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|  | (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 becauseif it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.
14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included on the electronic copy of the report submitted to the competent authority.

**Section A: Activity information**

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| --- | --- | --- |
| Has a specialist been consulted to assist with the completion of this section? | YES | **√ NO** |
| If YES, please complete the formentitled “Details of specialist and declaration of interest” for the specialist appointed and attach in Appendix I. | | |

1. **Project DESCRIPTION**
2. **Describe the project associated with the listed activities applied for**

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| The **Eskom Geluk-Rural Project** will consist of:  The project entails the construction of an approximate 1.4km 88kVpower line from the Rhombus T-off, looping into the Geluk Substation. Access roads may be required in order to access the substation as well as to construct and maintain the lines in future.  The study area is located north-west of Brits in the Geluk area in the jurisdiction of the Madibeng Local Municipality, North West Province. |

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

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| **Listed activity as described in GN R.544, 545 and 546** | **Description of project activity** |
|
| **GNN R.544, 18 June 2010, Item 10**  The construction of facilities or infrastructure for the transmission and distribution of electricity  (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts;  (ii) or inside urban areas or industrial complexes with a capacity of 275 kilovolts or more. | An approximate 1.4km 88kV line will constructed |

1. **FEASIBLE AND REASONABLE ALTERNATIVES**

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

(a) the property on which or location where it is proposed to undertake the activity;

(b) the type of activity to be undertaken;

(c) the design or layout of the activity;

(d) the technology to be used in the activity;

(e) the operational aspects of the activity; and

(f) the option of not implementing the activity.

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

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

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

**a) Site alternatives**

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

In the case of **linear activities**:

|  |  |  |
| --- | --- | --- |
| **Alternative:** | **Latitude (S):** | **Longitude (E):** |
| **Alternative S1 (PREFERRED)** | | |
| * Starting point of the activity   Rhombus T-off | 25° 35' 32.67"S | 27° 38' 58.57" E |
| * Middle/Additional point of the activity   Approximate middle of route | 25° 35' 15.98" S | 27° 39' 04.39" E |
| * End point of the activity   Existing Geluk-Rural Substation | 25° 34' 52.17" S | 27° 38' 57.86" E |
| **Alternative S2 (if any)** | | |
| * Starting point of the activity   Rhombus T-off | 28° 35' 32.45"S | 27° 30' 57.42" E |
| * Middle/Additional point of the activity   Approximate middle of route | 25° 35' 15.98" S | 27° 39' 01.96" E |
| * End point of the activity   Existing Geluk-Rural Substation | 25° 34' 52.17" S | 27° 38' 57.86" E |
| **Alternative S3 (if any)** | | |
| * Starting point of the activity   Rhombus T-off | 25° 35' 28.77"S | 27° 38' 39.32" E |
| * Middle/Additional point of the activity   Approximate middle of route | 25° 35' 08.89" S | 27° 38' 42.50" E |
| * End point of the activity   Existing Geluk-Rural Substation | 25° 34' 52.17" S | 27° 38' 57.86" E |

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

Refer to Appendix A: “Co-ordinates of Preferred and Alternative Routes”

**ROUTE DESCRIPTION**

The study area is situated in a rural area. Agricultural activity is mostly pivot irrigation of various vegetable crops, but also maize and wheat. The area is characterised by typical associated infrastructure such as farm dams, irrigation channels, farms steads, barns, existing power lines and gravel roads.

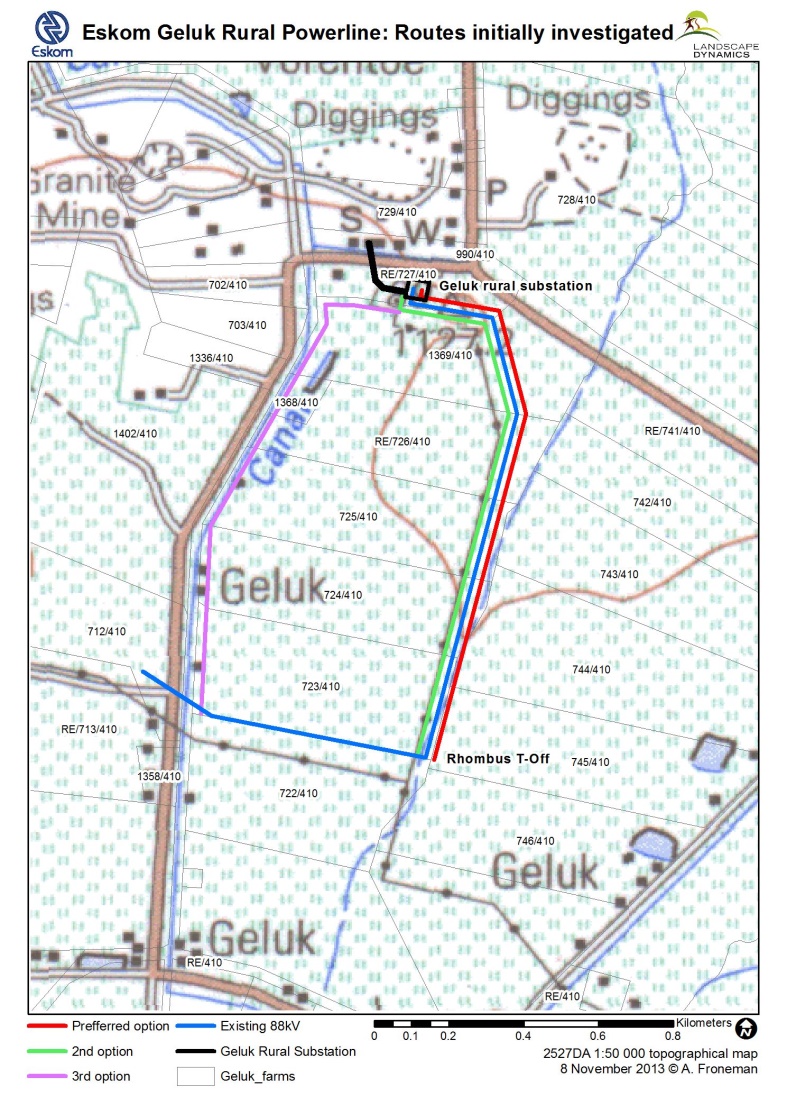
The area is flat with one koppie to the east of the existing Geluk-Rural Substation.

Apart from the mentioned hill, which shows natural vegetation, the rest of the area is disturbed / totally transformed by recent human interventions (agricultural fields and associated infrastructure).

**ROUTE ALTERNATIVES**

Three Route Alternatives were investigated. Refer to the route map below - **Routes Initially Investigated**, indicating the Preferred Route (red line), Route Alternative 2 (green line) and Route Alternative 3 (pink line). The blue line is an existing 88kV power line. This map is also attached in Appendix A of this report.

**Route Alternatives Initially Investigated**



Specialist studies were undertaken (attached in Appendix D) and the conclusions thereof are as follows:

* *Vegetation Ecological Investigation*

The first section of the Preferred Alternative (red line) as originally proposed will pass through a sensitive ecosystem (Rocky outcrop area) and has a high conservation status with a medium sensitivity to disturbance. Vegetation units within the other two route alternatives have a low conservation value with low sensitivity.

It is therefore concluded that from a plant ecological point of view Alternatives 2 and 3 are the preferred routes. Due to the transformed nature of the units within these two proposed routes little mitigation measures are needed while the construction of the power lines should have no significant negative effect on the environment.

* *Heritage Impact Assessment*

No sites of cultural importance were identified on any of the three route alternatives, but sites were found close to the originally proposed Preferred Alternative and Alternative 3.

From a heritage perspective, Alternative 2 is therefore preferred due to the close locality of cultural heritage sites to the other options.

* *Avifauna Impact Assessment*

Both the originally proposed Preferred Route and Alternative 2 run through completely transformed habitat which is unlikely to attract Red Data species regularly. Although Alternative 3 also runs through transformed habitat, it crosses over several farm dams. These farm dams could attract waterbirds, including several Red Data species, which may collide with the power line.

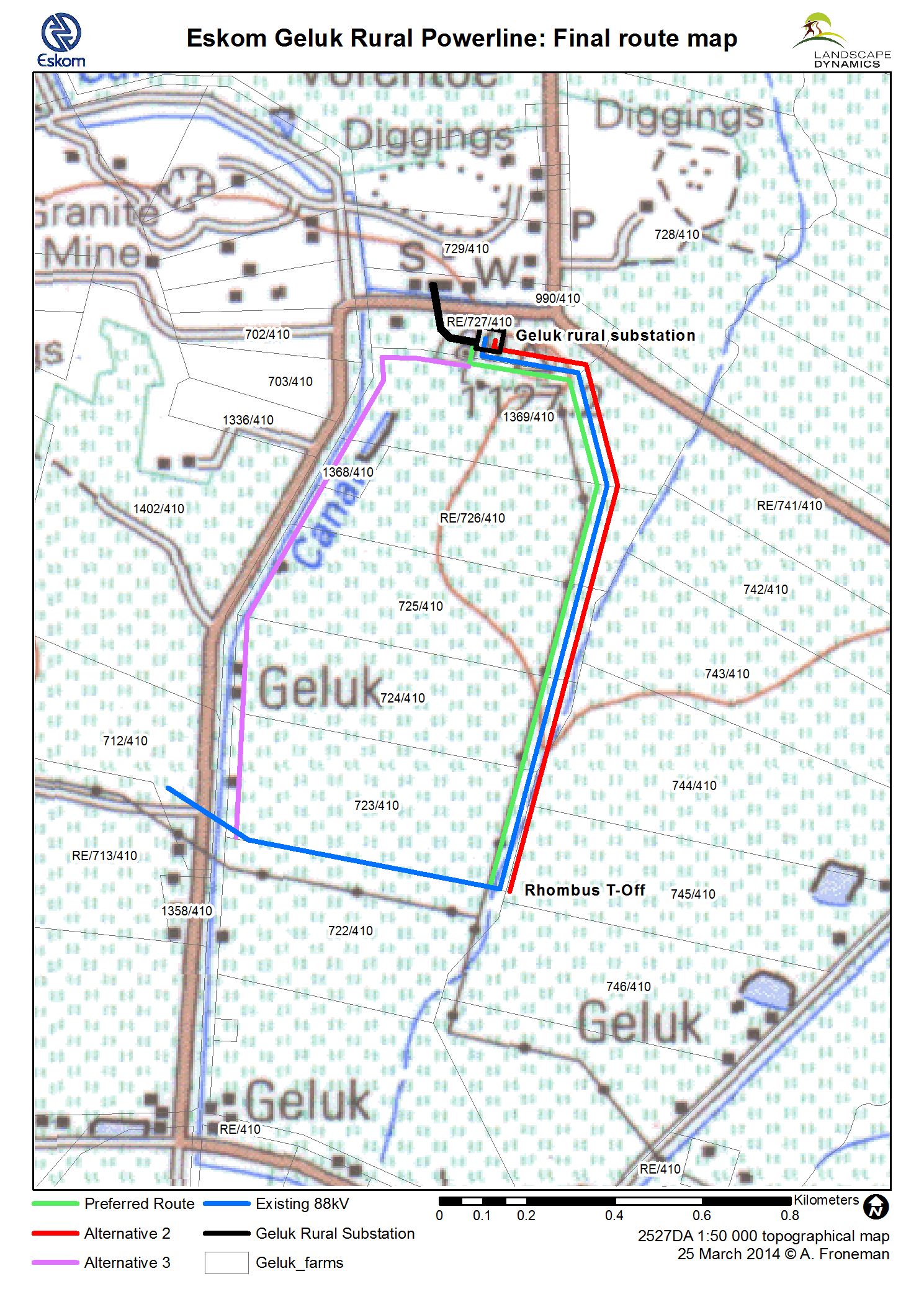
From a bird impact assessment perspective, Alternative 3 is therefore the least preferred option. Alternatives 1 and 2 run very close together and are therefore very similar in terms of potential impacts, and are both suitable options from a bird impact perspective

**Conclusion on selecting an alternative**

**From the above, it is clear that originally proposed Route Alternative 2 will have the least impact on the environment. Therefore, tor the purposes of this application for Environmental Authorisation, Route Alternative 2 is now the Preferred Route Alternative. The route map below is the final map for this project, indicating the Preferred Route as selected through the specialist studies.**

The descriptions of the different alternatives further on in this report will therefore be based on the map below.

**FINAL ROUTE MAP**



**b) Lay-out alternatives**

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

**c) Technology alternatives**

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| --- |
| **Alternative 1 (preferred alternative)** |
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| **Alternative 2** |
|  |
| **Alternative 3** |
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**d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)**

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| --- |
| **Alternative 1 (preferred alternative)** |
|  |
| **Alternative 2** |
|  |
| **Alternative 3** |
|  |

**e) No-go alternative**

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| The existing Rural–Geluk / Rhombus line is currently a Hare conductor and faults on the line, with associated power cuts, are a common occurrence. This has a direct negative impact on the users of the line and the need for line refurbishment was identified.  Should the no-go option apply, the status quo will not just remain, but it will get worse. Electricity supply will become less and less reliable and the impact on its users more intense.  A lack of electricity and/or an unreliable supply will have a definite negative impact on the economy of the area. |

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

1. **Physical size of the activity**

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

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| --- | --- | --- |
| **Alternative:** |  | **Size of the activity:** |
| Alternative A1[[1]](#footnote-1) (preferred activity alternative) |  | m2 |
| Alternative A2 (if any) |  | m2 |
| Alternative A3 (if any) |  | m2 |

or, for linear activities:

|  |  |  |
| --- | --- | --- |
| **Alternative:** |  | **Length of the activity:** |
| Alternative A1 (preferred activity alternative) |  | ± 1.4km |
| Alternative A2 (if any) |  | ± 1.4 km |
| Alternative A3 (if any) |  | ± 1.3km |

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

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

1. **Site Access**

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| --- | --- | --- |
| Does ready access to the site exist? | √ YES | NO |
| If NO, what is the distance over which a new access road will be built | See below | |

Describe the type of access road planned:

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| --- |
| The new power line route follows the existing88kV line for the entire route and existing access and maintenance roads will therefore be used. It may however be required to upgrade some of the existing roads or build very short sections of new access roads. Please note that this is a short line (approximately 1.4km only) and the need for upgrades / new roads is minimal.  If and where required, details regarding the routes, access points and gates will be communicated with the relevant landowners. |

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.

Detail regarding the access route localities, if required, will only be determined during the design phase of the project.

1. **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 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).

1. **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 50metres 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.

1. **Sensitivity map**

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

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

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

**Sensitivity Maps (no maps attached)**

* Ecological Sensitivity Map – no ecological sensitive areas were identified on the Preferred Route
* No areas on the Preferred Route were identified that should be fitted with Birds Flight Diverters

1. **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.

1. **FACILITY ILLUSTRATION**

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

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

1. **ACTIVITY MOTIVATION**

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

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| 1. Is the activity permitted in terms of the property’s existing land use rights?   A new servitude will be registered directly adjacent to the existing 88kV line. The servitude width will be 31m. | YES | √NO | Please explain |

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| 1. Will the activity be in line with the following? | | | |
| (a) Provincial Spatial Development Framework (PSDF)  The North West Province’s PSDF was not available at the time of writing this report (numerous unsuccessful attempts were made to obtain the PSDF). However, in general it can be stated that the purpose of a PSDF is to guide development to be sustainable, thereby ensuring that development follows the principles of the ‘tripple bottom line’, namely Ecological integrity (health of the Planet), Social equity (situation of the People) and Economic efficiency (attainment of Prosperity).  Applicable to this project are the following:  Ecological-, heritage- and bird impact assessments were undertaken for this project. The proposed route takes into account the findings of these studies and it can be said that this development is protecting the ecological environment whilst ensuring a more reliable electricity supply to a rural area with an associated positive economic impact. | √YES | NO | Please explain |

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| (b) Urban edge / Edge of Built environment for the area  Not applicable | YES | NO | Please explain |

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| (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?).  The 2011/2012 Final Draft **Integrated Development Plan** for the Bojanala Platinum District Municipality states the following:  **Medium Term Strategic Framework**  The Medium Term Strategic Framework (MTSF, 2009-2014) whose basic thrust is to improve the conditions of life of all South Africans and contribute to building a better world, provides the following strategic priorities:  *Strategic Priority*: Massive programme to build economic and social infrastructure.  The *Programme* to achieve above-mentioned priority is to: Continuing with the programme to build, revamp, and maintain electricity infrastructure, including generation, distribution and reticulation to ensure sufficiency and sustainability of supply and development of alternative energy sources.  It is clear from the above that this Eskom Geluk-Rural Project is in line with the objectives of the IDP (improvement of infrastructure and electricity provision. | √YES | NO | Please explain |

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| (d) Approved Structure Plan of the Municipality  A Structure Plan for the Madibeng Local Municipality is not available / does not exist. | YES | NO | Please explain |

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| (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?)  Specialist studies conducted for this project, namely ecologic-, bird- and heritage impact assessments all concluded that the original route as preferred by Eskom would not be the best and most sustainable option in terms of the receiving environment. These findings were taken into account when the Preferred Route, as proposed for Environmental Authorisation, was selected.  The integrity of existing environmental management priorities will not be compromised. | √YES | NO | Please explain |
| (f) Any other Plans (e.g. Guide Plan)  Unknown | YES | √NO | Please explain |

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| 1. 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)?   Faults on the existing power line, with associated power cuts, are a common occurrence and this has a direct negative impact on the users of the line and the economy of the area.  The refurbishment of the line as proposed is therefore in line with the objectives of the IDP which is to *“*build, revamp, and maintain electricity infrastructure, including generation, distribution and reticulation to ensure sufficiency and sustainability of supply and development of alternative energy sources.” | √YES | NO | Please explain |

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| 1. 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.)   The proposed Eskom Geluk-Rural Project will provide the area with a long term solution to reliable electricity supply. The economic as well as private sectors will benefit from this project. | √YES | NO | Please explain |

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| 1. 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.)   The existing power line is old, unreliable and is in need of refurbishment. This project will enable a more reliable supply of electricity to the electricity users in the macro area. | YES | √NO | Please explain |

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| --- | --- | --- | --- |
| 1. 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.)   The existing power line is old, unreliable and is in need of refurbishment. This project will enable a more reliable supply of electricity to the electricity users in the macro area. | √YES | NO | Please explain |

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| --- | --- | --- | --- |
| 1. Is this project part of a national programme to address an issue of national concern or importance?   This project does ultimately contribute on national level. Eskom is the national electricity utility, which generates and distributes electricity to industrial, mining, commercial, agricultural and residential electricity consumers and re-distributors. | √YES | NO | Please explain |

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| 1. 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.)   All impacts can be mitigated to acceptable levels and this activity will not impact negatively on the current landuse along the route. | √YES | NO | Please explain |

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| --- | --- | --- | --- |
| 1. Is the development the best practicable environmental option for this land/site?   Negative impacts that this development may have on the environment can all be mitigated to acceptable levels and the protection of the bio-physical environment is therefore not jeopardised. | √ YES | NO | Please explain |

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| 1. Will the benefits of the proposed land use/development outweigh the negative impacts of it?   Negative impact associated with this proposed activity can be mitigated to acceptable levels. The positive impact of reliable and adequate electrical supply outweighs possible negative impacts that may occur after mitigation measures have been applied. | √YES | NO | Please explain |

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| --- | --- | --- | --- |
| 1. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?   Existing electrical infrastructure always has the potential for future upgrade and or construction of additional components to the facility and powerlines. | √YES | NO | Please explain |

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| 1. Will any person’s rights be negatively affected by the proposed activity/ies?   No person’s rights would be affected by the proposed activity. A thorough public participation programme was conducted and all issues raised by interested & affected parties are satisfactorily addressed. | YES | √NO | Please explain |

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| 1. Will the proposed activity/ies compromise the “urban edge” as defined by the local municipality?   The activity is irrelevant to the urban edge, because it is a linear activity which is required for service provision. | YES | √NO | Please explain |

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| 1. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?   The following SIP is relevant – “SIP 10: Electricity Transmission and Distribution for all - Expand the transmission and distribution network to address historical imbalances, provide access to electricity for all and support economic development. Align the 10-year transmission plan, the services backlog, the national broadband roll-out and the freight rail line development to leverage off regulatory approvals, supply chain and project development capacity.” | √YES | NO | Please explain |

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| 1. What will the benefits be to society in general and to the local communities?   The proposed upgrade to the Geluk-Rural power line provides the area with a long term solution to enhance the network performance and it is anticipated that performance will improve and the duration and frequency of supply interruptions will therefore be minimal*.*  The macro area around the study site will receive a more reliable supply of electricity, with an associated positive economic impact. | Please explain |

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| 1. Any other need and desirability considerations related to the proposed activity?   An important consideration of the project is to ensure that the proposed expansion of the network does not have a negative impact on the environment. | Please explain |

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| 1. How does the project fit into the National Development Plan for 2030?   The **National Development Plan** aims to eliminate poverty and reduce inequality by 2030. South Africa can realise these goals by drawing on the energies of its people, growing an inclusive economy, building capabilities, enhancing the capacity of the state, and promoting leadership and partnerships throughout society.  The Commission’s **Diagnostic Report, June 2011** set out South Africa’s achievements and shortcomings since 1994. It identified a failure to implement policies and an absence of broad partnerships as the main reasons for slow progress, and set out nine *primary challenges of which the following is relevant to this project*: “Infrastructure is poorly located, inadequate and under-maintained”.  Given the complexity of national development, the plan sets out six *interlinked priorities. Relevant to this project is bringing about faster economic growth*.  The **National Development Plan** makes a firm commitment to achieving a minimum standard of living. *Elements of a decent standard of living include the following relevant to this project* :   * A more efficient and competitive infrastructure. * Infrastructure to facilitate economic activity that is conducive to growth and job creation.   An approach will be developed to *strengthen key services* such as commercial transport, energy, telecommunications and water, while ensuring their long-term affordability and sustainability.  Economic infrastructure: 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. | Please explain |

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| --- |
| 1. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.   Current procedures and/or organisational structures are not necessarily achieving integrated decision-making and/or co-operative governance and, as a result, there is a failure to properly achieve the objectives of IEM as set out in Section 23 of NEMA. EIAs however often focus on the immediate harm a project will cause rather than any benefits it might create in the long term to sustainable development.  The stated objectives of Section 23 are to ensure integrated decision-making and co-operative governance so that NEMA’s principles and the general objectives for integrated environmental management of activities (as prescribed in section 23 of NEMA), can be achieved. The goals are to   1. ensure that the Environmental Impact Assessment (“EIA”) procedures facilitate integrated decision-making and co-operative governance. 2. ensure that EIA reports explain how the proposed development will contribute to ecological sustainability, whether it meets legislative objectives, and if not, explain why not.   For this project the following actions were taken to reach the general objectives of Integrated Environmental Management as set out in Section 23 of NEMA:   * An integral part of the environmental impact study undertaken for this project is the Public Participation Process during which key stakeholders had been identified. Relevant government departments, municipal authorities and others were communicated with throughout the study to ensure that all relevant policies guidelines and legislation are adhered to. More detail is supplied in “Section C – Public Participation” of this document. * Consideration had also been given to relevant legislation that includes the following :   + Constitution of the Republic of South Africa, 1996   + **NEM: Waste Act 59 of 2008 (“Waste Act”)**   + **NEM: Air Quality Act 39 of 2004 (“AQA”)**   + **NEM: Biodiversity Act 10 of 2004 (“Biodiversity Act”)**   + **National Water Act 36 of 1998 (“NWA”)**   + **Mineral and Petroleum Resources Development Act 28 of 2002 (“MPRDA”)**   + **National Heritage Resources Act 25 of 1999 (“NHRA”)**   + **National Forests Act 84 of 1998 (“NFA”)**   + **Provincial Town Planning Ordinances and Municipal Town Planning Schemes** * **It was confirmed in this study that no impact that could not be mitigated to acceptable levels would occur as a result of this project. By providing electricity to large industries whilst not impacting negatively on the environment, the project would contribute to a sustainable environment.** |

|  |
| --- |
| 1. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.   Chapter 2 of NEMA provides a number of principles that decision-makers have to consider when making decisions that may affect the environment, therefore, when a Competent Authority considers granting or refusing environmental authorisation based on an Environmental Impact Assessment, these principles must be taken into account.  The NEMA principles with which this application conforms are described as follows —   1. The proposed activity is socially, environmentally and economically sustainable:  * The disturbance of ecosystems and loss of biological diversity would not take place; * Pollution and degradation of the environment can be avoided; * No sites of the nation's cultural heritage will be affected; * Waste management measures are in place.  1. The participation of all interested and affected parties in environmental governance throughout this Basic Assessment process was promoted. 2. The social, economic and environmental impacts of activities, including disadvantages and benefits, were considered, assessed and evaluated, and informed decision-making by the authority is hereby made possible. |

1. **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 (Act 107 of 1998) | Authorisation is required | Department of Environmental Affairs | 1998 |
| National Water Act (Act 36 of 1998) | Authorisation is not required | Department of Water Affairs | 1998 |
| National Heritage Resources Act (25 of 1999) | Comment is required | \* North West Provincial Heritage Resources Authority (NWPHRA) (please see comment below) | 1999 |
| Environment Conservation Act (Act 73 of 1989) | Authorisation is not required | Department of Environmental Affairs | 1989 |

|  |  |  |  |
| --- | --- | --- | --- |
| National Environmental Management: Biodiversity Act (Act 10 of 2004) | Authorisation is not required | Department of Environmental Affairs | 2004 |
| National Environmental Management: Biodiversity Act (Act 10 of 2004): Threatened & Protected Species Regulations | Authorisation is not required | Department of Environmental Affairs | 2004 |
| National Spatial Biodiversity Assessment (2011) | Authorisation is not required | Department of Environmental Affairs | 2004 |
| National Biodiversity Strategy Action Plan | Authorisation is not required | Department of Environmental Affairs | 2005 |
| Paris Convention for the Protection of the World Cultural and Natural Heritage | Authorisation is not required | Department of Arts and Culture |  |
| White Paper on the Conservation and Sustainable Use of South Africa's Biological Diversity (GN 1095, 28 July 1997) | Authorisation is not required | Responds to the United Nations Convention on Biological Diversity | 1997 |
| Conservation of Agricultural Resources Act (43 of 1983) | Authorisation is not required | Department of Agriculture | 1983 |
| Endangered and Rare Species of Fauna and Flora (AN 1643 February 1984) | Authorisation is not required | Lists endangered species in terms of the Nature Conservation Ordinance, 1983 (Ordinance 12 of 1983) | 1984 |
| RAMSAR Convention on Wetlands of International Importance Especially as Waterfowl Habitat | Authorisation is not required | Department of Water Affairs |  |
| Mineral and Petroleum  Resources Development Act (No 28 of 2002) | Authorisation is not required | Department of Mineral Resources | 2002 |
| Section 63(1)b & c of the Nature Conservation Ordinance of 1974 (Ordinance 19 of 1974) | Authorisation is not required. | Department of Environmental Affairs | 1974 |
| Nature Conservation Regulations 955 of 1975 | Authorisation is not required. | Department of Environmental Affairs | 1975 |
| Section 7(1) and 15(1) of the National Forests Act of 1998 (Act 84 of 1998) | Authorisation is not required. | Department of Agriculture | 1998 |

\* The North West Provincial Heritage Resources Authority (NWPHRA) - the commenting authority for this project – was informed of this project throughout the Basic Assessment process. However, no comment was received. It is important to note that the Heritage Impact Assessment concluded that:

“No sites of cultural heritage significance are present within the area to be developed. Two sites, fairly close thereto were however identified. The final Preferred Route will not impact on any of these two sites, no mitigation is necessary and, from a heritage point view, the development may continue.”

1. **Waste, effluent, emission and noise management**

**a) Solid waste management**

|  |  |  |
| --- | --- | --- |
| Will the activity produce solid construction waste during the construction/initiation phase? | **√YES** | NO |
| If YES, what estimated quantity will be produced per month? | Approximately 1m3 | |

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

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

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| * Solid waste will be transported off site by the contractor and returned to Eskom stores where scrap will be handed over to buyers. * Any solid waste that cannot be recycled will be transported to appropriate registered waste disposal sites. * General household waste generated by the construction team will be removed by the relevant contractor to a registered waste disposal site.     For all waste that is disposed of, Eskom shall obtain waste manifests and disposal certificates, which shall be recorded and reported to the ECO on a monthly basis. | | | | | |
| Will the activity produce solid waste during its operational phase? | YES | | **√NO** |
| If YES, what estimated quantity will be produced per month? | m3 | | |
| How will the solid waste be disposed of (describe)? |  | | |
| Not applicable | | | |
| If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used. | | | |
| Not applicable | | | |
| Where will the solid waste be disposed of if it does not feed into a municipal waste stream (describe)? | | | |
| Not applicable | | | |
| *If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.* | | | |
| Can any part of the solid waste be classified as hazardous in terms of the NEM:WA? | | YES | **√NO** |
| If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application. | | | |
| Is the activity that is being applied for a solid waste handling or treatment facility? | | YES | **√NO** |
| If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application. | | | |

**b) Liquid effluent**

|  |  |  |
| --- | --- | --- |
| Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system? | YES | **√NO** |
| If YES, what estimated quantity will be produced per month? | m3 | |
| Will the activity produce any effluent that will be treated and/or disposed of on site? | YES | **√NO** |
| *If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.* | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Will the activity produce effluent that will be treated and/or disposed of at another facility? | | | | YES | **√NO** |
| If YES, provide the particulars of the facility: | | | | | |
| **Facility name:** |  | | | | |
| **Contact person:** |  | | | | |
| **Postal address:** |  | | | | |
| **Postal code:** |  | | | | |
| **Telephone:** |  | **Cell:** |  | | |
| **E-mail:** |  | **Fax:** |  | | |

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

|  |
| --- |
| Not applicable |

**c) Emissions into the atmosphere**

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

**d) Waste permit**

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

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

**e) Generation of noise**

|  |  |  |
| --- | --- | --- |
| Will the activity generate noise? | YES | **√NO** |
| If YES, is it controlled by any legislation of any sphere of government? | YES | NO |
| If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. | | |
| If NO, describe the noise in terms of type and level: | | |
| No permanent noise pollution will occur as a result of the proposed activity.  Limited noise will however occur as a result of construction activities during the construction phase. Eskom shall provide all necessary equipment with standard silencers and maintain silencer units on vehicles where required. Equipment must always be in good working order to minimise unnecessary noise levels. | | |

1. **WATER USE**

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

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Municipal | Water board | Groundwater | River, stream, dam or lake | **√ Other** | The activity will not use water | | |
| Limited volumes of water will be used for construction purposes and personnel drinking water.  A water cart will transport water to and from the construction site where and when required. | | | | | | | |
| If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month: | | | | | | Not applicable  litres | |
| Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs? | | | | | | YES | **√NO** |
| If YES, please provide proof that the application has been submitted to the Department of Water Affairs. | | | | | | | |

1. **ENERGY EFFICIENCY**

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

|  |
| --- |
| Not applicable – the proposed activity is an Eskom Distribution electricity project. |

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

|  |
| --- |
| Not applicable – the proposed activity is an Eskom Distribution electricity project. |

**Section B: SITE/area/PROPERTY description**

**Important notes:**

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

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

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

|  |  |  |
| --- | --- | --- |
| 1. Has a specialist been consulted to assist with the completion of this section? | **√YES** | NO |
| If YES, please complete the form entitled “Details of specialist and declaration of interest” for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D. | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Property description/physical address:** | |  |  | | --- | --- | | **Province** | North West Province | | **District Municipality** | Bojanala Platinum District Municipality | | **Local Municipality** | Madibeng Local Municipalities | | **Ward Number(s)** | Ward 14 | | **Farm name and number** | Please refer to Appendix J for a list of the farm, portion and erf numbers | | **Portion number** |  | | **SG Code** | Please refer to Appendix J for a list of the SG 21 Digit Codes | | | | |
|  | Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above. | | | |
|  | | | | |
| **Current land-use zoning as per local municipality IDP/records:** | | Agriculture | | |
|  | | In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application. | | |
|  | | | | |
| Is a change of land-use or a consent use application required?  Eskom is an Organ of State and as such is exempt from rezoning and subdivision applications. However, landowner consent is required before Eskom can register a servitude for the distribution of electricity across the relevant properties. At this stage of the EIA process all landowners had been communicated with and concerns raised were satisfactorily addressed. As soon as Environmental Authorisation is obtained, the negotiator on behalf of Eskom will have option documents signed and he/she will appoint independent land valuators to determine the compensation amount relevant to each property. A negotiation process will then take place between Eskom and the landowners after which the servitudes will be registered on the relevant property deeds. | | | YES | **√ NO** |

1. **GRADIENT OF THE SITE**

Indicate the general gradient of the site.

Alternative S1:

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

Alternative S2 (if any):

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

Alternative S3 (if any):

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

1. **location in landscape**

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

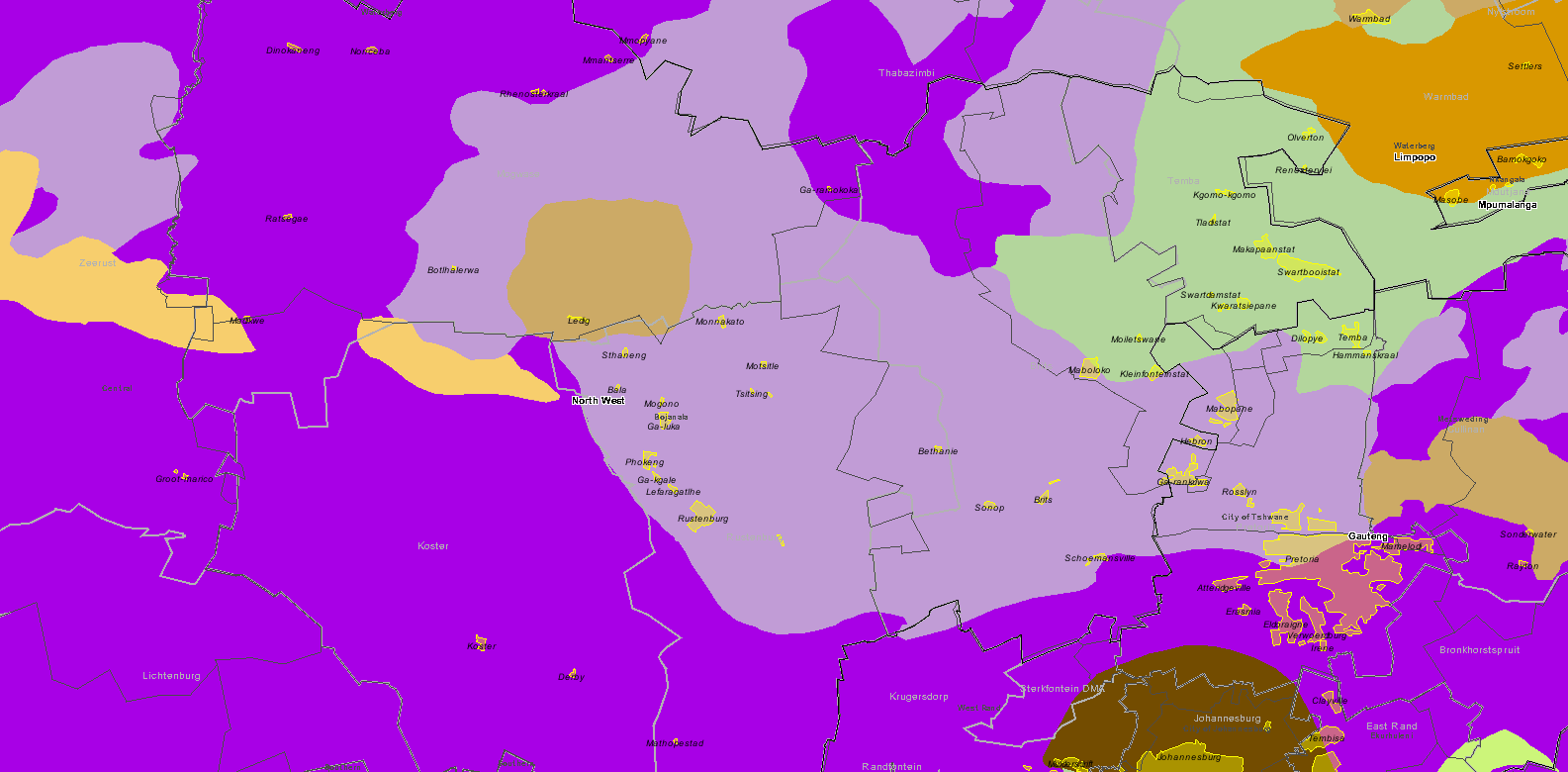
|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 2.1 Ridgeline |  | 2.4 Closed valley |  | 2.7 Undulating plain / low hills |  |
| 2.2 Plateau |  | 2.5 Open valley |  | 2.8 Dune |  |
| 2.3 Side slope of hill/mountain |  | 2.6 Plain | **X** | 2.9 Seafront |  |

1. **GroundwateR, Soil and Geological stability of the site**

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

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

Geologically the area is classified as Lebowa Granite Suite, Nebo Granite within the Bushveld Complex (Geological Survey 1981). Most of the Norite koppies in the area are mined for granite.



Geology of the study area (www.agis.agric.za/agisweb/agis.html)

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.

1. **Groundcover**

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Natural veld - good conditionE | Natural veld with scattered aliensE | Natural veld with heavyalien infestationE | **√ Veld dominated by alien speciesE** | Gardens |
| Sport field | **√Cultivated land** | Paved surface | Building or other structure | Bare soil |

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

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| A Vegetation Ecological Investigation was undertaken by EnviroGuard Ecological Services CC and is attached in Appendix D. The report is summarised below.  VEGETATION UNITS  The purpose of this impact assessment is to determine areas of high sensitivity and to provide guidelines to ensure that the proposed development is ecologically sensitive and to prevent unnecessary destruction of natural ecosystems.  Three distinct vegetation units were identified (refer to the map below):  Unit 1 Rocky outcrop (green line)  Unit 2 Agricultural lands (blue line)  Unit 3 Developed areas (orange line)  Veg units  Unit 1 Rocky Outcrop   |  |  |  |  | | --- | --- | --- | --- | | Mapping unit | 1 | Tree cover | 50% | | Soil | Shallow leached | Shrub cover | 20-30% | | Topography | Slopes between 3-80 | Herb cover | 3% | | Land use | None | Grass cover | 10% | | Unit status | Natural rocky outcrop woodland | Rock cover | 15-20% | | Conservation priority | High | Erosion | 0% | |  | | | | | Dominant spp. | Various including: *Ficusabutifolia, Searsialancea, Acacia luederitzii* | | |   This relatively dense woodland is found on a single rocky outcrop directly east of the current substation. The area consists of large granite boulders with shallow leached soil and mild to steep slopes.  The vegetation is dominated by various trees and shrubs and includes the woody species *Ficusabutifolia, Searsialancea, Acacia luederitzii, Searsialeptodictya, Grewiaflava, acacia caffra, Dombeyarotundifolia,* the grasses*Panicum maximum, Cynodondactylon, Eustachyspaspaloides,* and the forbs*Tagetesminuta, Kalanchoerotundifolia*and *Limeumviscosum.*  The vegetation comprises mostly climax species and is regarded as being in a natural condition.  *Red data species*  No red data species were found within this vegetation unit though suitable habitat exists for three such species, namely *Antimimalodewykii, Ceropegiaturricula*and*Frithiapulchra*.  Unit 2 Agricultural land   |  |  |  |  | | --- | --- | --- | --- | | Mapping unit | 2 | Tree cover | 0% | | Soil | Dark clay and loam soil with high base status | Shrub cover | 0% | | Topography | Level | Herb cover | 1% | | Land use | Crops | Grass cover | N/a | | Unit status | Agricultural land | Rock cover | 0% | | Conservation priority | Low | Erosion | 0% | |  | | | | | Dominant spp. | *N*/a | | |   This unit comprises agricultural fields where various crops are planted. Some fields are left fallow as part of a rotation system and these are dominated by various pioneer weedy species such as *Conyzaalbida, Tagetesminuta* and *Aristidacongesta*. Most areas are actively farmed and irrigated. As a result all natural vegetation was displaced and the area transformed. Other areas are rested and comprise various pioneer weedy grasses and forbs.  A concrete water channel is present between some of the fields. The channel was used for the channelling of water to the different crops, but seems to have been abandoned for this purpose. As a result various weedy species are present as well as moist-loving species such as *Typhacapensis*. Other species present in the channel include *Amaranthushybridus, Chenopodium album* and the declared alien invaders *Meliaazedarach*and *Ipomoea purperea.*  From an ecological point of view the area has no conservation value but from an agricultural and economic point of view these areas are important.  *Red data species*  No red data species were found within this vegetation unit.  Unit 3 Developed Areas   |  |  |  |  | | --- | --- | --- | --- | | **Mapping unit** | 3 | **Tree cover** | 0-30% | | **Soil** | Dark clay to red loamy, but compacted | **Shrub cover** | 0-25% | | **Topography** | Mostly level (1-20) | **Herb cover** | 5-20% | | **Land use** | Houses and other developments | **Grass cover** | 40-60% | | **Unit status** | Transformed | **Rock cover** | 1% | | **Conservation priority** | Low | **Erosion** | N/a | |  | | | | | **Dominant spp.** | N/a | | |   The vegetation comprises a mixture of indigenous, weedy, exotic and garden ornamental species. The vegetation is completely transformed due to more than 80% thereof being developed with roads, houses, concrete dams for irrigation purpose, outside buildings and gardens developed. Very little of the natural vegetation of the area has remained. A concrete water channel used to channel water to the different crops is present next to the gravel road.  *Red data species*  No red data species were found within this vegetation unit.  DISCUSSION OF VEGETATION UNITS  The Rocky outcrop area (Unit 1) is representative of the “Norite Koppies Bushveld (SVcb 7) as described by Mucina & Rutherford. The vegetation is in a relatively pristine condition with mainly climax species present. These areas are constantly under threat of mining activities for granite and only 4% of them are statutorily conserved. The vegetation also presents a habitat for various bird, insect and small mammal species especially due to the cultivation of the surrounding area. This vegetation unit is therefore regarded as having a high ecosystem functioning and high conservation value. A small section of proposed route 1 will pass through this unit.  Vegetation Unit 2 (Agricultural lands) is actively and intensively farmed with various crops as well as irrigation schemes. The natural vegetation of these areas was destroyed and the areas transformed from an ecological perspective. These areas are therefore from a plant ecological and ecosystem functioning point of view regarded as having a low conservation value. Sections of all three alternatives will pass through this unit.  Vegetation Unit 3 (Developed area) comprises houses, concrete-lined dams and outbuildings where the natural vegetation has been totally degraded and transformed. The natural ecosystem does not provide any ecosystem services and the area is regarded as having a low conservation value. It is highly unlikely that this area could ever be restored to an improved ecological condition. The largest section of proposed Alternative 3 will pass through this unit.  Ecological Sensitivity Map  Cons values routes  Conservation status of the different vegetation units   * Red = High Conservation Status * Yellow = Low Conservation Status   *Threatened species*  Red data species were not found in any of the vegetation units although vegetation Unit 1 is marginally suitable for some species.  MEDICINAL SPECIES  A total of five medicinal plants were identified in the study area and are listed in the table below:   |  |  |  |  | | --- | --- | --- | --- | | **Plant name** | **Plant part used** | **Medicinal use** | **Vegetation unit/s** | | *Acacia karroo* | Leaves, bark and gum | Diarrhoea& dysentery  Gum: colds, oral thrush &haemorrhage. | 1, 3 | | *Aloe greatheadii* | Leaf sap | Treat skin irritations, bruises and burns. | 1 | | *Eucleaundulata* | Roots | Remedy for tootache and headache; heart diseases; anti-inflammatory | 1 | | *Vernoniaoligocephala* | Leaves and twigs, rarely roots. | Stomach bitters, rheumatism Treat abdominal pain, colic, dysentery and diabetes. Roots treat ulcerative colitis. | 3 | | *Ziziphusmucronata* | Roots, bark or leaves | Cough & chest problems; diarrhea; pain relief | 1 |   Only five medicinal plants were observed during this study. Most of these species occur within Unit 1, though all of these species are common species with none currently threatened.  SENSITIVITY ANALYSIS  A sensitivity analysis was done for the three identified vegetation units. This was achieved by evaluating the different vegetation units against a certain set of habitat criteria. The results indicate that Unit 1 is the most sensitive (medium) with all the others having a low sensitivity.  IMPACT ASSESSMENT  The construction of pylons will inevitably have an impact on the surrounding ecosystem. The severity of the impact, however, varies, depending on the nature of the activity and mitigation measures followed.  The main impacts identified are:  Impact 1: Loss of Flora & Habitat  Impact 2: Loss of Rare Species  Impact 3: Loss of Medicinal Plants  A comprehensive Impact Assessment, inclusive of recommended mitigation measures, is attached in Appendix F of this report. These mitigation measures are also included in the Environmental Management Plan.  CONCLUSIONS OF THE VEGETATION ECOLOGICAL INVESTIGATION  It is preferable that the power line does not transverse through Vegetation Unit 1 (Rocky Outcrop). The conservation status of this unit is regarded as high and it has a medium sensitivity to disturbance. All other vegetation units were found to be of a low conservation value with low sensitivity, and it is therefore preferable that the route transverse these sections.  Due to the transformed nature of the units within these two proposed routes little mitigation measures are needed while the construction of the power lines should have no significant negative effect on the environment. |

1. **SURFACE WATER**

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

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



A concrete water channel is present between some of the fields. The channel was used for the channelling of water to the different crops, but seems to have been abandoned for this purpose. As a result various weedy species are present as well as moist-loving species such as *Typhacapensis*. Other species present in the channel include *Amaranthushybridus, Chenopodium album* and the declared alien invaders *Meliaazedarach*and *Ipomoea purperea*.

1. **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 residentialA | Church | √ Agriculture (grazing) |
| Retail commercial & warehousing | Old age home | River, stream or wetland |
| Light industrial | Sewage treatment plantA | 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 damA | Sport facilities | √Archaeological site |
| Quarry, sand or borrow pit | Golf course | Other land uses (describe) |
| The area is characterised by agricultural activities and associated infrastructure. The ‘natural area’ is the koppie to the direct north of the Preferred Route, as described above under Vegetation Unit 1: Rocky outcrop area. The power line will not transverse this area. | | |

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

|  |
| --- |
| Not applicable |

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

|  |
| --- |
| Not applicable |

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

|  |
| --- |
| Not applicable |

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

Refer to Appendix A for the Critical Biodiversity Areas Map and a National Protected Areas Map, as obtained from the SANBI GIS website on 17 February 2014.

|  |  |  |
| --- | --- | --- |
| 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.

1. **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** was compiled by Archaetnos Culture & Cultural Resource Consultants and is attached in Appendix D. The findings of this study are summarised below.    DISCUSSION  Preferred Route (as per the Final Route Map)  No cultural heritage sites, features or objects were identified on this route.  Route Alternative 2 (as per the Final Route Map)  DSC07576Some Late Iron Age stone walling was identified along the south-eastern slope of the hill adjacent to the existing substation. The walling seems to be reasonably high, but it does not seem to be a large site.  The site is regarded as having a medium cultural heritage significance and is rewarded a field rating of local grade IIIB. It needs to be included in the heritage register and may be mitigated. However, it would be better to steer clear of the site.  Route Alternative 3(as per the Final Route Map)  An Edwardian cottagewas identified across the road from where the power line will be placed if Alternative 3 is chosen. It is built from stone and corrugated iron and is quite typical for this era (circa 1890-1920).  The site is regarded as having a high cultural heritage significance and is rewarded a field rating of local grade IIIA. It needs to be included in the heritage register and may not be mitigated. However, it would be better to steer clear of the site.  DSC07581  CONCLUSION AND RECOMMENDATIONS  No sites of cultural heritage significance are present within the area to be developed. Two sites, fairly close thereto were however identified. The final Preferred Route will not impact on any of these two sites, no mitigation is necessary and, from a heritage point view, the development may continue.  It should be noted however that the subterranean presence of archaeological and/or historical sites,  features or artifacts is always a distinct possibility. Care should therefore be taken when the development commences that if any of these are discovered, a qualified archaeologist be called in to investigate. |

|  |  |  |
| --- | --- | --- |
| Will any building or structure older than 60 years be affected in any way? | YES | √NO |
| Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)? | YES | √NO |
| If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority. | | |

1. **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.

An article in the electronic Mail & Guardian, dated 11 Feb 2014 states that the Madibeng Local Municipality was placed under provincial administration by the provincial executive council. The North West Province Premier Thandi Modise said the municipality was dysfunctional and had failed to fulfil its legislative obligations. The process could last between six months and a year.

Assumedly due to the above, information regarding the Madibeng Local Municipality is extremely difficult to find – the municipality’s website is also not functional. The information given below is obtained from [www.localgovernment.co.za](http://www.localgovernment.co.za).

Level of unemployment:

|  |
| --- |
| The level of unemployment of the Madibeng Local Municipality is 30.40% and the Youth Unemployment Rate (ages 15-34) is 38.20%. |

Economic profile of local municipality:

|  |
| --- |
| Madibeng Local Municipality is located in the North West province between the Magaliesberg and Witwatersrand, and situated 60km from Rustenberg and 50km north of Pretoria. It is strategically located in relation to Gauteng, Limpopo, Harare and the Maputo Harbour, and is positioned along the Heritage Route, linking the World Heritage Site with the Pilanesberg and Madikwe Game Reserves. It is known for its diversified economy. Currently, mining is the predominant economic activity, and the Hartebeespoort Dam is the second most visited place after the Waterfront in Cape Town.  The main economic sectors are mining, manufacturing, agriculture and tourism. |

Level of education:

|  |
| --- |
| The level of education (aged 20 +) is as follows:   * No Schooling: 7.80% * Higher Education: 7.70% Matric: 27.30% |

**b) Socio-economic value of the activity**

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

1. **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](mailto: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 A 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)**

The study site does not fall within any of the categories as mentioned below. Please refer to Appendix A where the following maps are supplied (as obtained from the SANBI website on 17 February 2014):

* Critical Biodiversity Areas
* National Protected Areas

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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) |  |

**b) Indicate and describe the habitat condition on site**

|  |  |  |
| --- | --- | --- |
| Habitat Condition | Percentage of habitat condition class (adding up to 100%) | Description and additional Comments and Observations  (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc). |
| Detail with regards to the vegetation condition within the study area is supplied in the  Vegetation Ecological Investigation (attached in Appendix D)  and summarised in Section B, paragraph 4 ‘Groundcover’ of this report | | |
| Natural | % |  |
| Near Natural  (includes areas with low to moderate level of alien invasive plants) | 0% |  |
| Degraded  (includes areas heavily invaded by alien plants) | 0% |  |
| Transformed  (includes cultivation, dams, urban, plantation, roads, etc) | 100% | Vegetation Unit 2 (Agricultural lands) is actively and intensively farmed with various crops as well as irrigation schemes. The natural vegetation of these areas was destroyed and the areas transformed from an ecological perspective. These areas are therefore from a plant ecological and ecosystem functioning point of view regarded as having a *low conservation value.* |

**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 unchanneled wetlands, flats, seeps pans, and artificial wetlands) | | | Estuary | | Coastline | |
| Endangered |
| √ Vulnerable |
| Least Threatened |
| YES | √NO | UNSURE | YES | √NO | YES | √NO |

Refer to Appendix A for the Threatened Ecosystem Status Map and the National Vegetation Type Map, as obtained from the SANBI GIS website on 17 February 2014.

According to the Threatened Ecosystem Status Map (original extent), the study area and its surrounds are listed as Vulnerable. However, apart from the koppie adjacent to the existing substation, the whole of the study area as well as the macro area is totally transformed due to agricultural activities and associated infrastructure.

According to the National Vegetation Type Map, the vegetation type is MarikanaThornveld (code: SVcb6). This vegetation type is listed by Mucina & Rutherford 2006 as Least Threatened. The target of 24% is exceeded, with 96% statutorily conserved in the Pilansberg Game Reserve.

**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)**

|  |
| --- |
| A **Vegetation Ecological Investigation** was undertaken by EnviroGuard Ecological Services CC and is summarised under Section B, paragraph 4 ‘Groundcover’ of this report and attached in Appendix D. |

|  |
| --- |
| A **Bird Impact Assessment** (Included in Appendix D) was undertaken by Chris van Rooyen Consulting and is summarised below.  IMPORTANT BIRD AREAS  The study area is situated within 8km from the northern border of an Important Bird Area (IBA), namely SA025 (Magaliesberg and Witwatersberg). At least 5 active vulture restaurants are situated within a 50km radius around the proposed powerline, with the closest (Nyoka vulture restaurant) approximately 25km away. The Scheerpoort Cape Vulture colony is situated approximately 25km south of the proposed powerline on the southern cliffs of the Magaliesberg. The avifaunally significant Roodekopjes Dam, at its closest point, is located approximately 10km north of the proposed power line. With the possible exception of vultures, the proposed power line is not expected to directly influence the avifauna at any of these localities, because the development footprint does not extend into these areas.    Magaliesberg and Witwatersberg Important Bird Area (green), vulture restaurants and  Roodekopjes Dam in relation to the location of the study area.  **VEGETATION TYPES**  The natural vegetation types in the study area are open Acacia dominated Marikana Thornveld on the low-lying flat areas and dense Norite Koppies Bushveld on the inselbergs. It is generally accepted that vegetation structure, rather than the actual plant species, influences bird species distribution and abundance. Therefore, the vegetation description does not focus on lists of plant species, but rather on factors which are relevant to bird distribution.  **1. Woodland**  The savanna biome contains a large variety of bird species (it is the most species-rich community in southern Africa) but very few bird species are restricted to this biome. As far as power line sensitive species are concerned, the savanna biome is particularly rich in large raptors, and forms the stronghold of Red Data species such as White-backed Vulture *Gyps africanus*, Cape Vulture, Martial Eagle, Tawny Eagle, and Lappet-faced Vulture *Torgostracheliotis*. Apart from Red Data species, it also serves as the stronghold of several non-Red Data raptor species, such as the Brown Snake Eagle *Circaetuscinereus*, Black-chested Snake Eagle *Circaetuspectoralis*, and a multitude of medium-sized raptors for example the migratory Steppe Buzzard *Buteovulpinus*, African Harrier Hawk (*Gymnogene*) *Polyboroidestypus*, Wahlberg’s Eagle *Aquila wahlbergi* and African Hawk Eagle *Aquila spilogaster*. Apart from raptors, woodland in its undisturbed state is also suitable for a wide range of other power line sensitive birds, notably the Kori Bustard (*Ardeotiskori*) and Secretarybird both of which occur in open woodland.  It is likely that the power line sensitive raptor species mentioned above still occur in the study area from time to time, although only sporadically due to extensive habitat transformation, especially the fragmentation of the woodland by agriculture. The habitat in the study area originally consisted entirely of woodland, but this has since changed with the establishment of agricultural activity (mostly irrigated vegetable crops) which now comprises the majority of the habitat in the study area.  **2. Agricultural fields**  The agricultural activity in the study area is mostly pivot irrigation of various vegetable crops, but also maize and wheat. In general agricultural monocultures are less important for the Red Data power line sensitive species that might still occur in the study area, as it lacks the structural variety of the original woodland. The tiling of soil is one of the most drastic and irrevocable alterations wrought on natural systems. It completely destroys the structure and species composition of the original vegetation. Furthermore, the ecology of cultivated fields are essentially unstable because it is intensively managed, often resulting in high variation over the short and medium term. Nonetheless, some species might benefit to some extent from the clearing of the original woodland, e.g. Black-winged Pratincole and Yellow-throated Sandgrouse.  **3. Water sources**  The permanent supply of irrigation water from the Crocodile River has resulted in several farm dams in the study area, especially along Route Alternative 3. These farm dams are attractive to a variety of birds, and could on occasion attract Red Data species such as Black Stork, Yellow-billed Stork, Greater Flamingo and Lesser Flamingo. However, the dams in the study area are generally small and mostly lack exposed shoreline. These species are therefore unlikely to be regular visitors.  **IMPACT ASSESSMENT**  A comprehensive Impact Assessment, inclusive of recommended mitigation measures, is attached in Appendix F of this report. These mitigation measures are also included in the Environmental Management Plan.  The main impacts and mitigation measures identified are:  **Impact 1: Displacement through habitat transformation and disturbance**  It is not envisaged that any Red Data species will be displaced through habitat destruction and disturbance, as the proposed power line alternatives are routed through habitat that is already completely transformed by agriculture, and therefore generally unattractive to Red Data species.  **Impact 2: Collisions with the proposed power line**  A power line that crosses or skirts farm dams could pose a collision risk for avifauna species and the spans that cross farm dams should be marked with Bird Flight Diverters on the earth wire of the line, five metres apart, alternating black and white (see the Avifauna Sensitivity Map as well as the Preferred Bird Flight Diverters to be used as attached in Appendix A of this report). Please note that this is only applicable to Route Alternative 3.  **Impact 3: Electrocutions**  The poles should be fitted with bird perches on top of the poles to draw birds, particularly vultures, away from the potentially risky insulators.  **SELECTING A PREFERRED ALTERNATIVE**  One of the objectives of this study is to arrive at the preferred corridor for the proposed power line in terms of impacts on power line sensitive Red Data avifauna. In this instance, Route Alternatives 1 and 2 both run through completely transformed habitat which is unlikely to attract Red Data species regularly. Route Alternative 3 is somewhat different – whereas it also runs through transformed habitat, it crosses over several farm dams. These farm dams could attract waterbirds, including several Red Data species, which may collide with the power line. From a bird impact assessment perspective, Alternative 3 is therefore the least preferred option. Route Alternatives 1 and 2 run very close together and are therefore very similar in terms of potential impacts, and are both suitable options from a bird impact perspective.  **CONCLUSION OF THE BIRD IMPACT ASSESSMENT**   * *Power line*: The spans that cross farm dams should be marked with Bird Flight Diverters on the earth wire of the line, five metres apart, alternating black and white (see the Avifauna Sensitivity Map as well as the Preferred Bird Flight Diverters to be used as attached in Appendix A of this report). **Please note that this is only applicable to Route Alternative 3**. * *Poles*: The poles should be fitted with bird perches on top of the poles to draw birds, particularly vultures, away from the potentially risky insulators. |

**Section C: public participation**

1. **ADVERTISEMENT and Notice**

|  |  |  |
| --- | --- | --- |
| **Publication name** | Brits Pos | |
| **Date published** | 8 November 2013 | |
| **Site notice position** | **Latitude** | **Longitude** |
| Next to the public gravel road which leads to the Geluk Substation | 25034’ 48.47” S | 27038’ 57.53” E |
| Where the Rhombus line crosses the public gravel road (at the southern end of Route Alternative 3) | 25035’ 29.00” S | 27038’ 37.99” E |
| At the Geluk General Dealer | 25034’ 38.26” S | 27039’ 02.82” E |
| **Date placed** | 5 November 2013 (proof thereof attached in Appendix E) | |

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

1. **Determination of appropriate measures**

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

|  |
| --- |
| Actions undertaken during the initial Public Participation Process   * A list of all the *Directly Affected Landowners* was compiled. * A *General I&AP List* was compiled and includes municipalities, government departments and other applicable organisations. * Background Information Documents were emailed / faxed /posted to everyone on these lists. * 3x onsite notices were placed along the power line route on 5 November 2013. * A newspaper advertisement was placed in the local newspaper, the Brits Pos, on 8 November 2013.   Distribution of Draft Basic Assessment Report for comment  The Draft BAR, this document, is distributed as follows (a 40-day comment period applies):   * Hard copies are being delivered to the   + National Department of Environmental Affairs   + Department of Economic Development, Environment, Conservation and Tourism, North West Provincial Government; Development Impact Management   + Municipal Manager, Madibeng Local Municipality * All registered Interested and Affected Parties will receive an electronic copy of the Draft BAR where possible. They will also be notified that a hard copy of the document is available for perusal at the Geluk General Dealer.   Distribution of Final Basic Assessment Report for comment  All comment received will be addressed accordingly and will be documented in the Final BAR to be submitted to the Department of Environment Affairs for approval. |

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

List of Directly Affected Landowners on the Preferred Route (refer to Appendix E.5 for their contact details)

|  |
| --- |
| **PROPERTY& CONTACT PERSON** |
| Hartebeestpoort B 410-JO, portion 723 & 724: For attention: Mr H M J Barnard |
| Hartbeespoort B 410-JQ, portion 745, For attention: Mr H M J Barnard |
| Hartebeestpoort B 410-JQ, portion 725, For attention: Mr P C de Jager |
| Hartebeestpoort B 410-JQ, portion 726, For attention: Mr A J Barnard |
| Hartebeestpoort B 410-JQ, portion727, Debbie-Lee & Henry Jacobus Lidderd |
| Hartebeestpoort B 410-JQ, portion 744, For attention: Mr J W Coetzee |
| Hartebeestpoort B 410-JQ, portion 1369, For attention: Mrs L Young |

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

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

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

1. **Issues raised by interested and affected parties**

**3.1 Comment received during the Initial Advertising Period from 5 November 2013 up to compilation of the Draft BAR**

*Please note*

Although this project was advertised as per the EIA Regulations, only one comment was received. No comment was received from any government organisation or municipality. This could be because the project is for a 1.4km power line only and no environmental issues were identified.

Also note that, as stated in Paragraph 8 above, the Madibeng Local Municipality was placed under provincial administration because, as stated by the North West Province Premier Thandi Modise the municipality was dysfunctional and had failed to fulfil its legislative obligations.

|  |  |
| --- | --- |
| **Summary of main issues raised by I&APs** | **Summary of response from EAP** |
| *Landowner: Farm 410, portion 44, Mr Coetzee*  Mr Coetzee stated that he plans to use pivot irrigation in the future and that the powerline may not negatively impact on these irrigation plans. In principle he has no objection to the proposed powerline. | *Response – Landscape Dynamics*  The Preferred Route does not transect the property of Mr Coetzee and irrigation will therefore not be impacted on. |

**3.3 Comment received on the Draft BAR**

The Draft BAR was distributed for comment to all IAP’s on the Register of IAPs. No comment that could change the content of the Draft BAR was received and the Final BAR (this document) is therefore now submitted to DEA for the issuing of the Environmental Authorisation.

|  |  |
| --- | --- |
| **Summary of main issues raised by I&APs** | **Summary of response from EAP** |
| *Madibeng Local Municipality: Department of Community Services, Waste and Environmental Management, M.T. Magasa*  The Municipality evaluated the report in terms of NEMA and other applicable legislation and does not have any objections regarding the Eskom development as long as   * All steps in the EMP and specialist reports are being followed and * All identified impacts and proposed mitigation measures are being implemented in order to prevent, amongst other, contamination of water and soils. | *Response – Landscape Dynamics*  Eskom confirmed that the EMP and proposed mitigation measures will be followed and implemented. |
| *SANRAL – Statutory Control Section, Mr Jan Olivier*  No national roads will be affected by the proposed Eskom project and SANRAL has no objection to the project. | *Response – Landscape Dynamics*  Comment noted |
| *Landowner: Farm 410, portion 44, Mr Coetzee*  Mr Coetzee stated that no Eskom structures are allowed on his property due to the negative impact it will have on the farming activities on his land. | *Response – Landscape Dynamics*  The Preferred Route does not transect the property of Mr Coetzee and farming activities will not be impacted on |

1. **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.

1. **AUTHORITY PARTICIPATION**

Authorities and organs of state identified as key stakeholders:

Refer to the list of Interested and Affected Parties in Appendix E.5 for the contact details of the organisations mentioned below

| **Company: Job Title: Contact Person** |
| --- |
| Department of Water Affairs, Northwest Region: The Assistant-director: Water Resources Management Crocodile (West) Marico: For attention Ms Letabo Ramashala |
| North West Department of Public Safety & Liaison: The Acting Head of Department: For attention Mr. B Mahlakoleng, cc B. Mogoerane |
| North West Department of Public Works, Roads and Transport: The Chief Director Infrastructure: For attention Mr M Gwavu |
| North West Department of Public Works, Roads and Transport: The Chief Director Roads Management: For attention Mr F N Thobakgale (Acting) |
| North West Government Department of Public Works, Roads and Transport: The Provincial Head Office (Office 235): For attention Mr Johan HP van Wyk |
| Directorate Environmental Quality Management: Department of Economic Development, Environment, Conservation and Tourism, North West Provincial Government: For attention Ms Ouma Skosana |
| Eskom Distribution (Menlyn Office): Land Development: For attention Ms Annelien Pretorius |
| North West Department of Agriculture: The Head of the Department: For attention Mr M Molefile |
| North West Department of Minerals and Resources: The Regional Manager: For attention Mr Pieter Swart |
| South African Heritage Resources Agency: Heritage Officer, North West Province: For attention Mr Phillip Hine |
| North West Provincial Heritage Resources Authority (NWPHRA) |
| SA National Roads Agency: Northern Region, The Regional Manager: For attention Mr Jan Oliver |
| Transnet Freight Rail: Corporate Environmental Specialist, Risk Management: For attention Mr Ndivhuwo Netshilaphala |
| Transnet Freight Rail: Environmental Officer (Working in the region): For attention Mr Francis Rahlapane |
| Madibeng Local Municipality: Town Planning Section, The Director - Human Settlement and Planning: For attention Mr Bathabile Moabi |
| Madibeng Local Municipality: Environmental Section: For attention The Manager |
| Madibeng Local Municipality: The Director - Community Services: For attention Ms Neo Matsena |
| Madibeng Local Municipality: The Director - Infrastructure, Technical and Service: For attention Mr Michael Lelaka |
| Madibeng Local Municipality: The Municipal Manager: For attention Mr M Monde Juta |
| Madibeng Local Municipality: The Councillor, Ward 14: For attention Clr Mr M L Makgale |
| Bojanala District Municipality: The Municipal Manager: For attention Mr Innocent Sirovha: For attention The Manager of the Office of the Municipal Manager – Ms Tsholofelo |
| The Council for Geoscience: The Chief Director: For attention Ms Judith Grobler |
| Magalies Water: The CEO: For attention Mr M Dlamini |
| North-west Department of Rural Development and Land Reform: The Chief Director, Land Restitution Support: For attention Mr Lengane Bogatsu |
| Department Rural Development and Land Reform: Regional Land Claims Commissioner: For attention Mr Harry Maphutha |
| The Department of Agriculture, Forestry and Fisheries: The Assistant-Director - Land use and Soil Management: For attention Mr Piet Theron |
| MSS JKBSLBE Master Security Service 24/7, Owner, For attention: Maria Engelbrecht |
| Birdlife SA, The CEO, For attention: Mr Mark Anderson, The Policy and Advocacy Manager |

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

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

1. **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.

The following is included in Appendix **E6**:

* Comment received during the Initial Advertising Period from 5 November 2013 up to the compilation of the Draft BAR
* Written comment received on the Draft BAR

**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.

**Please note that a comprehensive Impact Assessment (with detailed mitigation measures) is supplied in Appendix F where the impacts are assessed in terms of the following criteria:**

* Nature of the impact (what is being affected and how, is it positive or negative, is it direct or indirect);
* Extent (site specific / local / regional / national / global);
* Duration (very short / short / medium / permanent);
* Magnitude or intensity of the impact (would the impact be destructive or benign and rated as low / moderate / severe);
* Probability of impact occurring (very low / low / moderate / high / very high / definite)

The **Significance Rating** below refers to the *need for* mitigation, and how *easy/difficult* it would be to mitigate the expected impact. For example, an impact with a Very High significance rating will be almost impossible to mitigate and could therefore influence the feasibility of the whole project.

|  |  |
| --- | --- |
| **Impact significance** | **Explanation of significance** |
| **No impact** | **There would be no impact at all** – not even a very low impact on the system or any of its parts |
| **Very low** | **Impact would be negligible**   * In the case of negative impacts, almost no mitigation and/or remedial activity would be needed, and any minor steps, which might be needed, would be easy, cheap and simple * In the case of positive impacts, alternative means would almost all likely to be better, in one or a number of ways, than this means of achieving the benefit |
| **Low** | **Impact would be of a low order and with little real effect**   * In the case of negative impacts, mitigation and/or remedial activity would be either easily achieved or little would be required, or both * In case of positive impacts, alternative means for achieving this benefit would likely be easier, cheaper, more effective, less time-consuming, or some combination of these |
| **Moderate** | **Impact would be real but not substantial within the bounds of those which could occur.**   * In the case of negative impacts, mitigation and/or remedial activity would be both feasible and fairly easily possible * In the case of positive impacts, other means of achieving these benefits would be about equal in time, cost and effort |

|  |  |
| --- | --- |
| **High** | **Impacts of a substantial order**   * In the case of negative impacts, mitigation and/or remedial activity would be feasible but difficult, expensive, time-consuming or some combination of these. * In the case of positive impacts, other means of achieving this benefit would be feasible, but these would be more difficult, expensive, time-consuming or some combination of these |
| **Very high** | **Of the highest order possible within the bounds of impacts which could occur**   * In the case of negative impacts, there would be no possible mitigation and/or remedial activity to offset the impact at the spatial or time scale for which it was predicted. * In the case of positive impacts, there is no real alternative to achieving the benefit. |

| **Preferred Route Alternative** | | |
| --- | --- | --- |
| **Activity & Impact summary** | **Significance Rating** | **Proposed mitigation** |
| *Soils*  Concrete foundations will be made for each pylon and access roads could be constructed / upgraded. Vegetation will therefore be cleared and there may be an increase in surface water runoff which could lead to soil erosion. | Low | Mitigation measures are supplied in Appendix F: ‘Impact Assessment’ as well as in the EMP. |
| *Vegetation*  The proposed power line will be constructed adjacent to an existing power line on cultivated fields (an area which was identified as having a Low conservation importance). Impact on natural vegetation would therefore be minimal and will only take place if construction activities extent into the adjacent Rocky Outcrop Area, which was identified as having a High conservation importance. | Low | Mitigation measures are supplied in Appendix F: ‘Impact Assessment’ as well as in the EMP. |
| *Surface Freshwater Aquatic Ecosystems*  No freshwater systems are present within the route of the proposed power line. | None / Low | No mitigation measures are deemed necessary. |
| *Groundwater*  Extra care would be required to minimise the risk for potential groundwater pollution as a result of oil spills, etc. during the construction period. | Moderate | Mitigation measures are supplied in Appendix F: ‘Impact Assessment’ as well as in the EMP. |
| *Avifauna (birds)*  Birds, particularly vultures, could be drawn to perch on top of the electrical structures and electrocution is therefore a risk. | Moderate | Mitigation measures are supplied in Appendix F: ‘Impact Assessment’ as well as in the EMP. |
| *Fauna*  Disturbance to and/or destruction of habitat and illegal placement of snares could impact on the *Fauna* within the macro study area. | Low | Mitigation measures are supplied in Appendix F: ‘Impact Assessment’ as well as in the EMP. |
| *Cultural / Heritage*  In heritage terms, the proposed activity is considered acceptable and does not constitute a significant risk to any form of heritage provided that the Preferred Alternative is used.  There is however always the potential for discovery and/or destruction of heritage resources such as graves. | Very low | Mitigation measures are supplied in Appendix F: ‘Impact Assessment’ as well as in the EMP. |
| *Air quality*  Dust created by construction vehicles could impact on *air quality* during the construction period. | Low | Mitigation measures are supplied in Appendix F: ‘Impact Assessment’ as well as in the EMP. |
| *Noise*  Labourers and machinery could result in *noise pollution* during the construction period. | Low | Mitigation measures are supplied in Appendix F: ‘Impact Assessment’ as well as in the EMP. |
| *Community*  An influx of workers could result in an increased risk for crime and safety. | Moderate | Mitigation measures are supplied in Appendix F: ‘Impact Assessment’ as well as in the EMP. |
| *Visual Impact*  The visual impact of power lines can be substantial in a rural environment and the ability of the surrounding environment to absorb the visual impact of the power line should be considered:   * The new line will follow the existing 88kV line for the entire route (only 1.4km). * The presence of pre-existing power lines in an area serves as a mitigatory factor (rather than a cumulative negative impact) in terms of establishing new power lines in the same area. In other words electrical infrastructure clutter is best confined to existing areas or corridors of vertical visual disturbance, rather than introducing new vertical visual disturbance to undisturbed landscape. * The area is generally scenic but bland consisting of a mosaic of transformed farm land over much of the flat landscape. | Low | No mitigation measures are proposed |
| *Landuse*  Disturbance to agricultural and other activities could take place with an associated negative impact on the *landuse* within the study area. | Low | Mitigation measures are supplied in Appendix F: ‘Impact Assessment’ as well as in the EMP. |
| *Socio-economic Impact*  The existing Rural–Geluk / Rhombus line is currently a Hare conductor and faults on the line, with associated power cuts and negative economic impact, are a common occurrence.  The provision of a reliable and firm power supply will improve the network performance and the duration and frequency of supply interruptions will be minimal. | Very high | This is a positive impact and no mitigation measures are required. |

| **Route Alternative 2** | | |
| --- | --- | --- |
| **Activity & Impact summary** | **Significance before mitigation** | **Proposed mitigation** |
| Impacts as described above also apply to Alternative 2, with additional impacts as described below | | |
| *Fauna & Flora*  The first section of Route Alternative 2 will pass through a sensitive ecosystem (Rocky outcrop area) and has a high conservation status with a medium sensitivity to disturbance. It is therefore not the preferred route. | Moderate | In order to avoid this impact, the Preferred Route Alternative is recommended. |
| *Avifauna (birds)*  Alternative 2 run through completely transformed habitat which is unlikely to attract Red Data species regularly.  From an avifauna point of view this route alternative will be acceptable. | Low | Mitigation as described in the Preferred Alternative also applies to Alternative 2. |
| *Heritage*  Some Late Iron Age stone walling was identified along the south-eastern slope of the hill adjacent to the existing substation. The walling seems to be reasonably high, but it does not seem to be a large site.  The site is regarded as having a medium cultural heritage significance and is rewarded a field rating of local grade IIIB. It needs to be included in the heritage register and may be mitigated. However, it would be better to steer clear of the site. | Moderate | In order to avoid this impact, the Preferred Route Alternative is recommended. |

| **Route Alternative 3** | | |
| --- | --- | --- |
| **Activity & Impact summary** | **Significance before mitigation** | **Proposed mitigation** |
| Impacts as described above also apply to Alternative 2, with additional impacts as described below | | |
| *Fauna & Flora*  This route alternative runs through an ecological area with a low conservation value with low sensitivity.  From a plant ecological point of view this route alternative will be acceptable. | Moderate | Mitigation as described in the Preferred Alternative also applies to Alternative 2. |
| *Avifauna (birds)*  Although Alternative 3 runs through transformed habitat, it crosses over several farm dams. These farm dams could attract waterbirds, including several Red Data species, which may collide with the power line.  From a bird impact assessment perspective, Alternative 3 is therefore the least preferred option. | Low | In order to avoid this impact, the Preferred Route Alternative is recommended. |
| *Heritage*  An Edwardian cottage was identified across the road from where the power line will be placed if Alternative 3 is chosen. It is built from stone and corrugated iron and is quite typical for this era (circa 1890-1920).  The site is regarded as having a high cultural heritage significance and is rewarded a field rating of local grade IIIA. It needs to be included in the heritage register and may not be mitigated. However, it would be better to steer clear of the site. | Moderate | In order to avoid this impact, the Preferred Route Alternative is recommended. |

***Conclusion of Impact Significant Rating***

All impacts that the proposed power line may have on the environment can be easily and reasonably mitigated to acceptable levels. There are no impacts that could influence the feasibility and viability of this project.

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

1. **Environmental impact statement**

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

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

|  |
| --- |
| **Alternative 1 (Preferred Route Alternative)** |
| The EAP recommends authorisation for the Preferred Route based on the following:   * *Vegetation Ecological Investigation*   This study concluded that the Preferred Route as proposed in this report will transects a transformed area and little mitigation measures are needed. The construction of the power line should have no significant negative effect on the environment.   * *Heritage Impact Assessment*   From a heritage perspective, the Preferred Route is preferred due to the close locality of cultural heritage sites to the other two route alternatives.   * *Avifauna Impact Assessment*   The proposed Preferred Route runs through completely transformed habitat, which is unlikely to attract Red Data bird species regularly. Electrocutions of raptors are however a possibility. The Preferred Route, with recommended mitigation measures, is suitable from a bird impact assessment perspective.   * *Public Participation*   The procedures followed in the Public Participation Process (PPP) is based on the NEMA EIA Regulations which came into effect in August 2010 as well as the *Guideline for Public Participation in the EIA Process, 2010* as issued by the Department of Environmental Affairs.  The project was advertised in the press, on site and letters were sent to landowners, government department and other applicable stakeholders.  No objection and/or concerns that cannot be satisfactorily addressed were raised during the public participation process. The proposed activity can therefore not be considered an unwanted precedent in the area and the rights and interest of interested and affected parties are not negatively impacted upon.   * *Conclusion*   This environmental study concluded that the project and all its activities would not have a negative impact on the biophysical and manmade environment that cannot be mitigated to acceptable levels or that could influence the viability and feasibility of the proposed Eskom Geluk-Rural power line.  This application is therefore recommended for Environmental Authorisation. |

**Route Alternative 2 and Route Alternative 3**

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| --- |
| Route **Alternative 2** is not the preferred option due to the following:   * *Vegetation Ecological Investigation*   The first section of this route alternative will pass through a sensitive ecosystem (Rocky outcrop area) which has a high conservation status with a medium sensitivity to disturbance. Since the vegetation units within the other two route alternatives have a low conservation value with low sensitivity, the route with the sensitive ecosystem is not preferred.   * *Heritage Impact Assessment*   A site with cultural significance was identified within close proximity to this route alternative and is therefore not the preferred option from a heritage point of view.  Route **Alternative 3** is not the preferred option due to the following:   * *Avifauna Impact Assessment*   Although Alternative 3 runs through transformed habitat, it crosses over several farm dams. These farm dams could attract waterbirds, including several Red Data species, which may collide with the power line. From a bird impact assessment perspective, Alternative 3 is therefore the least preferred option.   * *Heritage Impact Assessment*   A site with cultural significance was identified within close proximity to this route alternative and is therefore not the preferred option from a heritage point of view.  After taking all factors into account it is clear that the Preferred Route would be the best option to reach the goals of this project. |
| **No-go alternative (compulsory)** |
| The existing Rural–Geluk / Rhombus line is currently a Hare conductor and faults on the line, with associated power cuts, are a common occurrence. This has a direct negative impact on the users of the line and the need for line refurbishment was identified.  Should the no-go option apply, the status quo will not just remain, but it will get worse. Electricity supply will become less and less reliable and the impact on its users more intense.  A lack of electricity and/or an unreliable supply will have a definite negative impact on the economy of the area. |

**SECTION E. Recommendation of practitioner**

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

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

|  |
| --- |
| Not applicable |

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

|  |  |  |
| --- | --- | --- |
| The implementation of the Environmental Management Plan must be a condition in the authorisation of the project. | | |
| Is an EMPr attached? | **√ YES** | NO |

The EMPr must be attached as Appendix G.

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

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

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

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NAME OF EAP

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

SIGNATURE OF EAP DATE

**Section F: Appendixes**

The following appendixes must be attached:

**Appendix A: Maps**

* + Locality Map
  + Route Map (*Initial Route Investigation & Final Route Map*)
  + Co-ordinates of both the Preferred and Alternative Routes
* Map SANBI: Terrestrial Critical Biodiversity Area
  + Map SANBI: Protected Areas
  + Map SANBI: Threatened Ecosystems
  + Map SANBI: Vegetation Types

**Appendix B: Photographs**

* Photo Report

**Appendix C: Facility illustration(s)**

* Lattice and monopole structure types

**Appendix D: Specialist reports (including terms of reference)**

* + Vegetation Ecological Investigation – EnviroGuard Ecological Services
  + Bird Impact Assessment – Chris van Rooyen Consulting
  + Heritage Impact Assessment–Archaetnos Culture & Cultural Resource Consultants

**Appendix E: Public Participation**

* E1 – Proof of Placement of Advertisements
* E2 – Proof of initial notification to Interested &Affected Parties
* E3 – Comments and Reponses Report
* E4 – Proof of notification to I&AP’s of availability of the Draft BAR
* E5 – Complete register of Interested & Affected Parties
* E6 – Copies of Correspondence, notes and minutes of meetings
  + - Comment received during the Initial Advertising Period from 5 November 2013 up to the compilation of the Draft BAR
    - Comment received on the Draft BAR

**Appendix F: Impact Assessment**

* Impact Assessment

**Appendix G: Environmental Management Programme (EMPr)**

* Environmental Management Programme

**Appendix H: Details of EAP and expertise**

* Landscape Dynamics Company Profile and Condensed CV’s

**Appendix I: Specialist’s declaration of interest**

* Specialist’s Declaration of Interest

**Appendix J: Additional Information**

* None

1. “Alternative A..” refer to activity, process, technology or other alternatives. [↑](#footnote-ref-1)