that will be generated by or as a result of the activity?	R		
Will the activity contribute to service infrastructure?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">YES</td> <td style="width: 50%; text-align: center;">NO</td> </tr> </table>	YES	NO
YES	NO		
Is the activity a public amenity?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">YES</td> <td style="width: 50%; text-align: center;">NO</td> </tr> </table>	YES	NO
YES	NO		
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	Unknown		
What is the expected value of the employment opportunities during the development and construction phase?	R		
What percentage of this will accrue to previously disadvantaged individuals?	%		
How many permanent new employment opportunities will be created during the operational phase of the activity?			
What is the expected current value of the employment opportunities during the first 10 years?	R		
What percentage of this will accrue to previously disadvantaged individuals?	%		

9. Biodiversity

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

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

Systematic Biodiversity Planning Category				If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	

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The proposed powerline alignment does not traverse any statutory conservation area. The powerline transect some natural areas that consist of Thicket and bushland; and Natural grassland (unimproved grassland). Transformed areas within the powerline include some commercial dryland.

Mitigation measures to protect the neighbouring sensitive sites are provided in the Flora and Fauna assessment (**Appendix D2**) undertaken during the Basic Assessment.

b) Indicate and describe the habitat condition on site

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	23.78%	Nearly 24 % of the study site is covered in natural habitat types as opposed to transformed areas
Near Natural (includes areas with low to moderate level of alien invasive plants)	46.09%	Very low Areas composed of alien and invader are low.
Degraded (includes areas heavily invaded by alien plants)	15%	There is Natural grasslands subjected to persistent grazing. Often dominated by species-poor compositions forming dense "plagioclimax" seres (e.g. <i>Hyparrhenia hirta</i> , <i>Eragrostis lehmanniana</i> and <i>Sporobolus fimbriatus</i>).
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	30.13%	Areas composed of alien and invader taxa. Low risk areas – not important.

The habitat condition of the study area was summarised as follows by the Ecological specialists:

Land Cover Class	Surface area (ha)	Percentage total area of study site (%)
Natural grassland	271.94	23.78%
Thicket & bushland	526.96	46.09%
Cultivated land	344.46	30.13%
Natural	798.90	69.87%
Transformed	344.46	30.13%
Total	1143.36	100.00%

Table taken from **Pachnoda Consulting**: April 2013

It is apparent from the above table that the proposed study site is dominated by natural vegetation consisting of thicket and bush land followed by grassland. It clearly shows that nearly 70 % of the study site is covered in natural habitat types as opposed to transformed areas.

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c) Complete the table to indicate:

- (i) the type of vegetation, including its ecosystem status, present on the site; and
- (ii) whether an aquatic ecosystem is present on site.

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

*The proposed powerline alignment are located in a site where there are no conspicuous threat to any threatened species or any other species of particular conservation concern. Please also refer to **Section 5** for details regarding the wetland conditions.*

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)

The study site is generally located on the Grassland Biome and more specifically on the Dry Highveld Grassland Bioregion as defined by Mucina & Rutherford (2006). The study site comprehends two ecological types, namely Klerksdorp Thornveld and Vaal-Vet Sandy Grassland. The proposed distribution line is located within the Vaal River Catchment. The important drainage line to be crossed by the proposed alignment is a seasonal tributary of the Rhenosterspruit. However, the alignment is located within 300 m from two seasonal depressions/pans. When inundated these features could provide foraging and ephemeral breeding habitat for power line sensitive bird species.

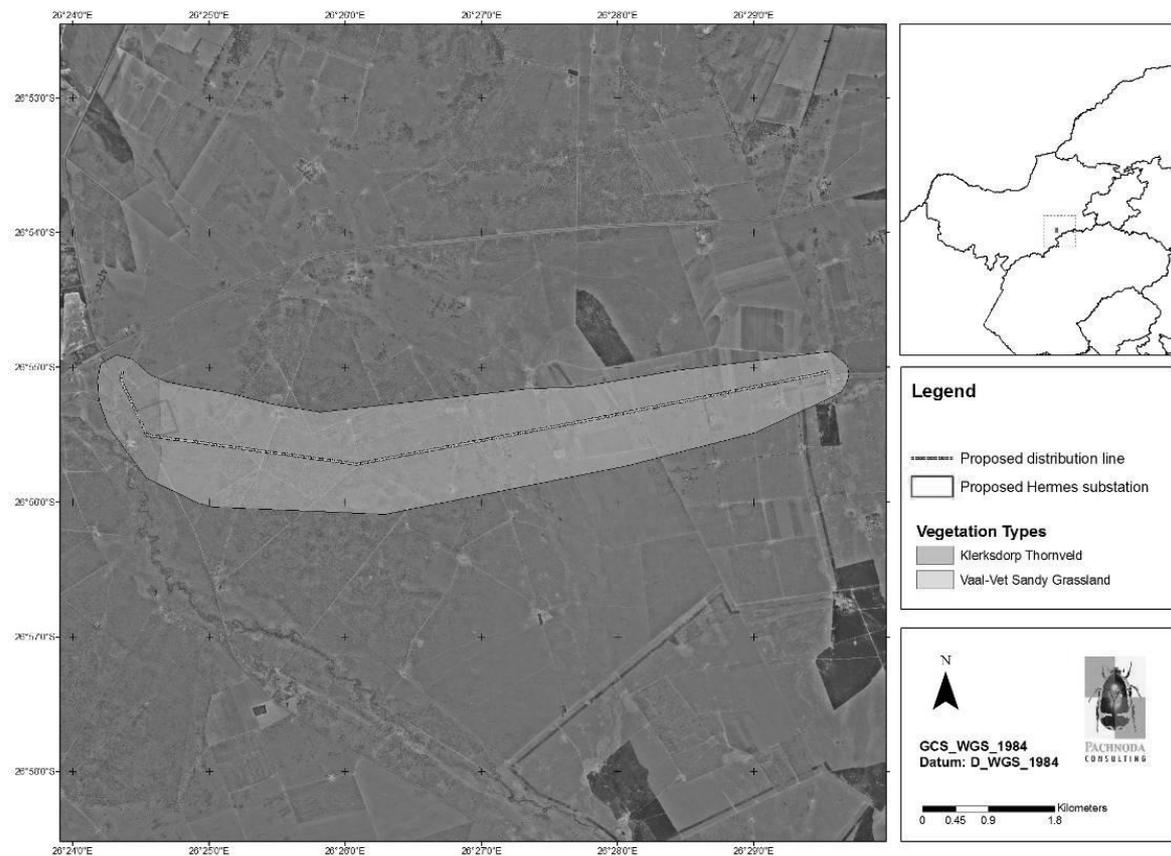


Figure 2. A map illustrating the regional vegetation types traversed by the proposed power line and substation

A sensitivity map (Please refer to **Appendix A**) was compiled by the Ecological specialists (Mr Lukas Niemand), illustrating areas containing sensitive elements. According to this map, areas with high sensitivities are located on the north-western and central parts of the study site. These are concentrated on floristically rich primary savannoid grasslands and along extensive moist grassland bordering a tributary of the Rhenosterspruit river.

An Ecological investigation of the final sensitivity ratings further reveals that approximately 21 % of the proposed alignment corresponds to sensitive habitat types. However, part of the proposed alignment spans two areas (e.g. boreholes) that are frequently inundated with surface water. These areas could be important foraging habitat for bird and mammal species, which necessitates the re-alignment of the proposed power line servitude to an area south of these inundated areas.

BASIC ASSESSMENT REPORT

Section B Copy No. (e.g. A):

B – Substation Alternative 1

4. Paragraphs 1 - 6 below must be completed for each alternative.

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

YES

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

See **Appendices D1** (Geotechnical report), **D2** (Flora and Fauna Assessment), **D3** (Heritage report), **D4** (Wetland Assessment), **D5** (Agricultural Potential), and **D6** (Visual Assessment) for the specialist studies that were conducted

Property description/physical address:

Province	Northwest
District Municipality	Dr Kenneth Kaunda District Municipality
Local Municipality	City of Matlosana
Ward Number(s)	Ward 4
Farm name and number	Farm Rhenosterspruit 326 IP
Portion number	Portion 50
SG Code	T0IP00000000032600050

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:

Agricultural. According to the Agricultural potential report, the site is not likely to be deep, and will therefore be of limited potential for arable agriculture. Please also refer Agricultural potential report attached as **Appendix D5**.

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

BASIC ASSESSMENT REPORT

10. 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
------	-------------	-------------	-------------	--------------	-------------	------------------

The site consists of very gently undulating topography, sloping to the south with a slope angle of less than 2%

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
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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
------	-------------	-------------	-------------	--------------	-------------	------------------

11. Location in landscape

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

2.1 Ridgeline	<input type="checkbox"/>	2.4 Closed valley	<input type="checkbox"/>	2.7 Undulating plain / low hills	<input type="checkbox"/>
2.2 Plateau	<input type="checkbox"/>	2.5 Open valley	<input type="checkbox"/>	2.8 Dune	<input type="checkbox"/>
2.3 Side slope of hill/mountain	<input type="checkbox"/>	2.6 Plain	<input type="checkbox"/>	2.9 Seafront	<input type="checkbox"/>

12. Groundwater, soil and geological stability of the site

*Further details on the Geotechnical stability of the site are included in **Geotechnical report** attached as **Appendix D1**.*

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

	Substation		Alternative 1		Alternative 2	
	Alternative 1:		(if any):		(if any):	
Shallow water table (less than 1.5m deep)	YES	NO		NO	YES	NO
Dolomite, sinkhole or doline areas		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		NO	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)		NO	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES		YES	NO	YES	NO
Any other unstable soil or geological feature		NO	YES	NO	YES	NO
An area sensitive to erosion		NO	YES	NO	YES	NO

BASIC ASSESSMENT REPORT

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.

13. Ground cover

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

See also *Ecological Assessment report attached as Appendix D2.*

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.

14. Surface water

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

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

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

The proposed substation line is located within the Vaal River Catchment. The important drainage line in the vicinity of Alternative 1 is a seasonal tributary of the Rhenosterspruit. However, the alignment is located within 300 m from two seasonal depressions/pans. No wetlands were identified to be overlapping with the site. Please also refer to the attached Wetland Assessment report (**Appendix D4**) for further details.

BASIC ASSESSMENT REPORT

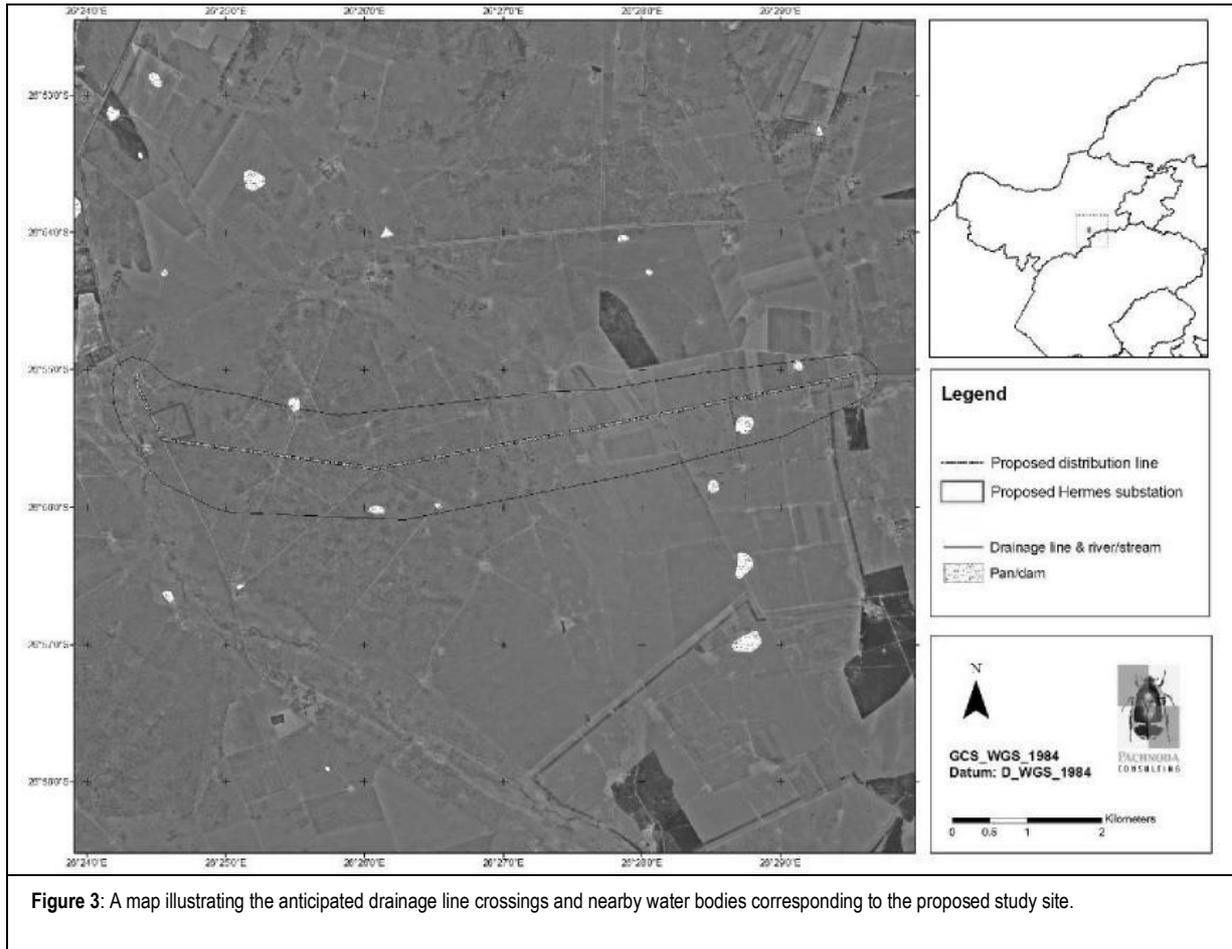


Figure 3: A map illustrating the anticipated drainage line crossings and nearby water bodies corresponding to the proposed study site.

15. 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)

BASIC ASSESSMENT REPORT

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

The site is situated south of the N12 between Klerksdorp and Wolmaranstad. An existing gravel road (D860) forms the western boundary of the proposed site and will provide access to the site. These roads will not be directly impacted by the proposed project

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:

N/A

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

N/A

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

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

16. 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	

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

*A Heritage Impact Assessment (HIA) was undertaken for this proposed development, see **Appendix D3**. The conclusion of the BA was that there are no sites, features or objects of cultural heritage significance that would prevent the development from continuing in the proposed corridor*

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
-----	----

BASIC ASSESSMENT REPORT

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

17. Socio-economic character

a) Local Municipality

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

Level of unemployment:

According to the IDP and Census 2011 Municipal Fact Sheet, published by Statistics South Africa, the City of Matlosana has a population of about 398 676 of which 85 168 are unemployed. Poverty Rate is at 56.6% whereas unemployment Rate is at 42%.

Economic profile of local municipality:

As is the case with the regional economy, mining dominates the current local economic scene. Various mines still operate in the area. The Vaal Reefs mine owned and controlled by Anglo Gold Ashanti is in close proximity to the Hermes Substation.

The mining sector is followed by the construction, trade, financial and manufacturing sectors, general services and farming. A large section of the manufacturing sector is dependent on mining and had therefore failed to grow and diversify. This district is thus to a large extent still dependant on the primary sector, characterised by low-skilled, resource intensive production³. From 1996 until 2001 the City of Matlosana Local Municipality had a negative growth rate of 3,65%, although the area became more diversified by almost 10% since 1996. Estimates are that the economy achieved a positive growth rate in 2005, the first such achievement since 1996.

Formal trading activities are limited to the relatively small urban centres, and most activities serve only the local residents and business community. This clearly indicates that the economy is vulnerable to adverse economic influences such as the decline of a particular sector.

Level of education:

With regard to Education, the City of Matlosana in the population group (aged 20 +), 7.90 have received no formal Schooling, whereas 9.00 have received Higher Education with 28.20 % having Matric level

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?

What is the expected yearly income that will be generated by or as a result of the activity?

Will the activity contribute to service infrastructure?

Is the activity a public amenity?

How many new employment opportunities will be created in the development and construction phase of the activity/ies?

R	
R	
YES	NO
YES	NO
Unknown	

BASIC ASSESSMENT REPORT

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

18. Biodiversity

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

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

Systematic Biodiversity Planning Category				If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	It was a recommendation of the Ecological specialist that an alternative site be considered for the location of the substation as the proposed substation coincides with an area of very high sensitivity. A site located to the north of the proposed substation site was therefore considered as an Alternative site. Details on the characteristics of the alternative site are detailed in the sections that follow overleaf.

*Alternative 1 (substation site) is located next to an area of high ecological sensitivity. The proposed substation coincides with an area of very high sensitivity. The proposed substation is located on grassland of primary condition with a high graminoid and forb richness. This area is typical of good conditioned Vaal-Vet Sandy Grassland and should preferably be conserved. Apart from a high floristic richness, the spatial heterogeneity as attributed by the presence of surface rock provide habitat for protected scorpion species (e.g. *Opisthophthalmus pugnax*). Please refer to the Ecological report for further details. Mitigation measures to protect the neighbouring sensitive sites are provided in the Ecological assessment (**Appendix D2**) undertaken during the Basic Assessment*

BASIC ASSESSMENT REPORT

b) Indicate and describe the habitat condition on site

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	69.87%	Nearly 70 % of the study site is covered in natural habitat types as opposed to transformed areas
Near Natural (includes areas with low to moderate level of alien invasive plants)	30.19%	Areas composed of alien and invader taxa are very low.

The habitat condition of the study area was summarised as follows by the Ecological specialist:

Land Cover Class	Surface area (ha)	Percentage total area of study site (%)
Natural grassland	271.94	23.78%
Thicket & bushland	526.96	46.09%
Cultivated land	344.46	30.13%
Natural	798.90	69.87%
Transformed	344.46	30.13%
Total	1143.36	100.00%

It is apparent from the above table that the proposed study site is dominated by natural vegetation consisting of thicket and bushland followed by grassland. It clearly shows that nearly 70 % of the study site is covered in natural habitat types as opposed to transformed areas.

c) Complete the table to indicate:

- (i) the type of vegetation, including its ecosystem status, present on the site; and
- (ii) whether an aquatic ecosystem is present on site.

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

There are no wetlands with the site boundaries of Substation Alternative 1, the sensitive nature in terms of the species compositions on site warrants the site unsuitable.

- 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)

BASIC ASSESSMENT REPORT

The study site is generally located on the Grassland Biome and more specifically on the Dry Highveld Grassland Bioregion as defined by Mucina & Rutherford (2006). The study site comprehends two ecological types, namely Klerksdorp Thornveld and Vaal-Vet Sandy Grassland.

According to the Ecological report, Alternative 1 (the proposed substation) coincides with an area of very high sensitivity. Alternative 2 is located on grassland of primary condition with a high graminoid and forb richness. This area is typical of good conditioned Vaal-Vet Sandy Grassland and should preferably be conserved. Apart from a high floristic richness, the spatial heterogeneity as attributed by the presence of surface rock provide habitat for protected scorpion species (e.g. *Opisththalmus pugnax*).

The study site provides suitable habitat for a diversity of conservation-dependant fauna which is attributed to the primary grassland units (Alternative 2 substation area), drainage lines and rocky surface seams. In addition, the western section of the study site corresponds to rocky soils that provide habitat for stenotopic invertebrate species (*Opisththalmus pugnax*) that are ominously absent from the remaining part of the study site.

It was a recommendation of the Ecological specialist that an alternative site be considered for the location of the substation, please refer to Figure . A site located to the north of the substation was considered as an Alternative site. Details on the characteristics of the alternative site are detailed in the sections that follow overleaf.

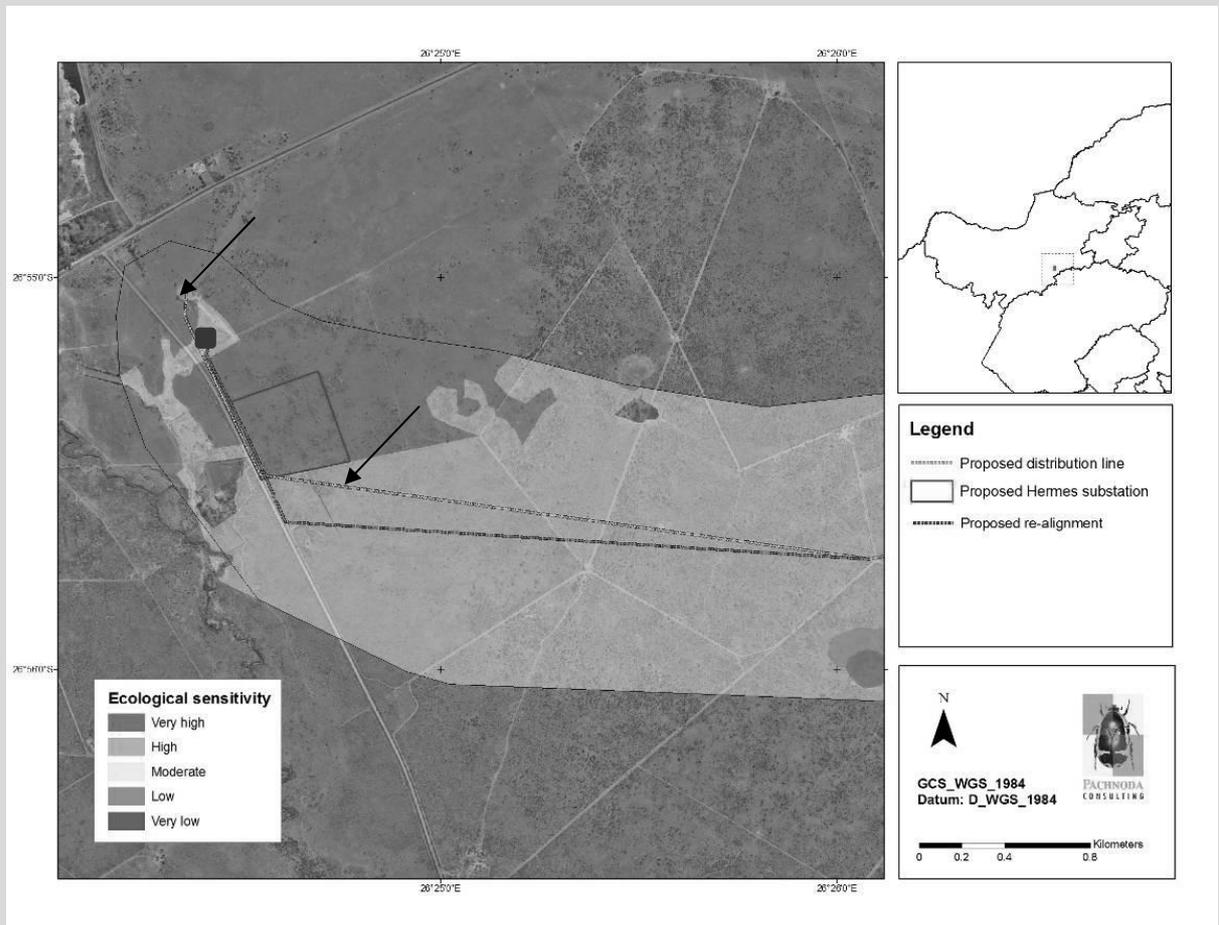


Figure 4: Sensitivity map showing the location of Substation Alternative (red square) on a moderate sensitive site. Arrows illustrate the proposed re-alignment of the power line servitude to avoid frequently inundated areas.

BASIC ASSESSMENT REPORT

Section B Copy No 3. (e.g. A):

C – Substation Alternative 2

6. Paragraphs 1 - 6 below must be completed for each alternative.

7. 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.

See **Appendices D1** (Geotechnical report), **D2** (Ecological Assessment), **D3** (Heritage report), **D4** (Wetland Assessment), **D5** (Agricultural Potential), and **D6** (Visual Assessment), **D7** (Ecological opinion) for the specialist studies that were conducted

Property description/physical address:

Province	Northwest
District Municipality	Dr Kenneth Kaunda District Municipality
Local Municipality	City of Matlosana
Ward Number(s)	Ward No 04
Farm name and number	Portion 50 of the Farm Rhenosterspruit 326 IP
Portion number	Farm Rhenosterspruit 326 IP
SG Code	Portion 50

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:

Agricultural. According to the Agricultural potential report, the site is not likely to be deep, and will therefore be of limited potential for arable 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**

BASIC ASSESSMENT REPORT

19. 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
------	-------------	-------------	-------------	--------------	-------------	------------------

The site consists of very gently undulating topography, sloping to the south with a slope angle of less than 2%

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
------	-------------	-------------	-------------	--------------	-------------	------------------

20. Location in landscape

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

2.1 Ridgeline	<input type="checkbox"/>	2.4 Closed valley	<input type="checkbox"/>	2.7 Undulating plain / low hills	<input type="checkbox"/>
2.2 Plateau	<input type="checkbox"/>	2.5 Open valley	<input type="checkbox"/>	2.8 Dune	<input type="checkbox"/>
2.3 Side slope of hill/mountain	<input type="checkbox"/>	2.6 Plain	<input type="checkbox"/>	2.9 Seafront	<input type="checkbox"/>

21. Groundwater, soil and geological stability of the site

*Further details on the Geotechnical stability of the site are included in **Geotechnical report** attached as **Appendix D1**.*

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

	Proposed alignment:		Alternative 1 (if any):		Alternative 2 (if any):	
	YES	NO	YES	NO	YES	NO
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

BASIC ASSESSMENT REPORT

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.

22. Ground cover

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

See also Ecological Assessment report (**Appendix D2**) and Ecological opinion attached as **Appendix D7**. Please note that an Ecological opinion was undertaken following the recommendation by an Ecological specialists that an alternative site be considered for the location of the substation as Alternative 1 was ecologically sensitive. The sensitive map (**Appendix A**) compiled by the Ecological specialists was reviewed to identified site of low ecological value in the vicinity.

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.

23. 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

According to the Ecological opinion, A drainage line with possible small pockets of wetlands or traces of wetland conditions is present approximately 200-250 m north of the proposed area allocated for the Alternative 2. Water seemingly drain from the N12 in a south-westerly direction to what could be described as depressional wetland – likely a pan. However, the edge of the pan seems to leak water towards the site, likely via a dirt road or because of animal trampling.

BASIC ASSESSMENT REPORT

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

This alternative is not located in a disturbed area. However a perennial Renosterspruit is approximately 560m south west of the site and some NFEPA wetlands are situated more than 500m north and east of the proposed site. The site contains no wetlands.

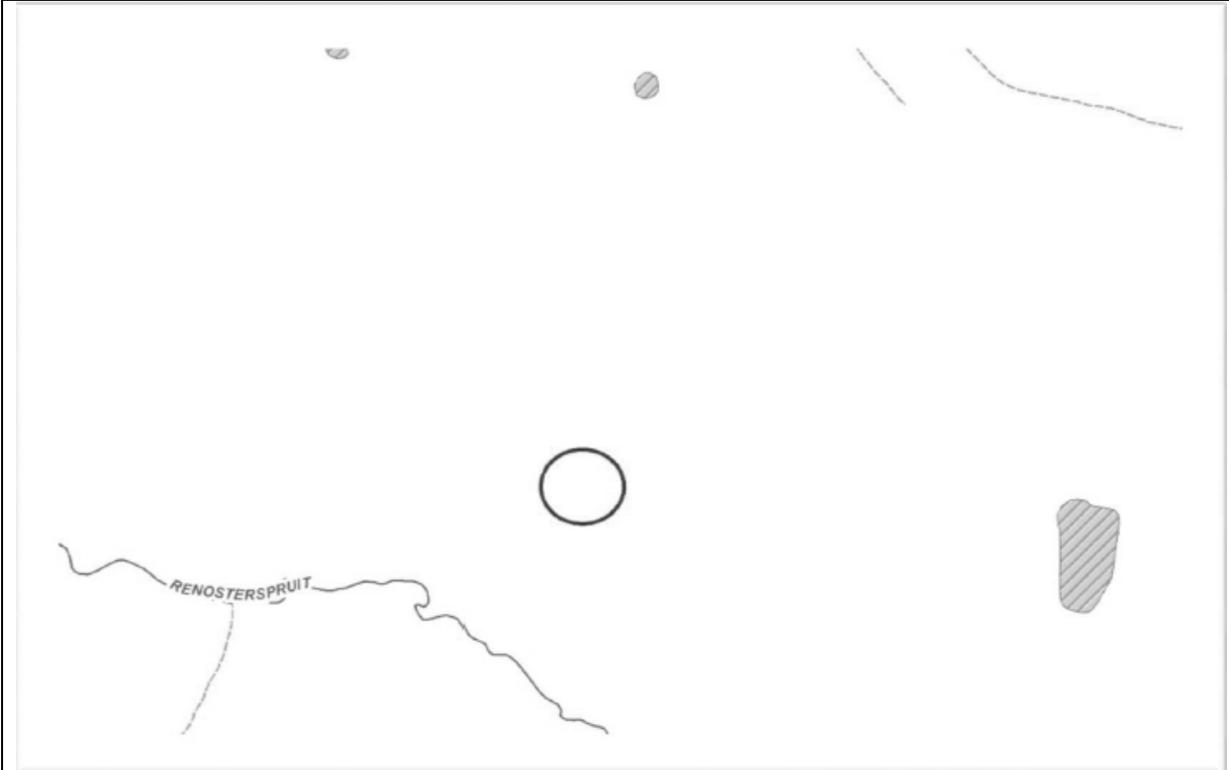


Figure 4: A map illustrating the hydrological features around the site.

24. 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 – Cattle farming and grazing land
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	Harbour	Graveyard

BASIC ASSESSMENT REPORT

base/station/compound		
Spoil heap or slimes dam ^A	Sport facilities	Archaeological site
Quarry, sand or borrow pit	Golf course	Other land uses (describe)

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

The site is situated south of the N12 between Klerksdorp and Wolmaranstad. An existing gravel road (D860) forms the western boundary of the proposed site and will provide access to the site. These roads will not be directly impacted by the proposed project

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:

N/A

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

N/A

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

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

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

25. 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	

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

*A Heritage Impact Assessment (HIA) was undertaken for this proposed development, see **Appendix D3**. The conclusion of the HIA was that there are no sites, features or objects of cultural heritage significance that would prevent the development from continuing in the proposed corridor*

BASIC ASSESSMENT REPORT

Will any building or structure older than 60 years be affected in any way?

YES	NO
YES	NO

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

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

26. Socio-economic character

a) Local Municipality

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

Level of unemployment:

According to the IDP and Census 2011 Municipal Fact Sheet, published by Statistics South Africa, the City of Matlosana has a population of about 398 676 of which 85 168 are unemployed. Poverty Rate is at 56.6% whereas unemployment Rate is at 42%.

Economic profile of local municipality:

As is the case with the regional economy, mining dominates the current local economic scene. Various mines still operate in the area. The Vaal Reefs mine owned and controlled by Anglo Gold Ashanti is in close proximity to the Hermes Substation.

The mining sector is followed by the construction, trade, financial and manufacturing sectors, general services and farming. A large section of the manufacturing sector is dependent on mining and had therefore failed to grow and diversify. This district is thus to a large extent still dependant on the primary sector, characterised by low-skilled, resource intensive production³. From 1996 until 2001 the City of Matlosana Local Municipality had a negative growth rate of 3,65%, although the area became more diversified by almost 10% since 1996. Estimates are that the economy achieved a positive growth rate in 2005, the first such achievement since 1996.

Formal trading activities are limited to the relatively small urban centres, and most activities serve only the local residents and business community. This clearly indicates that the economy is vulnerable to adverse economic influences such as the decline of a particular sector.

Level of education:

With regard to Education, the City of Matlosana in the population group (aged 20 +), 7.90 have received no formal Schooling, whereas 9.00 have received Higher Education with 28.20 % having Matric level

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?

R

What is the expected yearly income that will be generated by or as a result of the activity?

R

Will the activity contribute to service infrastructure?

YES	NO
-----	----

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	YES	NO
Is the activity a public amenity?		
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	Unknown	
What is the expected value of the employment opportunities during the development and construction phase?	R	
What percentage of this will accrue to previously disadvantaged individuals?	%	
How many permanent new employment opportunities will be created during the operational phase of the activity?		
What is the expected current value of the employment opportunities during the first 10 years?	R	
What percentage of this will accrue to previously disadvantaged individuals?	%	

27. Biodiversity

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

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

Systematic Biodiversity Planning Category				If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	Although Alternative 1 is located in the CBA area, it must however be noted that the site was found to be used for grazing and the site was trampled with numerous paths traversing the site. The area comprised a high frequency of the tree <i>Acacia karoo</i> and invasives such as <i>Opuntia species</i> (Prickly Pear).

According to the Ecological opinion (**Appendix D7**), Alternative 1 of the substation site is situated completely in a terrestrial CBA2 which indicates areas where near-natural landscapes are considered important in terms of reaching conservation targets within the district. According to this report, any further transformation of these areas should be avoided and development impacts limited to existing transformed or heavily degraded areas. It must be noted however that a disturbed site of about 90x100 m is available for to accommodate the substation (See photos overleaf).

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View of the central southern part of the of Alternative 1, dominated by Acacia Karoo and Prickly pear



Arrow show a drainage line located about 250 m to the north of the site

Mitigation measures to protect the neighbouring sensitive sites are provided in the Ecological assessment (**Appendix D2**) and the Ecological opinion (**Appendix D7**) undertaken during the Basic Assessment.

b) Indicate and describe the habitat condition on site

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	69.87%	Nearly 70 % of the study site (surrounding environment to the south) is covered in natural habitat types as opposed to transformed areas
Degraded (includes areas heavily invaded by alien plants)	30.13%	There is Natural grassland subjected to persistent grazing. Often dominated by species-poor compositions forming dense "plagioclimax" seres (e.g. Hyparrhenia hirta, Eragrostis lehmanniana and Sporobolus fimbriatus).

The habitat condition of the study area was summarised as follows by the Ecological specialists:

Land Cover Class	Surface area (ha)	Percentage total area of study site (%)
Natural grassland	271.94	23.78%
Thicket & bushland	526.96	46.09%
Cultivated land	344.46	30.13%
Natural	798.90	69.87%
Transformed	344.46	30.13%
Total	1143.36	100.00%

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It is apparent from the above table and the Ecological opinion report that the area is transformed and there are no protected tree species (as per the National Forests Act No. 84 of 1998, Section 51(1)) on Alternative 2. The study further confirmed that it is unlikely that there are any threatened animal species or any other animal species of particular conservation concern at the site.

c) Complete the table to indicate:

- (i) the type of vegetation, including its ecosystem status, present on the site; and
- (ii) whether an aquatic ecosystem is present on site.

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

The proposed substation Alternative 1 for the proposed substation are located in a site where there are no conspicuous threat to any threatened species or any other species of particular conservation concern. The area is regarded suitable for the location of the substation with the application of mitigation measures to protect the nearby natural vegetation.

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)

The study site is generally located on the Grassland Biome and more specifically on the Dry Highveld Grassland Bioregion as defined by Mucina & Rutherford (2006). The study site comprehends two ecological types, namely Klerksdorp Thornveld and Vaal-Vet Sandy Grassland.

Based on the Ecological opinion that was undertaken, Alternative 2 (proposed substation) is located in the CBA area. It must however be noted that the site was found to be used for grazing and the site was trampled with numerous paths traversing the site. The area comprised a high frequency of the tree *Acacia karoo* and invasives such as *Opuntia species* (Prickly Pear). Many tracks are also present at the site and in the larger study area and a site of about 9000m² is available to accommodate the substation and at a less sensitive area. No tree species of the North West Province which are listed as protected tree species under the National Forests Act No. 84 of 1998, Section 51(1) are conspicuous at the site and footprint allocated for possible development. It is for these reasons that the site was considered suitable for the location of substation with the application of effective mitigation measures.

SECTION C: PUBLIC PARTICIPATION

1. Advertisement and notice

Publication name	Klerksdorp record	
Date published	15 February 2013	
Site notice position	Latitude	Longitude
Date placed	14 February 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.

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

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
Mr Abbey Tlaetsi	Northwest Department of Agriculture, Conservation and Rural Development (NWDACERD)	Tel: 018 299 6696
Ms NP Khenza/Ms Zami Mabaso	City of Matlosana Local Municipality	Tel : 018 473 8038 Email: envhealth@kaundadistrict.gov.za zami@kaundadistrict.gov.za

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.

3. Issues raised by interested and affected parties

Summary of main issues raised by I&APs	Summary of response from EAP

No issues have been raised by the Interested and Affected Parties consulted during the Notification period, it is hoped that comments will be submitted during the review of this draft BAR

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:

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address
(NWDACERD)	Mr Abbey Tlaetsi	018 389 5666	018 294 6008	hoddedect@nwpg.gov.za ssekoto@nwpg.gov.za	Private Bag X15, Mmabatho
City of Matlosana Local Municipality	Ms NP Khenza Ms Zami Mabaso	018 473 8038	018 473 2523	envhealth@kaundadistrict.gov.za zami@kaundadistrict.gov.za	Private Bag X5017, Klerksdorp

Include proof that the Authorities and Organs of State received written notification of the 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.

- Impact Assessment and Rating Methodology
(The impact assessment methodology is attached as **Appendix F.**) The significance of impacts will be rated from Low, Medium to High where:
 - **Low:** Little influence on the receiving environment
 - **Medium:** Will have an influence on the receiving environment unless mitigated
 - **High:** Will have an influence on the receiving environment regardless of mitigation

Impact Assessment Tables for the project are attached as Appendix F.

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Direct impacts: (Construction phase)

Various specialist assessment (**Appendix D**) has been undertaken to identify potential stability issues that may emanate from this development. The impacts are assessed and presented as follows:

Proposed Powerline Alignment (Hermes Deviation) - Please also refer to the draft EMPr, Specialist assessment and Eskom's minimum standards for vegetation management and erosion control reports for details on other applicable mitigation measures				
Potential impacts:	Description	Significance rating of impacts: (without mitigation)	Proposed mitigation: Construction and operation phase	Significance rating of impacts after mitigation:
1.Impacts on vegetation	This route is proposed to transverse mainly the Klerksdorp Thornveld and Vaal-Vet Sandy Grassland.	Medium	<ol style="list-style-type: none"> 1. The "walk-through" of the alignment should preferably coincide with the calendar month of January when the majority of the Red/Orange listed plant species likely to occur is flowering. 2. All Red/Orange tree species that will be impacted by the construction activity must be identified and marked prior to the construction phase 3. Contractor with the assistance of the environmental officer must identify and label trees that must not be removed during the construction of the access roads 4. Clearing of vegetation should be minimal where the power line traverses through savannoid grasslands 5. Rehabilitation / restoration of indigenous vegetative cover during and after construction; 6. Management of point discharges during construction activities to avoid unnecessary soil erosion; 7. Implement alien plant control activities; 8. Implementation of best management 	Low

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			<p>practices regarding stormwater and earthworks;</p> <ol style="list-style-type: none"> 9. Provision of adequate sanitation facilities located outside of the wetland/riparian area or its associated buffer zone during construction activities; 10. Implementation of appropriate stormwater management around the excavation to prevent the ingress of run-off into the excavation; and particularly; and 11. Prevention of erosion, and where necessary rehabilitation of eroded areas. 	
<p>2.Impacts on wetlands and other water bodies</p>	<p>The Proposed Route intersects one wetland and riparian areas. Construction of towers on the wetland could potentially affect the wetland soil and vegetation through the compaction of the wetland soils, the trampling, smothering of wetland vegetation and the resultant exposure of wetland soils which would result in desiccation and erosion.</p>	<p>High</p>	<ol style="list-style-type: none"> 1. The applicable Water Use licences must be applied for once the relevant activity has been approved by DEA 2. Control of activities directly impacting on wetland resources e.g. Few construction workers and construction machinery must be allowed in the wetland area to limit the impacts 3. Construction of access roads on the wetland need to be planned carefully to minimise the impacts. 4. Construction in the wetland area must be undertaken in the presence of the independent Environmental Control officer 5. Cement mixing will need to take place on a hard surface or cement mixing trays (mortar boards) will need to be used for this purpose. Cement mixing will not be permitted to occur where run-off can enter stormwater drains or water bodies. 	<p>Moderate</p>

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			<ol style="list-style-type: none"> 6. No vehicle washing must occur on site unless in a designated wash bay which must then be constructed. Wash bays must be installed with sand and grease traps. 7. A 30m buffer from the wetland is recommended and must be implemented where practical and possible. 8. Management of on-site water use must be strictly implemented 	
3.Impacts on fauna	<p>Part of the proposed alignment spans two areas (e.g. boreholes) that are frequently inundated with surface water. These areas could be important foraging habitat for bird and mammal species.</p> <p>It is possible that species such as the Secretary bird (<i>Sagittarius serpentarius</i>), storks of the genera <i>Ciconia</i> and the Northern Black Korhaan (<i>Afrotis afroides</i>) could potentially collide with the earth wires of the proposed alignment</p>	Moderate	<ol style="list-style-type: none"> 1. Realign the proposed section of the powerline (where there is a potential for foraging habitat for bird and mammal species), to an area south of these inundated area 2. No killing of fauna will be allowed on site 3. Where the line crosses wetland/river/drainage line, the actual crossover span as well as one span on either side of the wetland/river/drainage line should be marked with appropriate bird deterrent devices 4. Where the line crosses primary savannoid grassland and extensive grassland next to floodplains, the line should be marked with appropriate bird deterrent device. 5. The extent of the construction sites and access roads should be demarcated on site layout plans and should be restricted to disturbed areas or those identified with low 	Low

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			<p>conservation importance.</p> <p>6. Areas not impacted by the associated infrastructure, as well as those considered to have a high biological diversity, should be maintained in their present states;</p> <p>7. Maintenance activities should be limited to daylight hours and vehicles should remain on the designated roads at all times; and</p> <p>8. The subsidiary road network should be maintained as gravel tracks that allow for fauna dispersal.</p>	
4. Increased soil erosion:	<p>- Loss of fertile topsoil will occur due to the initial vegetation clearing (for some access roads to tower site); and construction earthworks may cause increased soil erosion as well as stormwater runoff.</p>	Medium	<p>Construction phase:</p> <p>1. It is recommended that care should be taken when constructing a substation and a power line as this might result in soil erosion If at all possible, construction activities should preferably take place during the dry winter months.</p> <p>2. Contractors must limit vegetation clearing to the workable corridor/site along the substation and powerline and the tower sites only. The contractor must stabilise cleared areas to prevent and control erosion and/or sedimentation. Only vegetation that needs to be removed to accommodate the powerline infrastructure must be removed.</p> <p>3. Dust suppression is necessary for stockpiles older than a month.</p> <p>4. Stockpiles in excavated areas should not be higher than 2 m to avoid compaction and visual impacts.</p> <p>5. To prevent erosion of materials stockpiled for a long period of time, the material must be</p>	Low

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			<p>retained in a bermed area.</p> <p>6. Grading of the site is required after construction to ensure free flow of runoff and to prevent ponding of water</p> <p>7. The topsoil must be stockpiled separately and used for rehabilitating around the substation and tower site.</p> <p>Operational phase:</p> <ol style="list-style-type: none"> 1. Plant cover must be maintained and unnecessary trafficking be avoided at all cost. 	
5. Noise impacts	Vehicles transporting materials to and from the site will potentially cause an additional noise burden to adjacent residents (± 1 km from the site) as well as along internal access roads.	Medium	<ol style="list-style-type: none"> 1. Construction activities to be limited to office hours on weekdays as far as possible. 2. The contractor must ensure that noise levels remain within acceptable limits 	Low
6. Impacts on ground water: Groundwater contamination due to construction activities.	Hydrocarbon leakages from plant vehicles and poor management of sources of hydrocarbon leakages has a potential to pollute underground and surrounding resources	Medium	<ol style="list-style-type: none"> 1. Construction vehicles are to be maintained in good working order, to reduce the probability of leakage of fuels and lubricants. 2. All cement mixing must occur on impervious surfaces and within controlled bermed areas. 3. Oil residue must be treated with oil absorbent such as Drizit or similar and this material removed to a licensed waste disposal site. 4. Contractor/s must provide regularly serviced portable chemical toilets for construction workers at a distance no more than 200 m from the place of construction. 5. No materials may be discharged from the construction camps. 	Low
7. Impacts on stormwater:	The accumulation of uncontrolled stormwater.	Medium	<ol style="list-style-type: none"> 1. No stockpiles or construction materials may be stored or placed within any drainage line that may be in close proximity of storm water drains. 	Low

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			<p>2. No stockpiles or construction materials may be stored or placed in close proximity to storm water drains.</p> <p>3. The storm water system especially discharge points must be inspected and damaged areas must be repaired if required.</p>	
<p>8. Impact on dust and air quality: The influx of pollutants will occur due to the establishment of the construction camp and the movement of people and vehicles on site. Excavated and stockpiled material that is vulnerable to wind has the potential to contribute to the influx of pollutants in the air.</p>	<p>Construction machinery and heavy vehicles are likely to generate dust which is likely to be perceptible by adjacent residents. Trucks may potentially distribute dust along internal access roads</p>	Medium to Low	<p>1. Continuous watering of the site should be carried out to prevent dust pollution during windy and dry conditions.</p> <p>2. A continuous dust monitoring process needs to be undertaken during construction.</p> <p>3. Speed restriction of 20km/h must be implemented for all construction vehicles.</p> <p>4. All vehicles transporting friable materials such as sand, rubble etc must be covered by a tarpaulin or wet down.</p> <p>5. Construction work to be undertaken during weekdays as far as practical.</p>	Low
<p>9. Impact on visual and aesthetic quality:</p>	<p>Stockpiled materials; workforce; and construction sites may add to the existing visual impacts from mining activities in the area.</p>	Low	<p>1. Ensure that no litter, refuse, waste, rubbish, rubble, debris and builders wastes generated on the premises be placed, dumped or deposited on adjacent or surrounding properties including road verges, roads or public places and open spaces during or after the construction period. All waste/litter/rubbish etc must be disposed of at an approved dumping site as approved by the Council.</p> <p>2. No wastes may remain on the construction site for more than two weeks.</p> <p>3. Supply sufficient garbage bins throughout the site and empty regularly.</p> <p>4. Ensure good housekeeping is implemented at all times.</p> <p>5. Keep the property neat and litter free at all times and maintain the landscaped areas.</p> <p>6. Indigenous vegetation should be used to create habitats that attract the natural fauna in</p>	Low

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			<p>the area as far as possible</p> <p>7. The Construction camp must be contained to prevent any visual intrusion and be kept in a clean and orderly state at all times.</p> <p>8. When vertical structures or surfaces are lit such as building facades or signs, direct the light downwards.</p>	
9. Impact on socio-economics:	Influx of workers in the area may raise concerns from neighbouring residents	Medium positive	- <ul style="list-style-type: none"> 1. All adjacent landowners must be informed of the construction processes prior to commencement of construction activities. 2. Adjacent land owners must be informed timeously of any service stoppages in their areas. 3. Notification must include possible timeframes for stoppages. 4. Consequences of such stoppages must be clearly indicated to all surrounding/affected land owners. 5. Affected land owners must be timeously informed of any/all maintenance of the bulk water services supply which may result in service stoppages to their properties. Again this must include possible timeframes so alternatives can be provided. 	Low - positive
10. Impacts on traffic and local roads :	<ul style="list-style-type: none"> 1. Traffic will be congested as a result of construction activities. 2. Construction machinery and heavy vehicles are likely to generate dust which is likely to be perceptible by adjacent land owners. Trucks may potentially distribute dust along internal access roads. 	Medium	<p>Construction phase:</p> <ul style="list-style-type: none"> 1. Vehicular movement beyond the property boundaries may not occur during peak hour traffic times (07h30 – 08h30 and 16h00 – 17h00). 2. It must be ensured that a backlog of traffic does not develop at the access points during peak hours through the upgrade to the road system and the implementation of an efficient and effective access control system. 3. Speed restriction of 20km/h must be implemented for all construction vehicles. 	Low

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			<p>4. Implement dust suppression measures (wetting or application of soil binding compound) in all areas that will be affected by construction activities and where dust will be generated</p> <p>Operational phase:</p> <ol style="list-style-type: none"> 1. Roads should be adequately maintained. 2. Adequate signage should be provided and adhered to. 	
11. Health and Safety impacts	Impacts/injuries to humans entering the site unnoticed	Medium	<ol style="list-style-type: none"> 1. The construction site and tower excavations must be fenced off and demarcated using danger tape to ensure that no animals or residents enter the area. 2. Safety clothes and equipment must be worn at all times. 3. No fires are allowed at or around the construction site. The contractor must provide gas fired stoves and heaters to the workers 	Low
12. Impact on socio-economics: Economic and employment status will be impacted on due to access and road construction and building	Local residents are likely to get some of the unskilled labour employment opportunities	Medium +	<p>There are no mitigation measures as the impact is positive.</p> <ol style="list-style-type: none"> 1. The construction phase will provide direct temporary employment for locals, and indirect employment through demand for construction materials, and support services, as well as empowerment and skills transfer opportunities. 2. During operation, there will be job opportunities and continued potential for skills transfer. 	Low +
13. Impact on infrastructure services:	The status of the infrastructure services may be impacted on through the establishment/upgrading of the site and the construction of access roads where required.	Low	<p>There are no mitigation measures as the impact is positive.</p> <ol style="list-style-type: none"> 1. The status of the infrastructure services in the surrounding area will be improved through the 	Low

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			<p>establishment of the site and the upgrade of roads in the area.</p> <ol style="list-style-type: none"> 2. Inspect the site for burst, blocked or leaking water pipe 3. During the operational phase, the sewage system must be inspected for leakages on regular basis and any leakages must be attended to immediately. 	
14.Impacts on unknown and existing cultural and heritage resources	Exposure of unknown heritage features beneath the earth surface	Medium	<ol style="list-style-type: none"> 1. The construction team should be made aware of this. Should any archaeological material or human remains be accidentally unearthed during the course of construction 2. Construction personnel must be alert and inform local Council should they come across any features of heritage value and must cease construction activities immediately 3. No heritage feature can be removed, destroyed and/or interfered with on site without the permission of an accredited archaeologist 	Low
Operational phase impacts: <i>Impacts during the operational phase are expected to occur during the maintenance of the powerline. The following impacts are anticipated:</i>				
Potential impacts:	Description of Impact	Significance rating of impacts:	Proposed mitigation: Construction and operation phase	Significance rating of impacts after mitigation:
1. Clearance of vegetation	- Maintenance of servitude	Low	- Plants that are not interfering with the operation of the powerline during the maintenance must not be disturbed.	Low

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2. Noise and dust pollution	- Noise and dust may occur during maintenance of the powerline	Low	- Existing access roads need to be used all the time - Limit maintenance hours to daytime and weekday - Ensure that noise levels are in accordance with SANS 10103 for residential areas by implementing a monitoring programme	Low
3. Soil erosion	Storm water runoff may cause soil erosion from the tower foundations	Medium	- Regularly inspect all storm water channels - Provide soil conservation measures in areas of susceptible erosion around the tower foundations	Low
4. Disruption to local residents	Power cuts during maintenance may disrupt local people	Medium	- Inform residents if planned power cuts at least 15 -30 days before implementing	Low
Proposed Hermes substation – Alternative 1) - Please also refer to the draft EMP, Specialist assessment and Eskom’s minimum standards for vegetation management and erosion control reports for details on other applicable mitigation measures				
Potential impacts:	Description	Significance rating of impacts: (without mitigation)	Proposed mitigation: Construction and operation phase	Significance rating of impacts after mitigation:
1.Impacts on flora	Alternative 1 for the proposed substation is located on grassland of primary condition with a high graminoid and forb richness.	High	<ol style="list-style-type: none"> 1. The sensitivity map compiled by the Ecological specialist during the Basic Assessment should be used as a decision tool to guide the layout design of the proposed development 2. The “walk-through” of the alignment should preferably coincide with the calendar month of January when the majority of the Red/Orange listed plant species likely to occur is flowering. 3. All Red/Orange tree species that will be impacted by the construction activity must be identified and 	Moderate

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			<p>marked</p> <ol style="list-style-type: none"> 4. Protected trees should be marked prior to the construction phase to facilitate the application process to obtain permission from the Department of Forestry for their removal/pruning. Where possible, old or tall specimens should be left in situ. 5. Contractor with the assistance of the environmental officer must identify and label trees/species that must not be removed during the construction/upgrade of the access roads 6. The construction of “new” access roads should be limited, and existing roads should be used during the construction phase 	
7. Impacts on fauna	Construction of the substation could result in the displacement of the near-threatened Melodious Lark (<i>Mirafra cheniana</i>) and other bird species	Low	<ol style="list-style-type: none"> 1. No killing of fauna will be allowed on site 2. Areas where a high risk of avifaunal collision is predicted, bird flight diverters are to be applied to the earth wires 3. 	Low
3. Increased soil erosion:	Loss of fertile topsoil will occur due to the initial vegetation clearing (for access roads purposes if required) only; and construction earthworks may cause increased soil erosion as well as stormwater runoff.	Medium	<p>Construction phase:</p> <ol style="list-style-type: none"> 1. If at all possible, construction activities should preferably take place during the dry winter months. 2. Stockpiles (if applicable) must be covered in excess during windy conditions. 3. Clearance of vegetation for access road should be minimized and delayed to minimized exposed areas that might be prone to erosion during heavy rains 4. Dust suppression is necessary for stockpiles older than a month. 5. Stockpiles should not be higher than 2 m to avoid compaction and visual impacts. 6. To prevent erosion of materials stockpiled for a long period of time, the material must be retained in a bermed area. 7. The energy / velocity of storm water runoff should be dissipated using metre drains at appropriate intervals. 8. Grading of the site is required after construction to ensure free flow of runoff and to prevent ponding of water 	Low

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			<p>9. The topsoil must be stockpiled separately and used for rehabilitating around the substation site. Should topsoil remain, the locals should be encouraged to take the soil and place it on their vegetable patches.</p> <p>Operational phase:</p> <ol style="list-style-type: none"> 2. The storm water system especially discharge points must be inspected and damaged areas must be repaired if required. 3. Litter blocking storm water systems must be removed. 4. Plant cover must be maintained and unnecessary trafficking be avoided at all cost. 	
4. Noise impacts	Vehicles transporting materials to and from the site will potentially cause an additional noise burden to adjacent residents as well as along internal access roads.	Medium	<ol style="list-style-type: none"> 1. Construction activities to be limited to office hours on weekdays as far as possible. 2. The contractor must ensure that noise levels remain within acceptable limits 	Low
5.Impacts on ground water: Groundwater contamination due to construction activities.	Hydrocarbon leakages from plant vehicles and poor management of sources of hydrocarbon leakages has a potential to pollute underground water resources	Medium	<ol style="list-style-type: none"> 1. Construction vehicles are to be maintained in good working order, to reduce the probability of leakage of fuels and lubricants. 2. All cement mixing must occur on impervious surfaces and within controlled bermed areas. 3. Oil residue must be treated with oil absorbent such as Drizit or similar and this material removed to a licensed waste disposal site. 4. Contractor/s must provide regularly serviced portable chemical toilets for construction workers at a distance no more than 200 m from the place of construction. 5. No materials may be discharged from the construction camps. 6 	Low
6.Impacts on stormwater: The accumulation of stormwater.		Medium	<ol style="list-style-type: none"> 1. No stockpiles or construction materials may be stored or placed within any drainage line that may be in close proximity of storm water drains. 2. No stockpiles or construction materials may be stored or placed in close proximity to storm water drains. 3. The storm water system especially discharge points must be inspected and damaged areas must be repaired if required 	Low

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<p>7.Impact on dust and air quality: The influx of pollutants will occur due to the establishment of the construction camp and the movement of people and vehicles on site. Excavated and stockpiled material that is vulnerable to wind has the potential to contribute to the influx of pollutants in the air.</p>	<p>Construction machinery and heavy vehicles are likely to generate dust which is likely to be perceptible by adjacent residents. Trucks may potentially distribute dust along internal access Roads.</p>	<p>Medium to Low</p>	<ol style="list-style-type: none"> 1. Continuous watering of the site should be carried out to prevent dust pollution during windy and dry conditions. 2. A continuous dust monitoring process needs to be undertaken during construction. 3. Speed restriction of 20km/h must be implemented for all construction vehicles. 4. All vehicles transporting friable materials such a sand, rubble etc must be covered by a tarpaulin or wet down. 5. Construction work to be undertaken during weekdays as far as practical. 	<p>Low</p>
<p>8.Impact on visual and aesthetic quality:</p>	<p>Stockpiled materials; workforce; and construction sites may cause visual impacts in the area.</p>	<p>Medium</p>	<ol style="list-style-type: none"> 1. Ensure that no litter, refuse, waste, rubbish, rubble, debris and builders wastes generated on the premises be placed, dumped or deposited on adjacent or surrounding properties including road verges, roads or public places and open spaces during or after the construction period. All waste/litter/rubbish etc must be disposed of at an approved dumping site as approved by the Council. 2. No wastes may remain on the construction site for more than two weeks. 3. Supply sufficient garbage bins throughout the site and empty regularly. 4. Ensure good housekeeping is implemented at all times. 5. Keep the property neat and litter free at all times and maintain the landscaped areas. 6. Indigenous vegetation should be used to create habitats that attract the natural fauna in the area as far as possible 7. The Construction camp must be contained to prevent any visual intrusion and be kept in a clean and orderly state at all times. 8. When vertical structures or surfaces are lit such as building facades or signs, direct the light downwards. 9. Landscaping should be maintained. 	<p>Low</p>
<p>9.Impact on socio-economics: Impact on nearby residential</p>	<p>Influx of workers in the area may raise concerns from neighbouring residents</p>	<p>Medium - positive</p>	<ol style="list-style-type: none"> 1. All adjacent landowners must be informed of the construction processes prior to commencement of construction activities. 2. Adjacent land owners must be informed timeously of any 	<p>Low - positive</p>

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areas.			<p>service stoppages in their areas.</p> <p>3. Notification must include possible timeframes for stoppages.</p> <p>4. Consequences of such stoppages must be clearly indicated to all surrounding/affected land owners.</p> <p>5. Affected land owners must be timeously informed of any/all maintenance of the bulk water services supply which may result in service stoppages to their properties. Again this must include possible timeframes so alternatives can be provided.</p>	
10.Impacts on traffic and local roads :	<p>1. Traffic will be congested as a result of construction activities.</p> <p>2. Construction machinery and heavy vehicles are likely to generate dust which is likely to be perceptible by adjacent residents. Trucks may potentially distribute dust along internal access roads.</p>	Medium	<p>Construction phase:</p> <p>1. Vehicular movement beyond the property boundaries may not occur during peak hour traffic times (07h30 – 08h30 and 16h00 – 17h00).</p> <p>2. It must be ensured that a backlog of traffic does not develop at the access points during peak hours through the upgrade to the road system and the implementation of an efficient and effective access control system.</p> <p>3. Speed restriction of 20km/h must be implemented for all construction vehicles.</p> <p>Implement dust suppression measures (wetting or application of soil binding compound) in all areas that will be affected by construction activities and where dust will be generated</p> <p>Operational phase:</p> <p>1. Roads should be adequately maintained.</p> <p>2. Adequate signage should be provided and adhered to.</p>	Low
11. Health and Safety impacts	Impacts/injuries to humans entering the site unnoticed	Medium	<p>1. The construction site must be fenced off and demarcated using danger tape to ensure that no animals or residents enter the area.</p> <p>2. Safety clothes and equipment must be worn at all times.</p> <p>3. No fires are allowed at or around the construction site. The contractor must provide gas fired stoves and heaters to the workers</p>	Low

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<p>12. Impact on socio-economics: Economic and employment status will be impacted on due to access and road construction, building construction, paving and landscaping.</p>	<p>Local residents are likely to get some of the unskilled labour employment opportunities</p>	<p>Medium +</p>	<p>There are no mitigation measures as the impact is positive.</p> <ol style="list-style-type: none"> 1. The construction phase will provide direct temporary employment for locals, and indirect employment through demand for construction materials, and support services, as well as empowerment and skills transfer opportunities. 2. During operation, there will be job opportunities and continued potential for skills transfer. 	<p>Low +</p>
<p>13. Impact on infrastructure services:</p>	<p>The status of the infrastructure services may be impacted on through the establishment of the site and the construction of roads.</p>	<p>Low</p>	<p>There are no mitigation measures as the impact is positive.</p> <ol style="list-style-type: none"> 1. The status of the infrastructure services in the surrounding area will be improved through the establishment of the site and the upgrade of roads in the area. 2. Insect the site for burst, blocked or leaking water pipe 3. During the operational phase, the sewage system must be inspected for leakages on regular basis and any leakages must be attended to immediately. 	<p>Low</p>
<p>14. Impacts on unknown cultural and heritage resources</p>	<p>Exposure of unknown heritage features beneath the earth surface</p>	<p>Medium</p>	<ol style="list-style-type: none"> 1. Should any archaeological material or human remains be accidentally unearthed during the course of construction, the construction team should be informed 2. Construction personnel must be alert and inform local Council should they come across any features of heritage value and must cease construction activities immediately 3. No heritage feature can be removed, destroyed and/or interfered with on site without the permission of an accredited archaeologist 	<p>Low</p>
<p>Operational phase impacts: <i>Impacts during the operational phase are expected to occur during the installation of substation infrastructure (future transformers, lines, feeders, storeroom, and fencing) and during maintenance and repairs of the Substation. The following impacts are anticipated:</i></p>				

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Potential impacts:	Description of Impact	Significance rating of impacts:	Proposed mitigation: Construction and operation phase	Significance rating of impacts after mitigation:
1. Noise and dust pollution	<ul style="list-style-type: none"> - Noise and dust may occur during maintenance of the substation - noise levels may emanate from transformers and cooling fans 	Medium to Low	<ul style="list-style-type: none"> - Dust suppression and wet spraying should be implemented - Limit maintenance hours to daytime and weekday - Ensure that noise levels are in accordance with SANS 10103 for residential areas by implementing a monitoring programme 	Low
2. Soil erosion	Storm water runoff may cause soil erosion outside the boundaries of the substation	Medium	<ul style="list-style-type: none"> - Regularly inspect all storm water channels - Provide soil conservation measures in areas of susceptible erosion around the substation 	Low
3. Disruption to local residents	Power cuts during maintenance may disrupt local people	Medium	<ul style="list-style-type: none"> - Inform residents if planned power cuts at least 15 -30 days before implementing 	Low
4. Light pollution	Potential lighting pollution serving as a nuisance to neighbouring residents.	Medium	<ul style="list-style-type: none"> - Install lighting in such a manner as to provide security but which does not constitute 'light pollution' to the surrounding areas. 	Low

Decommissioning phase - *The closure phase for the substation is anticipated to be within 30 - 40 years from development of the facility. Should the facility be decommissioned it is anticipated that the structures will be dismantled and removed and a rehabilitation plan (removal of all hydrocarbons, substation components and provision of recycling plans) approved by the relevant authorities will be implemented.*

Indirect impacts:

- The construction of the access road will result in the direct impact of minimal vegetation clearing when widening the roads.
- Loss of topsoil due to earthworks and foundation establishment for the substation.
- Noise from construction vehicles and equipments and the labourers

Cumulative impacts:
Visual Cumulative impacts will emanate from the substation itself as there are existing distribution powerlines already transecting the area

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Proposed Hermes substation – Alternative 2) - Please also refer to the draft EMP, Specialist assessment and Eskom's minimum standards for vegetation management and erosion control reports for details on other applicable mitigation measures				
Potential impacts:	Description	Significance rating of impacts: (without mitigation)	Proposed mitigation: Construction and operation phase	Significance rating of impacts after mitigation:
1.Impacts on flora	<p>The proposed area were found to be used for grazing and the site was trampled with numerous paths transverse the site.</p> <p>The area comprised a high frequency of the tree <i>Acacia karoo</i> and <i>invasives</i> such as <i>Opuntia</i> species (Prickly Pear)</p> <p>Construction impacts on flora are likely to be limited to the existing shrubs occupying the site and potentially to limited areas along the access roads leading to the site. There is no anticipated impact on Red or Orange Data species within the site during the construction phase.</p>	Moderate	Contractor with the assistance of the environmental officer must identify and label trees that must not be removed during the construction of the access roads	Low
2. Impacts on fauna	There is no anticipated impact on Red or Orange Data species within and around the site	Low	No killing of fauna will be allowed on site	Low
3. Increased soil erosion:	Loss of fertile topsoil will occur due to the initial vegetation clearing (for access roads purposes if required) only; and construction earthworks	Medium	Construction phase: 1. If at all possible, construction activities should preferably take place during the dry winter months.	Low

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	may cause increased soil erosion as well as stormwater runoff.		<ol style="list-style-type: none"> 2. Stockpiles (if applicable) must be covered in excess during windy conditions. 3. Clearance of vegetation for access road should be minimized and delayed to minimized exposed areas that might be prone to erosion during heavy rains 4. Dust suppression is necessary for stockpiles older than a month. 5. Stockpiles should not be higher than 2 m to avoid compaction and visual impacts. 6. To prevent erosion of materials stockpiled for a long period of time, the material must be retained in a bermed area. 7. The energy / velocity of storm water runoff should be dissipated using metre drains at appropriate intervals. 8. Grading of the site is required after construction to ensure free flow of runoff and to prevent ponding of water 9. The topsoil must be stockpiled separately and used for rehabilitating around the substation site. Should topsoil remain, the locals should be encouraged to take the soil and place it on their vegetable patches. <p>Operational phase:</p> <ol style="list-style-type: none"> 4. The storm water system especially discharge points must be inspected and damaged areas must be repaired if required. 5. Litter blocking storm water systems must be removed. 6. Plant cover must be maintained and unnecessary trafficking be avoided at all cost. 	
4. Noise impacts	Vehicles transporting materials to and from the site will potentially cause an additional noise burden to adjacent residents as well as along internal access roads.	Medium	<ol style="list-style-type: none"> 1. Construction activities to be limited to office hours on weekdays as far as possible. 2. The contractor must ensure that noise levels remain within acceptable limits 	Low
5. Impacts on ground water: Groundwater contamination due to construction activities.	Hydrocarbon leakages from plant vehicles and poor management of sources of hydrocarbon leakages has a potential to pollute underground water resources	Medium	<ol style="list-style-type: none"> 1. Construction vehicles are to be maintained in good working order, to reduce the probability of leakage of fuels and lubricants. 2. All cement mixing must occur on impervious surfaces and within controlled bermed areas. 	Low

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			<p>3. Oil residue must be treated with oil absorbent such as Drizit or similar and this material removed to a licensed waste disposal site.</p> <p>4. Contractor/s must provide regularly serviced portable chemical toilets for construction workers at a distance no more than 200 m from the place of construction.</p> <p>5. No materials may be discharged from the construction camps.</p> <p>6</p>	
<p>6.Impacts on stormwater: The accumulation of stormwater.</p>		Medium	<p>1. No stockpiles or construction materials may be stored or placed within any drainage line that may be in close proximity of storm water drains.</p> <p>2. No stockpiles or construction materials may be stored or placed in close proximity to storm water drains.</p> <p>3. The storm water system especially discharge points must be inspected and damaged areas must be repaired if required</p>	Low
<p>7.Impact on dust and air quality: The influx of pollutants will occur due to the establishment of the construction camp and the movement of people and vehicles on site. Excavated and stockpiled material that is vulnerable to wind has the potential to contribute to the influx of pollutants in the air.</p>	<p>Construction machinery and heavy vehicles are likely to generate dust which is likely to be perceptible by adjacent residents. Trucks may potentially distribute dust along internal access Roads.</p>	Medium to Low	<p>1. Continuous watering of the site should be carried out to prevent dust pollution during windy and dry conditions.</p> <p>2. A continuous dust monitoring process needs to be undertaken during construction.</p> <p>3. Speed restriction of 20km/h must be implemented for all construction vehicles.</p> <p>4. All vehicles transporting friable materials such a sand, rubble etc must be covered by a tarpaulin or wet down.</p> <p>5. Construction work to be undertaken during weekdays as far as practical.</p>	Low
<p>8.Impact on visual and aesthetic quality:</p>	<p>Stockpiled materials; workforce; and construction sites may cause visual impacts in the area.</p>	Medium	<p>1. Ensure that no litter, refuse, waste, rubbish, rubble, debris and builders wastes generated on the premises be placed, dumped or deposited on adjacent or surrounding properties including road verges, roads or public places and open spaces during or after the construction period. All waste/litter/rubbish etc must be disposed of at an approved dumping site as approved by the Council.</p> <p>2. No wastes may remain on the construction site for more than two weeks.</p> <p>3. Supply sufficient garbage bins throughout the site and empty regularly.</p>	Low

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			<p>4. Ensure good housekeeping is implemented at all times.</p> <p>5. Keep the property neat and litter free at all times and maintain the landscaped areas.</p> <p>6. Indigenous vegetation should be used to create habitats that attract the natural fauna in the area as far as possible</p> <p>7. The Construction camp must be contained to prevent any visual intrusion and be kept in a clean and orderly state at all times.</p> <p>8. When vertical structures or surfaces are lit such as building facades or signs, direct the light downwards.</p> <p>9. Landscaping should be maintained.</p>	
<p>9.Impact on socio-economics: Impact on nearby residential areas.</p>	<p>Influx of workers in the area may raise concerns from neighbouring residents</p>	<p>Medium - positive</p>	<p>1. All adjacent landowners must be informed of the construction processes prior to commencement of construction activities.</p> <p>2. Adjacent land owners must be informed timeously of any service stoppages in their areas.</p> <p>3. Notification must include possible timeframes for stoppages.</p> <p>4. Consequences of such stoppages must be clearly indicated to all surrounding/affected land owners.</p> <p>5. Affected land owners must be timeously informed of any/all maintenance of the bulk water services supply which may result in service stoppages to their properties. Again this must include possible timeframes so alternatives can be provided.</p>	<p>Low - positive</p>
<p>10.Impacts on traffic and local roads :</p>	<p>1. Traffic will be congested as a result of construction activities.</p> <p>2. Construction machinery and heavy vehicles are likely to generate dust which is likely to be perceptible by adjacent residents. Trucks may potentially distribute dust along internal access roads.</p>	<p>Medium</p>	<p>Construction phase:</p> <p>1. Vehicular movement beyond the property boundaries may not occur during peak hour traffic times (07h30 – 08h30 and 16h00 – 17h00).</p> <p>2. It must be ensured that a backlog of traffic does not develop at the access points during peak hours through the upgrade to the road system and the implementation of an efficient and effective access control system.</p> <p>3. Speed restriction of 20km/h must be implemented for all construction vehicles.</p> <p>Implement dust suppression measures (wetting or application of soil binding compound) in all areas that will be affected by construction</p>	<p>Low</p>

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			<p>activities and where dust will be generated</p> <p>Operational phase:</p> <ol style="list-style-type: none"> 1. Roads should be adequately maintained. 2. Adequate signage should be provided and adhered to. 	
11. Health and Safety impacts	Impacts/injuries to humans entering the site unnoticed	Medium	<ol style="list-style-type: none"> 1. The construction site must be fenced off and demarcated using danger tape to ensure that no animals or residents enter the area. 2. Safety clothes and equipment must be worn at all times. 3. No fires are allowed at or around the construction site. The contractor must provide gas fired stoves and heaters to the workers 	Low
12. Impact on socio-economics: Economic and employment status will be impacted on due to access and road construction, building construction, paving construction and landscaping.	Local residents are likely to get some of the unskilled labour employment opportunities	Medium +	<p>There are no mitigation measures as the impact is positive.</p> <ol style="list-style-type: none"> 1. The construction phase will provide direct temporary employment for locals, and indirect employment through demand for construction materials, and support services, as well as empowerment and skills transfer opportunities. 2. During operation, there will be job opportunities and continued potential for skills transfer. 	Low +
13. Impact on infrastructure services:	The status of the infrastructure services may be impacted on through the establishment of the site and the construction of roads.	Low	<p>There are no mitigation measures as the impact is positive.</p> <ol style="list-style-type: none"> 1. The status of the infrastructure services in the surrounding area will be improved through the establishment of the site and the upgrade of roads in the area. 2. Inspect the site for burst, blocked or leaking water pipe 3. During the operational phase, the sewage system must be inspected for leakages on regular basis and any leakages must be attended to immediately. 	Low
14. Impacts on unknown cultural and heritage resources	Exposure of unknown heritage features beneath the earth surface	Medium	<ol style="list-style-type: none"> 1. The construction team should be made aware of this. Should any archaeological material or human remains be accidentally unearthed during the course of construction 2. Construction personnel must be alert and inform local 	Low

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			Council should they come across any features of heritage value and must cease construction activities immediately 3.No heritage feature can be removed, destroyed and/or interfered with on site without the permission of an accredited archaeologist	
Operational phase impacts: <i>Impacts during the operational phase are expected to occur during the installation of substation infrastructure (future transformers, lines, feeders, storeroom, and fencing) and during maintenance and repairs of the Substation. The following impacts are anticipated:</i>				
Potential impacts:	Description of Impact	Significance rating of impacts:	Proposed mitigation: Construction and operation phase	Significance rating of impacts after mitigation:
1.Noise and dust pollution	<ul style="list-style-type: none"> - Noise and dust may occur during maintenance of the substation - noise levels may emanate from transformers and cooling fans 	Medium to Low	<ul style="list-style-type: none"> - Dust suppression and wet spraying should be implemented - Limit maintenance hours to daytime and weekday - Ensure that noise levels are in accordance with SANS 10103 for residential areas by implementing a monitoring programme 	Low
4. Soil erosion	Storm water runoff may cause soil erosion outside the boundaries of the substation	Medium	<ul style="list-style-type: none"> - Regularly inspect all storm water channels - Provide soil conservation measures in areas of susceptible erosion around the substation 	Low
5. Disruption to local residents	Power cuts during maintenance may disrupt local people	Medium	<ul style="list-style-type: none"> - Inform residents if planned power cuts at least 15 -30 days before implementing 	Low
6. Light pollution	Potential lighting pollution serving as a nuisance to neighbouring residents.	Medium	<ul style="list-style-type: none"> - Install lighting in such a manner as to provide security but which does not constitute 'light pollution' to the surrounding areas. 	Low
Decommissioning phase - <i>The closure phase for the substation is anticipated to be within 30 - 40 years from development of the facility. Should the facility be decommissioned it is anticipated that the structures will be dismantled and removed and a rehabilitation plan (removal of all hydrocarbons, substation components and provision of recycling plans) approved by the relevant authorities will be implemented.</i>				

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Indirect impacts:

- The construction of the access road will result in the direct impact of minimal vegetation clearing when widening the roads.
- Loss of topsoil due to earthworks and foundation establishment for the substation.
- Noise from construction vehicles and equipments and the labourers

Cumulative impacts:

Visual Cumulative impacts will emanate from the substation itself as there are existing distribution powerlines already transecting the area

Decommissioning phase - *The decommissioning phase would entail the dismantling of the powerlines, the construction of access roads for dismantling (if applicable) and the transportation of materials from the sites. It is anticipated that the structures will be dismantled and removed and a rehabilitation plan (removal of all hydrocarbons, tower structures and provision of recycling plans) approved by the relevant authorities will be implemented. However the closure and decommissioning require a separate EIA process and will be conducted as and when closure is required.*

Indirect impacts:

- The construction of the access road to powerlines sites will result in impact, though of a minimal nature - vegetation clearing when widening the roads.
- Loss of topsoil due to earthworks and foundation establishment for the tower structures.
- Noise from construction vehicles and equipments and the labourers

Direct impacts: (Construction phase)

*The substation will be located on a privately owned agricultural farm land (cattle farming) to ensure and no significant impacts are anticipated from this location. It is evident that landowners, whose properties may be affected, will be concerned about the development. It is advisable that Eskom negotiate details of the final power line corridor and tower positions with affected landowners individually (in consultation with ward Councillors) before finalising the design. This will be undertaken as a normal part of the land and/or servitude acquisition process. As indicated, an access road may be required for ease access to the site, although the construction of the road is not a listed activity, the impact assessment of this access road has been undertaken as part of this BA. A geotechnical assessment (**Appendix D**) has been undertaken to identify potential stability issues that may emanate from this development. The impacts are assessed and presented as follows:*

Indirect impacts:

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- None

Cumulative impacts:

- None

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.

Alternative A (proposed powerline alignment – Hermes Deviation)

The proposed alignment (Hermes powerline deviation) and Substation Alternatives 2 are the preferred from the environmental perspective as the majority of the alignment occurs within transformed and disturbed agricultural lands. In general, the proposed alignment transect one wetland (Rhenospruit) to the west of the site and location of towers with the wetland can be avoided thus least impacts (birds, habitat destruction etc.)

With regard to the site for the location of the substation, it has emerged during the Basic Assessment process that the proposed substation Alternative site 1 is located in an area of high ecological sensitivity and it was therefore a recommendation of the Ecological specialist that an alternative site be considered for the location of the substation. The location of the site was highlighted in the Ecological sensitivity map compiled by the Ecological specialist as less sensitive as the site was found to be used for grazing and the site was trampled with numerous paths traversing the site.

Substation alternative 2 further comprised a high frequency of the tree Acacia karoo and invasives such as Opuntia species (Prickly Pear). It is a conclusion of the Ecological opinion undertaken that Alternative site B be considered for location of the substation. No wetland conditions were observed on the proposed site and the vegetation was observed to have been encroached due to overgrazing of the area. The nearest wetland condition was noted to be about 200 – 250m north of the proposed site. Substation alternative 2 is also conveniently located next to access road which will which limit the impact of creating new roads, thereby reducing further environmental impacts.

Based on the summary of environmental observations presented, it is a conclusion of this BA that the proposed project will have moderate to low impacts on the bio-physical environment, all of which can be fully mitigated and managed, and where possible prevented. There will be impacts on vegetation, soil, dust and noise generated by the earth moving equipment, waste generated by the influx of contractor's and establishment of the contractor's camps. There will be minimal clearing of vegetation for the purposes of access road construction. Applying for a Water use licence (as the activity is located 500m from a watercourse) and fencing the site to avoid impact on the surrounding natural vegetation are some of the key mitigation measures that must be implemented during construction.

Substation Alternative 1

From an ecological perspective, Alternative 1 for the Proposed Substation location is not preferred due to the ecological sensitivities that were identified on site. The study site is dominated by natural vegetation consisting of thicket and bushland. The proposed substation is located on grassland of primary condition with a high graminoid and forb richness. The findings of the Ecological specialist further indicate that the site is typical of good conditioned Vaal-Vet Sandy Grassland and should preferably be conserved.

Substation Alternative 2

It was an opinion of the Ecological specialist that this site be considered for the location of the substation as there was evidence of overgrazing of cattle and invasive species. Mitigation measures to protect the surrounding natural vegetation to the south of the site must be implemented.

No-go alternative (compulsory)

The No-go option implies that the Project does not proceed, and will thus comprise of Eskom not going ahead with the construction of the proposed power line and substation. Ideally this would be the preferred alternative as the status quo of the environment remains unchanged, however due to the growing demand for energy and mining activities that will require electricity in the area, this alternative is not feasible. Should Eskom rely on the existing network to supply future demand it is highly likely that present supply will be compromised due to the increased load on the network.

- **Direct impacts**

- Eskom and the City of Matlosana will not be able to supply sufficient electricity to customers and new developments.
- Limited development and employment opportunities will be created (i.e. no construction phase).

- **Indirect Impacts**

- Local suppliers and contractors will not benefit from the business opportunities relating to construction
- No new business and industrial ventures due to lack of electricity
- Power outages and uncertain power supply may be experienced in the study area
- No increase in the economic activity in the area and as a result socio economics will be depressed.

SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?

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

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.

This BAR has provided a comprehensive assessment of the potential environmental impacts associated with the proposed Hermes deviation powerline and substation project. These impacts have been identified by the EIA team (including specialists) and I&APs. The key findings of the BA are discussed in this Report. In general, the proposed development will have an impact of low significance provided that there is effective application of the mitigation measures proposed in this BAR and the EMPr. The majority of these impacts are easily mitigated and can be reduced to lower significance through appropriate design and mitigation measures. No unacceptably impacts of unacceptably high significance are foreseen once proper mitigation measures have been implemented. The findings of the specialists that were involved are briefly presented as follows:

- The Ecological specialist (fauna and flora) concluded that the proposed substation (Alternative 1) coincides with an area of very high sensitivity. The proposed substation is located on grassland of primary condition with a high graminoid and forb richness. It was a recommendation of the Ecological specialist that the site be moved to an area of moderate sensitivity as per the Ecological sensitivity map. Envirolution has subsequently considered an alternative site for the location of the substation. The preferred location of substation Alternative 2 was therefore based on the findings of the Ecological assessment.
- It was a recommendation of the Ecological specialist that the proposed section of the powerline (where there is a potential for foraging habitat for bird and mammal species) be aligned, to an area south of these inundated area with surface water.
- An additional Ecological opinion undertaken for an alternative substation site 2 indicate that the site is less sensitive as there was evidence of overgrazing of cattle and invasive species. The site was therefore regarded as suitable for the location of the substation. It is however to be noted that the neighbouring natural environment require protection during construction.
- The specialist heritage, visual and Geotech, and agricultural potential did not raise issues of significant concern against the proposed development.
- It is a recommendation of the Geotechnical Engineer that a detail geotechnical investigation be conducted along the powerline route as well as substation site in order to verify this desk study and to provide site specific appropriate founding solutions. The recurrence interval of mining induced seismic events should be determined and taken into consideration for the design of pylons and the substation.

Accordingly and based on the specialist assessment and various environmental assessment of the conditions, the proposed Hermes deviation alignment and substation Alternative 2 have emerged as the preferred options from an environmental perspective. It is therefore a recommendation of this Basic Assessment that these alternatives be authorized and the project be granted a positive authorisation.

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The preferred and the recommended alternative option in this BAR are based on the minimal impacts of the proposed project on the bio-physical environment to be affected by the project. It is therefore recommended that the environmental authorities authorise the development subject to the following conditions:

- Before Commencement of construction, the Site Contractor prepares an Environmental Protection Plan for the protection of natural areas around the site. The Plan shall cover all environmental protection works and shall also include descriptions of environmental safeguards and emergency procedures.
- A site assessment “walk-through” must be undertaken by the ecological specialist to identify areas comprising of Orange listed plant species or protected trees that are at risk or threatened by construction activities. These plants be identified and marked prior to the construction phase;
- Protected trees that may be affected by construction should be marked prior to the construction phase to facilitate the application process to obtain permission from the Department of Agriculture, Forestry and Fisheries for their removal/pruning
- The applicant must apply for a Water use Licence from the Department of Water Affairs in areas where water resources are impacted (streams and wetland crossing) before commencement of construction in those areas;
- The applicant undertake detail geotechnical investigation be conducted along the powerline route as well as substation site in order to verify this desk study and to provide site specific appropriate founding solutions;
- An independent ECO should be present during construction (erection of powerline and stringing of cables) at the site to ensure that the natural vegetation is not damaged
- Compliance with the mitigation measures outlined in this BA report and EMPr;
- Continued consultation and engagement with all relevant stakeholders – especially property owners, neighbouring and local communities, and respective municipalities during labour recruitment and procurement for services and supplies during construction phase;
- Monthly monitoring and evaluation of the construction sites for environmental compliance;
- Eskom shall ensure that adequate protection measures are taken to minimize the potential risk of theft during the construction and operational phase.
- Implementation of the environmental awareness plan to the contractor’s during the construction of the powerlines;
- Compliance with all legal requirements in relation to environmental management and conditions of the authorisation issued by DEA.

Is an EMPr attached?

YES	NO
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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.

BASIC ASSESSMENT REPORT

Nkhensani Khandlhela

NAME OF EAP

SIGNATURE OF EAP

DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

D1: Geotechnical Assessment

D2: Ecological Assessment

D3: Heritage Impact Assessment

D4: Wetland Assessment

D5: Agricultural Assessment

D6: Visual Assessment

Appendix E: Public Participation Process

Appendix F: Impact Assessment and Assessment Methodology

Appendix G: Environmental Management Programme (EMPr)

- Eskom Guideline for the **Prevention and Control of Erosion** on Eskom Distribution North Western Region Land and Servitudes, September 2003.
- Eskom **Land and Biodiversity** Standard, December 2011.
- Eskom **Standard for Bush Clearance and Maintenance of Servitude Routes** Date: May 2000

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information

Correspondence with Authorities