



**BASIC ASSESSMENT PROCESS ASSOCIATED WITH THE CONSTRUCTION
TOWER FOOTINGS WITHIN WATER COURSES FOR PHASE 4 OF THE BRAVO
INTEGRATION PROJECT IN THE MPUMALANGA PROVINCE**

FINAL BASIC ASSESSMENT REPORT

JULY 2016

DEA REFERENCE: 14/12/16/3/3/1/1584

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environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

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Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2014, 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, 2014 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 **08 December 2014**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.



10. The report must be compiled by an independent environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.
14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included in the electronic copy of the report submitted to the competent authority.

PROJECT DETAILS

Title : Basic Assessment Process associated with the construction tower footings within water courses for phase 4 of the Bravo Integration Project in the Mpumalanga Province.

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Report Status : Final Basic Assessment Report for Competent Authority Review

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EAP Registrations/ Associations	Registered with the South African Council for Natural Scientific Professions (No: 400049/12)		

Details of the EAP's expertise to carry out Basic Assessment procedures

Envirolution Consulting Pty Ltd was contracted by Eskom as the independent environmental assessment practitioner to undertake the Environmental Basic Assessment process for the proposed project. Envirolution Consulting Pty Ltd is not a subsidiary of or affiliated to Eskom. Furthermore, Envirolution Consulting does not have any interests in secondary developments that may arise out of the authorisation of the proposed project.

The EAP's from Envirolution Consulting who are responsible for this project are ([Refer to Appendix H1 & H2 for CVs](#)):

- Gesam Govender – The principle environmental assessment practitioner (EAP) for this project is a registered Professional Natural Scientist and holds an Honours Degree in Botany. He has over 15 years of experience within the field of environmental management. His key focus is on strategic environmental assessment and advice; management and co-ordination of environmental projects, which includes integration of environmental studies and environmental processes into larger engineering-based projects and ensuring compliance to legislation and guidelines; compliance reporting; the identification of environmental management solutions and mitigation/ risk minimising measures; and strategy and guideline development. He is currently responsible for the project management of EIA's for several diverse projects across the country.
- Andrishia Govender – the principle author of this Final Basic Assessment Report holds a BSc. Environmental Science degree from the University of KwaZulu - Natal. She has a year's experience of consulting in the environmental field. Her key focus is on strategic environmental assessment and advice; management and co-ordination of environmental projects, which includes integration of

environmental studies and environmental processes into larger engineering-based projects and ensuring compliance to legislation and guidelines; environmental auditing and compliance reporting; the identification of environmental management solution and mitigation/ risk minimising measures; environmental auditing, monitoring and reporting compliance. Andrisha is currently a Project Manager and Environmental Consultant at Envirolution Consulting Pty Ltd.

ABBREVIATIONS

BAR	Basic Assessment Report
DEA	Department of Environmental Affairs
DoE	Department of Energy
EAP	Environmental Assessment Practitioner
EMPr	Environmental Management Programme
EIA	Environmental Impact Assessment
ERA	Electricity Regulation Act (No. 4 of 2006)
GN	Government Notice
Ha	Hectares
HIA	Heritage Impact Assessment
I&AP's	Interested and Affected Parties
IPP	Independent Power Producer
MW	Megawatts
NEMA	National Environmental Management Act (No. 107 of 1998) (as amended)
NHRA	National Heritage Resources Act (No. 25 of 1999)
NWA	National Water Act (No 36 of 1998)
SAHRA	South African Heritage Resources Agency
SDF	Spatial Development Framework

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SECTION A: ACTIVITY INFORMATION

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

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

1. PROJECT DESCRIPTION

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

1.1 Background Information

The growing demand for electricity is placing increasing pressure on Eskom's existing power generation and transmission capacity. Eskom Holdings SOC is committed to implementing a Sustainable Energy Strategy that complements the policies and strategies of National Government. Eskom aims to improve the reliability of electricity supply to the country, and in particular to provide for the growth in electricity demand in the Gauteng and Mpumalanga provinces. For this reason, Eskom obtained environmental authorisation from Department of Environmental Affairs (DEA) to construct the new 400 kV Bravo (Kusile) coal-fired Power Station located between Bronkhorstspuit and Witbank in 2007. Construction of the Kusile power station has already commenced. Due to this construction, the new Bravo Power Station has reached a stage where it needs to be integrated with the existing Eskom electricity infrastructure.

In this regard Eskom also obtained environmental authorization on 09 October 2009 from the Department of Environmental Affairs (DEA) for the construction of two new 400kV power lines from the Kendal Power Station (near Ogies, Mpumalanga) to the Zeus Substation (near Secunda, Mpumalanga), one powerline will further join to an existing power line that spans from the Kendal Power Station to Kusile Power Station in the Mpumalanga Province (DEA Reference No. 12/12/20/1095). Each of these lines will be approximately 70 km's in length with a combined length of 140km. The lines will run parallel to each other. Please refer to the locality map (Figure 1.1) for further details. Following approval by DEA in 2009, it has been identified that certain tower footings associated with the power lines may impact on watercourse crossings and drainage lines. Thus requiring Environmental Authorisation in terms of the National Environmental Management Act (NEMA) (Act 107 of 1998). Activities identified in Listing Notice 1 of General Notice Regulations (GN R.) 983 and Listing Notice 3 of GN R. 985 are triggered by the proposed project and thus a Basic Assessment (BA) process is being undertaken. Specialist Ecological (Flora and Fauna), Avifauna, Wetland, Social and Heritage Assessments were undertaken during the Basic Assessment and their reports are attached as Appendices to this BAR. Eskom has appointed Envirolution Consulting as independent environmental assessment practitioners, to undertake the Basic Assessment and Environmental Management Programme (EMPr) processes. The main objective of the Basic Assessment and EMPr is to identify and assess potential environmental impacts associated with the proposed project, and to compile appropriate mitigation measures.

A water use license was lodged with the Department of Water and Sanitation and subsequently approved on 19 November 2015.

1.2 Locality

The power line route falls within the jurisdiction of Victor Khanye (Delmas), eMalahleni Local Municipality, Govan Mbeki Local Municipality, by – passing various suburbs/ towns namely; Embalenhle, Evander, Secunda, Leandra, Kinross, Charl Cilliers, Kendal, Ogies, Delmas (refer to figure 1.1). A detailed description of the proposed development is highlighted in **Section 1.3 of this report**. This Basic Assessment Report (BAR) covers the findings of the site assessment and impacts identified for the tower footings associated with the power lines that may impact on watercourse crossings and drainage lines.

1.3 Project Description

The two 400 kV power lines of approximately 70km in length, will run parallel to each other, starting approximately 8 km south-west of Ogies at the Kendal power station and ending approximately 20 km south-west of Secunda at the Zeus Substation, these two parallel lines (green) are referred to as (Zeus-Kendal) , an indication of the locality of the power line is provided in figure 1 below.

The purpose of this line is to integrate the new Bravo (Kusile) Power Station into the Eskom grid to supply additional electricity to the Diepsloot and the Johannesburg north area which in turn will contribute to the reliable electricity supply of the country. The study area falls within the Olifants River (Catchment B) and Vaal River (Catchment C) Primary Catchments ([See Appendix A3](#)). The main river in the northern section of the site is the Wilge River along with the Kromdraai Spruit and the Riet Spruit. All these watercourses drain primarily northwards towards the Olifants River. Several non-perennial streams and drainage lines also occur throughout the area, draining towards the main rivers. The southern section of the site drains towards the Vaal River and the main tributaries are the Waterval River, The Klip Spruit and the Boesman Spruit. The main drainage direction is southeast towards the Vaal River. As part of the of two new 400kV power lines there is a footing that is proposed after every 400m therefore a total of 386 tower footings of which there are approximately 145 towers that are impacting on watercourse crossings and drainage lines.

The following types of towers have been recommended for this project:

- Cross rope suspension tower
- Compact cross rope suspension tower
- Guyed-V suspension tower;
- Self-supporting suspension tower; and
- Self-supporting strain tower.

Please refer to Appendix C for Facility Illustrations

Different towers may be used along different sections of the routes to comply with the local conditions including, the terrain, ground clearance requirements, topology and geology (see Appendix J2 for tower resource details). It is assumed that each tower would be erected on concrete footings with dimensions of 2 x 2 x 2 m (area = 4 m² and volume = 8 m³) for each concrete footing. The number of foundations will be dependent on the type of tower chosen. The installation of the foundations will take place under supervised conditions. All towers will be assembled simultaneously in stages, that is,

bottom structures will be assembled for all towers in the first phase (phase 1), middle structures for all towers will be assembled simultaneously in the second phase (phase 2) and so on.

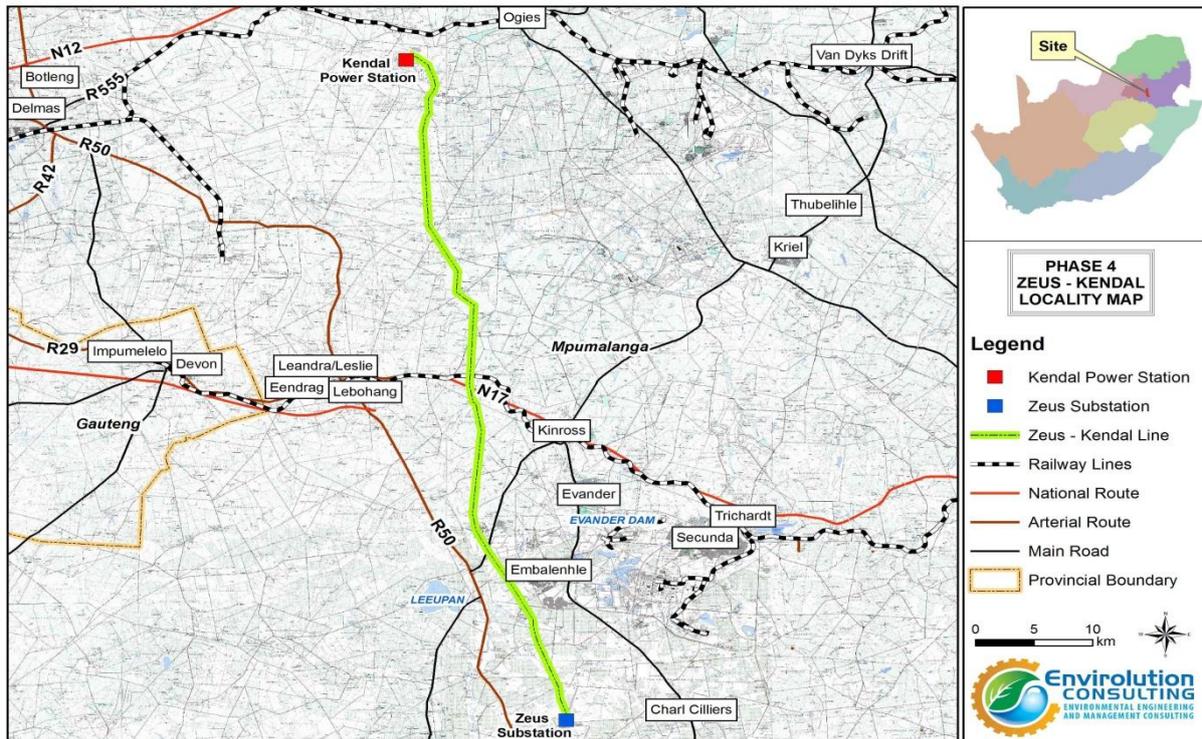


Figure 1: Locality Map indicating the Power line Route

Servitudes

The operation and construction servitudes will be 55m (i.e. 27.5 m on either side of the centre line) The Eskom Standard and specifications for vegetation clearance and invasive alien plant management for new power line construction specifications (See Appendix J4) have been incorporated into the EMPr, which will guide the construction, operational and maintenance phases of the project.

Establishment of Construction Camps

The establishment of construction camps will be done in accordance to the stipulations of the final Environmental Management Programme and negotiations with the affected landowners. The construction contractor would need to set up at least one site camp but this does not necessarily need to be near the power line route. The contractor may however prefer to use a fully serviced site at another location. The contractor will be encouraged to utilise already disturbed areas for construction camp purposes, in order to minimise cumulative impacts. It is likely that a number of construction camps would need to be established for the construction period

Water

Water will be required for potable use and in the construction of the foundations for the towers. The water will be sourced from municipality points at locations closest to the area of construction.

Sewerage

A negligible sewage flow is anticipated for the duration of the construction period. The Contractor is to provide portable toilet facilities for the use of his workforce at all work sites, and the contractor will ensure regular treatment of these facilities. . The toilets will be serviced regularly, as specified by the final site specific EMPr.

Roads

Existing roads will be utilised as far as possible during construction and operation. No roads that trigger NEMA Regulations Listed Activities will be required. The use of roads on landowner property is subject to the provisions of an EMPr and will be determined based on discussions with landowners should it be necessary.

Solid Waste Disposal

Eskom has a strong commitment to waste minimisation and recycling. All solid waste will be collected at a central location at each construction site, and will be disposed at the registered waste site or stored temporarily until removal for recycling or disposal at an appropriately permitted landfill site in the vicinity of the construction site.

Foundations

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

Concrete Batching

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

- a) The Contractor shall be responsible for negotiating the site of his batching plant (if required) and the conditions under which it may be established, with the landowner. The Contractor shall be responsible for the proper management of the batching plant.
- b) Upon completion of works, the ground of the batching plant area shall be rehabilitated and the site cleaned and left as it was found and to the satisfaction of the Supervisor and landowner.
- c) The use of local water for concrete must first be negotiated with the landowner and the appropriate authorities. Such water is to be analysed and accepted by the Project Manager before use.

Stringing

Once towers have been erected, cables will be strung between the towers. Stringing will be undertaken in accordance with Eskom's stringing procedure.

Bird Flight Diverters

Bird flight deflectors will be fitted on the structures during the construction phase.

Electricity

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

Anti – Climbing Devices

Anti-climbing devices shall be designed for each tower. These are to be attached at a height of approximately 3m, but not less than 2,5m above ground level.

1.4 Construction Process

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

Generally, the construction of the power line is expected to consist of the following sequential phases, all of which has been approved under the existing authorisation for the power line (EIA DEA Reference No. 12/12/20/1095):

Step 1: Feasibility and identification of line alternatives.

Step 2: Basic Assessment input and environmental permitting.

Step 3: Negotiation of final route with affected landowners.

Step 4: Survey of the proposed route.

Step 5: Selection of structures suited to the terrain and ground conditions.

Step 6: Final design of the distribution line and placement of towers.

Step 7: Issuing of tenders and eventually appointment of contractors for the project.

Step 8: Vegetation clearance and construction of access roads (if required).

Step 9: Pegging of structures.

Step 10: Construction of foundations.

Step 11: Assembly and erection of structures.

Step 12: Stringing of conductors.

Step 13: Rehabilitation of disturbed areas and protection of erosion sensitive areas.

Step 14: Testing and commissioning.

Step 15: Operation and routine maintenance.

Operation Phase

Vegetation will be maintained by Eskom in the operational phase of the project.

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

Listed activity as described in GN R 983, 984 and 985	Description of project activity that triggers listed activity
<p><u>GNR 983: 2014 (Listing Notice 1) Activity 12</u></p> <p>The development of –</p> <p>(xii) infrastructure and structures with a physical footprint of 100 square metres or more;</p> <p>Where such development occurs -</p> <p>(a) within a watercourse; or</p> <p>(c) within 32 metres of a watercourse, measured from the edge of a watercourse.</p>	<p>As part of the of two new 400kV power lines there is a footing that is proposed after every 400m therefore a total of 386 tower footings of which there are approximately 145 towers that are impacting on watercourse crossings and drainage lines. Due to the footprint of all tower footings crossing a watercourse and within 32 metres of a watercourse, this activity is applicable.</p>
<p><u>GNR 983: 2014 (Listing Notice 1) Activity 19</u></p> <p>The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells grit, pebbles or rock of more than 5 cubic metres from -</p> <p>(i) a watercourse.</p>	<p>It is assumed that each tower would be erected on concrete footings with dimensions of 2 x 2 x 2 m (area = 4 m² and volume = 8 m³) for each concrete footing. The number of foundations will be dependent on the type of tower chosen. To ensure the towers is built according to safe building standards there will have to be excavations and trenching, laying the foundation and other intrusive construction activities within the water courses that will trigger this activity.</p>
<p><u>GNR 985: 2014 (Listing Notice 3) Activity 14</u></p> <p>The development of –</p> <p>(xii) infrastructure or structures where the physical footprint is of 10 square metres or more;</p> <p>Where such development occurs –</p> <p>(a) within a watercourse;</p> <p>(a) in Mpumalanga;</p> <p>(ii) if outside urban areas, in:</p> <p>(dd) sensitive areas identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority.</p>	<p>Patches of Highly Significant Critical Biodiversity Areas are present. Tower footings which are positioned within a watercourse and the servitude that may impact on sensitive areas will trigger this activity.</p>

2. FEASIBLE AND REASONABLE ALTERNATIVES

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

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;

- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Describe alternatives that are considered in this application as required by Appendix 1 (3)(h), Regulation 2014. 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:

Please note that authorisation (DEA Reference No. 12/12/20/1095) has already been acquired for the preferred transmission line route and therefore no site alternatives can be proposed for this activity. In the previous authorisation alternative 3 was the preferred route as it was the shorter power line length that intersects the least sensitive environmental areas.

Powerline :

Latitude (S):

Longitude (E):

Powerline 1 (preferred)

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

Kendal to Zeus	26°5.183'S	28° 58.384'E
Kendal to Zeus	26°22'23.90"S	29° 1'0.69"E
Kendal to Zeus	26°41'40.22"S	29°5'23.61"E

Please refer to [Appendix J1](#) for coordinates of each tower footing impacting on watercourses.

Alternative S2 (if any)

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

Alternative S3 (if any)

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

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 of this form.

b) Lay-out alternatives

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

c) Technology alternatives

Alternative 1 (preferred alternative)
Please note that authorisation (DEA Reference No. 12/12/20/1095) has already been acquired for the preferred transmission line route. Technology alternatives (above ground vs. underground cables) were assessed in the previous EIA done in 2008 and further approved by the DEA. Please note that this authorisation is for the tower footings impacting on watercourses as it was previously omitted in the initial authorisation (DEA Reference No. 12/12/20/1095).
Alternative 2
Alternative 3

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

Design alternative 1(Preferred)
<p>Please note that authorisation (DEA Reference No. 12/12/20/1095) has already been acquired for the preferred transmission line route. Tower footings were assessed in the previous specialist studies included in the EIA done in 2008 and tower designs have been approved (Please refer to appendix J2 for the tower resource details and Appendix C for the facility illustrations). Therefore no design alternatives that can be proposed for this activity.</p> <p>The following types of towers were assessed for the project:</p> <p>Cross rope suspension tower; A larger version of the compact cross-rope tower, these structures are characterised by two steel vertical legs and a cross-rope forming the horizontal arm from which the conductors are suspended. Stay wires are used to securely anchor the structure. The tower configuration is approximately 38m high and 21m wide (excluding the anchors). The distance between the anchors at the base of the structure can be up to 80m.</p> <p>Compact cross rope suspension tower; The compact cross rope suspension tower (including stays wires) is approximately 49m wide and 38m high. The conductors are suspended in a triangular configuration and the tower resembles a V-type structure with the top width being 19m wide.</p> <p>Guyed-V suspension tower; This structure was developed by Eskom for optimal use with the quad zebra configuration. The guyed-V towers have one large foundation and four guys therefore four smaller foundations. Guyed-V towers provide the best protection from lightning impulses due to the groundwire and cross arm configuration. Tower cross bar helps with the live line maintenance. Problems with guyed - V towers are that they limited to relatively flat terrains and helicopters are needed when cranes restricted.</p> <p>Self-supporting suspension tower; and The self-supporting towers consist of a number of steel components that are joined together to form a steel-intensive structure. The tower is approximately 30m high and 20m wide at the apex. The base of the tower is approximately 8.8m wide.</p> <p>Self-supporting strain tower. These suspension towers consist of a number of steel components that are joined together to form a steel-intensive structure. The tower is approximately 30m high and 22.5m. These types of structures are typically used at bend point on a transmission line alignment.</p>

e) No-go alternative

<p>Authorisation has already been acquired (DEA Reference Number: 12/12/20/1095) for the transmission lines which the tower footing are associated with. This option is therefore ruled out because it would neither supply the projected demand for electricity nor optimise the existing infrastructure on the network.</p>

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

3. PHYSICAL SIZE OF THE ACTIVITY

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

Alternative:

Alternative A1¹ (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Size of the activity:

<p>The power line route which has already been authorised is 70km long (although there is 2 power lines of 70km each, they are running parallel to each other)</p> <p>The tower footings associated with the power lines will occur every 400m along the 70km transmission line route equating to 386. However 145 of these footings impact on watercourse crossings and drainage lines. The towers footings vary and have an area that ranges from approximately 81m² to 3802m²each.</p>

or, for linear activities:

Power lines:

Route 1 (preferred)

Length of the activity:

<p>The power line route which has already been</p>
--

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

authorised is 70000m/70km long (although there is 2 power lines of 70km each, they are running parallel to each other)

Alternative A2 (if any)
Alternative A3 (if any)

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

Power lines:

Route 1 (preferred)
Alternative A2 (if any)
Alternative A3 (if any)

Size of the site/servitude:

70000m x 55m

4. SITE ACCESS

Does ready access to the site exist?

YES ✓

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

Describe the type of access road planned:

Maximum use of both the existing servitudes and the existing roads shall be made. All access roads on the servitude must be in accordance to Eskom’s Transmission Specifications – Transmission Line and Towers and Line Construction that was covered under EIA done in 2009 DEA Reference No. 12/12/20/1095.

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

5. LOCALITY MAP

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

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

[Please find attached in Appendix A1.](#)

6. LAYOUT/ROUTE PLAN

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

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

[Please find attached in Appendix A2.](#)

7. SENSITIVITY MAP

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

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWS);
- 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.

[Please find attached in Appendix A3.](#)

8. SITE PHOTOGRAPHS

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

[Please find attached in Appendix B.](#)

9. FACILITY ILLUSTRATION

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

[Please find attached in Appendix C.](#)

10. ACTIVITY MOTIVATION

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

1. Is the activity permitted in terms of the property's existing land use rights?	YES ✓		Please explain
The power line route has already been approved by DEA (Reference No. 12/12/20/1095). The tower footings are an integral component in construction of the power line. Most of the proposed route passes through privately owned agricultural farm areas. Once in place, the power line is unlikely to significantly disrupt farming activities. Eskom has acquired all servitudes and affected property owners will be permitted to use areas underneath the lines for farming.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES ✓		Please explain
Even though the activity is occurring in Mpumalanga, the proposed development will be of little significance to the Mpumalanga Province because the purpose of this line is to integrate the new Bravo Power Station into the Eskom grid to supply additional electricity to the Diepsloot and the Johannesburg north area. Accommodation for the expansion of the population has been set out as a priority in Gauteng. Electricity infrastructure will be a necessity in order for this to occur.			

(b) Urban edge / Edge of Built environment for the area			Please explain
This is not applicable as the activity falls outside of the urban edge.			
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	YES ✓		Please explain
Although the development will occur in Mpumalanga, the benefits of the project will be felt in Gauteng, specifically in Diepsloot and the Johannesburg North Area. The City of Joburg IDP (2015/2016) has identified the shortage of electricity supply to urban and residential areas of the municipality and addressing electrification backlogs as some of the core challenges. There is inadequate electricity bulk supply and the impact on service delivery and development remains a challenge for these areas. The local municipalities in which the development falls was not taken into consideration as the proposed development will be of little significance to them.			
(d) Approved Structure Plan of the Municipality			Please explain
The proposed project entails electricity infrastructure and is therefore not applicable.			
(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	YES ✓		Please explain
The project area does not fall into an area with high ecological sensitivity.			

<p>(f) Any other Plans (e.g. Guide Plan)</p>	<p>YES ✓</p>		<p>Please explain</p>
<p>The proposed development is aligned with Eskom’s Integrated Strategic Electricity Planning (ISEP) process, which is intended to provide strategic projections of supply-side and demand-side options to be implemented in order to meet long-term load forecasts. It provides the framework for Eskom to investigate a wide range of new supply-side and demand-side technologies with a view to optimising investments and returns.</p>			
<p>3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?</p>	<p>YES ✓</p>		<p>Please explain</p>
<p>The proposed development is in line with the National Development Plan. The power line with which the tower footings are associated will only supply additional electricity to the Diepsloot and the Johannesburg north area. Thus the SDF of the Local Municipalities in which the proposed development falls was not taken into consideration as the proposed development will be of little significance to these Municipalities.</p>			
<p>4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)</p>			<p>Please explain</p>
<p>Although the development will occur in Mpumalanga, the benefits of the project will be felt in Gauteng, specifically in Diepsloot and the Johannesburg North Area. The City of Joburg IDP (2015/2016) has identified the shortage of electricity supply to urban and residential areas of the municipality and addressing electrification backlogs as some of the core challenges. There is inadequate electricity bulk supply and the impact on service delivery and development remains a challenge for these areas. The local municipalities in which the development falls was not taken into consideration as the proposed development will be of little significance to them</p>			
<p>5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)</p>	<p>YES ✓</p>		<p>Please explain</p>
<p>Authorisation for the power line which this application is associated with, has already acquired (DEA Reference Number: 12/12/20/1095) thus additional capacity be created to cater for the development. Furthermore, construction and operation of tower footings and associated power line will not require any capacity increase for services such as water and sanitation from relevant Municipalities.</p>			

<p>6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)</p>	<p>YES ✓</p>		<p>Please explain</p>
<p>Authorisation for the power line which this application is associated with has already been acquired (DEA Reference Number : 12/12/20/1095) thus this development should not affect the infrastructure planning of the municipality The proposed project is the construction of tower footing associated with the already approved power lines which is aimed at improving the quality of supply. It will not require any capacity for services such as water and sanitation from relevant Municipalities. It will however improve the quality of supply.</p>			
<p>7. Is this project part of a national programme to address an issue of national concern or importance?</p>	<p>YES ✓</p>		<p>Please explain</p>
<p>The upgrading of the electricity network and infrastructure especially the substations and transmission and distribution lines is a strategic priority towards addressing the shortage of electricity in South Africa.</p>			
<p>8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)</p>	<p>YES ✓</p>		<p>Please explain</p>
<p>Although the proposed development traverses privately owned agricultural lands, the location of the sites is strategically selected so that it is within or next to the centre of the load demand identified by Eskom</p>			
<p>9. Is the development the best practicable environmental option for this land/ site?</p>	<p>YES ✓</p>		<p>Please explain</p>
<p>The powerline with which the tower footings are associated has already been approved (DEA Reference Number : 12/12/20/1095). Most of the proposed route passes through privately owned farm land. Once in place, the power line is unlikely to significantly disrupt farming or other activities. Eskom will acquire all servitudes, affected property owners will be permitted to use areas underneath the lines for farming. No buildings and tall structures or tall trees may be allowed below the lines.</p>			
<p>10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?</p>	<p>YES ✓</p>		<p>Please explain</p>
<p>The main negative impacts of the proposed development are the visual impacts and potential impacts on avifauna. The negative impacts of the proposed development are low. The long-term, regional benefits of reliable power supply will outweigh the negative impacts of the proposed tower footings associated with the power lines.</p>			

11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	YES ✓		Please explain
The placement of power lines in the area will set a precedent for the development of more power line connections and service infrastructure as this power line with which the tower footing are associated form part of a bigger project by Eskom known as the Bravo integration Project.			
12. Will any person's rights be negatively affected by the proposed activity/ies?		NO ✓	Please explain
This activity will not negatively affect any person's rights. The servitude rights for the line have been acquired by Eskom and negotiations with landowners are complete and financial compensation has been paid. Authorisation for the power line has already been acquired (DEA Reference Number : 12/12/20/1095)			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?		NO ✓	Please explain
The proposed project takes place in an area outside the urban edge. The urban edge will not be compromised.			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	YES ✓		Please explain
<p>The project will conform to the objectives of the following SIP:</p> <p><u>SIP 6: Integrated Municipal Infrastructure Project</u> Develop a national capacity to assist the 23 least resourced districts (17 million people) to address all the maintenance backlogs and upgrades required in water, electricity and sanitation bulk infrastructure.</p> <p><u>SIP 10: Electricity transmission and distribution for all</u> 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.</p>			
15. What will the benefits be to society in general and to the local communities?	Please explain		
Although the development will occur in Mpumalanga, the benefits of the project will be felt in Gauteng, specifically in Diepsloot and the Johannesburg North Area. The benefit includes the provision of a reliable electricity network and provision of capacity for new and existing users, allowing for further growth and development in these areas. The project will also provide electricity to the informal settlements surrounding the Diepsloot area and will serve in addressing current inequalities in access to electricity.			

16. Any other need and desirability considerations related to the proposed activity?	Please explain
<p>The purpose of the line with which this application is associated is to integrate the new Bravo Power Station into the Eskom grid to supply additional electricity to the Diepsloot and the Johannesburg north area which are consistently facing development pressures. One of the aspects that do place pressure on these areas are the existence of informal settlements in Diepsloot and other areas within Johannesburg North, which means that pressure begins to emerge for the formalisation of these informal settlements into formal townships. A number of housing initiatives are already underway in these areas which in turn require the development of supporting social facilities such as the provision of electricity.</p>	
17. How does the project fit into the National Development Plan for 2030?	Please explain
<p>Chapter 4 of the National Development Plan 2030 on Economic Infrastructure has outlined how the proportion of people with access to the electricity grid should rise to at least 90 percent by 2030, with non-grid options available for the rest.</p> <p>Action 20 of The National Development Plan also considers the Ring-fencing the electricity distribution businesses of the 12 largest municipalities (which account for 80 percent of supply), resolve maintenance and refurbishment backlogs and develop a financing plan, alongside investment in human capital.</p>	
18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.	
<p>The general objective of the Integrated Environmental Management has been taken into consideration for this Basic Assessment Report by means of identifying, predicting evaluating the actual and potential impacts on the environment, social economic conditions and cultural heritage component. The risks, consequences and alternatives as well as option for mitigation of activities have also been considered with a view to minimise negative impacts, maximise benefits, and promote compliance with the principles of environmental management.</p>	

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

The principles of environmental management as set out in section 2 of NEMA have been taken into account. The principles pertinent to this activity are discussed below:

- The development is socially, economically and environmentally sustainable in that the proposed project will create job opportunities, therefore helping in meeting some of the social needs.
- Development must be socially, environmentally and economically sustainable. Where disturbance of ecosystems, loss of biodiversity, pollution and degradation, and landscapes and sites that constitute the nation's cultural heritage cannot be avoided, are minimised and remedied. Although the activity has little to no impact on these, they have been considered, and mitigation measures have been put in place.
- Where waste cannot be avoided, it is minimised and remedied through the implementation and adherence to the EMP.
- The negative impacts on the environment and on people's environmental rights have been anticipated and prevented, and where they cannot be prevented, are minimised and mitigated.
- The interests, needs and values of all interested and affected parties have been taken into account in any decisions through the Public Participation Process.
- The social, economic and environmental impacts of the activity have been considered, assessed and evaluated, including the disadvantages and benefits.

The effects of decisions on all aspects of the environment and all people in the environment have been taken into account, by pursuing what is considered the best practicable environmental option.

11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
<p>The National Environmental Management Act (NEMA), (Act No 107 of 1998)</p>	<p>The requirement to obtain environmental authorisation for certain development proposals or projects is legislated in NEMA. Any activity which is listed in Listing Notice 1 - Listing Notice 3 of these EIA Regulations is subject to environmental authorisation. The proposed project triggers activities in Listing Notice 1 and is subject to Basic Assessment. Chapter 5 of NEMA focuses on promoting the use of appropriate environmental tools, primarily environmental and social impact assessment procedures, as a means to achieve the goal of integrated environmental management. The EIA Regulations, made under section 24 of NEMA, are intended to integrate and facilitate environmental impact management with development activities or processes, in line with sustainable development objectives. They provide a method for the investigation, assessment and communication of the potential consequences or impacts of listed activities</p>	<p>Department of Environmental Affairs (DEA)</p>	<p>1998</p>
<p>Environmental Impact Assessment Regulations of 2014 (Government Notice No. R. 982,983,984 and 985 as amended)</p>	<p>The purpose of the EIA Regulations is to ensure that the impacts of activities for which environmental authorisations are necessary are properly assessed; so that the positive environmental</p>	<p>Department of Environmental Affairs (DEA)</p>	<p>2014</p>

	<p>impacts are enhanced; the activities which may have an unacceptable, negative effect on the environment are not authorised and those which are suitable for authorisation are approved, with conditions to avoid or mitigate possible detrimental effects. The proposed project triggers activities in Listing Notice 1 of GN 983.</p>		
<p>Constitution of the Republic of South Africa Act No. (106 of 1996)</p>	<p>The Constitution is the supreme Law in South Africa. Chapter 2 of the Constitution contains the Bill of Rights including section 24 which provides that: "Everyone has the right- (a) to an environment that is not harmful to their health or well-being; and (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that- (i) prevent pollution and ecological degradation; (ii) promote conservation; and (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development." Other rights protected by the Constitution relevant to an application for environmental authorisation include the right to administrative justice and to information, and rights, known as "socio-economic rights", such as access to adequate power supply. The right to administrative justice is relevant to applications for environmental authorisations because</p>	<p>South African Government</p>	<p>1996</p>

	decisions made by the competent authority in the course of the EIA process (such as the decision to accept a basic assessment report) as well as a final decision on the application fall into the definition of "administrative action"		
The National Water Act, 1998 (Act No 36 of 1998)	The National Water Act, 1998 (Act No. 36 of 1998) mandates the Minister of Water Affairs to ensure that water is protected, used, developed, conserved, managed and controlled in a sustainable and equitable manner for the benefit of all persons. For this project the DWs would, make the decision based on matters directly related to water resources as the tower footing are on watercourse crossings and drainage lines . The NWA will provide guidance as to the management and protection of the a water crossings and drainage pathways on site in adherence to the standards set by the Department of Water and Sanitation.	Department of Water and Sanitation	1998
National Heritage Resources Act (Act 25 of 1999)	In the construction phase of the proposed project has potential for cultural and heritage resources to be uncovered, SAHRA’s would need to be contacted to assist to identify, manage, protect, preserve and conserve heritage resources that have significance.	SAHRA	1999
Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)	This Act will be enforced during the construction and it serves to mitigate any potentially negative impacts the proposed project may have on any of the labour force.	Department of Labour	1993
Noise Regulations 1182 and	The construction phase is	National Department of	1989

1183 under the Environment Conservation Act (Act 73 of 1989)	likely to result in noise generation and limits set under this regulation should be adhered to	Environmental Affairs (DEA)	
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12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

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

YES ✓	[Redacted]
1000m ³	

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

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

Construction rubble/ solid waste will be temporarily stored on site in designated waste skips and then removed by an appropriate waste contractor appointed by the main construction contractor to an approved landfill site. Soil excavated from trench and earth works during the grading of the substation will be used as backfill.

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

General waste removed from site will be disposed of at the nearest registered Landfill Site. Safe disposal certificates will be obtained and kept on site for the duration of the construction phase.

Will the activity produce solid waste during its operational phase?

[Redacted]	NO ✓
[Redacted]	

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

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

[Redacted]

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

[Redacted]

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

[Redacted]

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?

[Redacted]	NO ✓
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If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

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

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

b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system? NO ✓

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

Will the activity produce any effluent that will be treated and/or disposed of on site? NO ✓

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

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

If YES, provide the particulars of the facility:

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

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

[Redacted area]

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities? NO ✓

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

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

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

[Redacted area]

d) Waste permit

[Redacted area] 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?

Describe the noise in terms of type and level:

While no noise will be generated by the activity during the operational phase, noise will be generated by construction activities. Construction activities will be temporary and will take place between the hours of 7h30 and 18h00 to avoid noise disturbance. All construction equipment will be maintained and kept in good working order to minimise associated noise impacts. If required, adequate noise suppression measures (i.e. screens, etc.) may be erected around the point source of construction and/or operational noise pollution to reduce noise to an acceptable level

13. WATER USE

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

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

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

YES ✓	

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

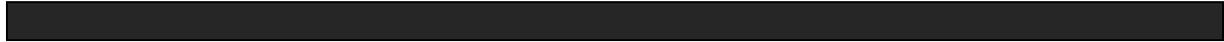
A Water Use License was granted on 19 November 2015. License No.: 04/B20E/CI/4008, File No.:27/2/1/B520/111/1

14. ENERGY EFFICIENCY

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

The power line does not use energy. Diesel generators will be utilised for the provision of electricity where electricity connection is not readily available.
 Fuel and Oil - Delivery Vehicles and other construction equipment will use petrol, diesel and oil. Use and number of such vehicles and machinery will be restricted to that which is absolutely necessary for the construction activities and deliveries. Following construction, only small quantities of fuel and oil will be used for periodic inspections and maintenance

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



SECTION B: SITE/AREA/PROPERTY DESCRIPTION

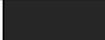
Important notes:

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):

Authorisation already acquired for the power line route (DEA Reference number: 12/12/20/1095). The tower footings within a watercourse are the areas being assessed in this Basic Assessment and therefore the site will be similar in nature along the route.

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

3. Has a specialist been consulted to assist with the completion of this section? YES ✓ 
- 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	Mpumalanga
District Municipality	Gert Sibande & Nkangala District Municipality
Local Municipality	Emalahleni, Govan Mbeki, Victor Khanye (Delmas) Local Municipality
Ward Number(s)	Emalahleni : 30 Govan Mbeki : 1; 10; 19 Victor Khanye (Delmas) : 7
Farm name, number and Portion number	Blesbokspruit 90 - 28; 1; 24; 8; 17 Branddrift 322 - 2; 3; 6; 14 Grootspruit 279 - 2; 5; 7; 0; 10; 3; 15 Kortlaagte 67 - 9; 2; 5; 8; 6 Kromdraai 128 - 9; 12; 17; 8; 0; 20 Leeufontein 219 - 18; 24; 13; 0 Moedverloren 88 - 6; 43; 39; 4; 5; 36; 1; 15 Olga 35 - 35 Rhino lodge 582 - 0 Rietkuil 283 - 6; 7; 5 Rolspruit 127 - 12; 0; 22; 11; 2 Schoongezicht 218 - 40; 3; 39; 45 Uitmalkaar 126 - 4; 2 Uitvlugt 255 - 0; 3; 2 Zandfontein 130 - 6; 8; 21; 25; 3; 2; 19; 9 Zondagsfontein 253 - 11; 10; 9; 1
SG Code	Please see Appendix J2

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:

Mining and 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?

NO

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Powerline Route 1:

Flat ✓	1:50 – 1:20 ✓					
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Applicable to all 145 tower footing locations

Alternative S2 (if any):

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Alternative S3 (if any):

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2. LOCATION IN LANDSCAPE

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

Applicable to all 145 tower footings locations

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

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Applicable to all 145 tower footings locations

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

	Powerline Route A1:	Alternative S2 (if any):	Alternative S3 (if any):
Shallow water table (less than 1.5m deep)	NO ✓	YES NO	YES NO
Dolomite, sinkhole or doline areas	NO ✓	YES NO	YES NO

Seasonally wet soils (often close to water bodies)	YES ✓		YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil		NO ✓	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)		NO ✓	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES ✓		YES	NO	YES	NO
Any other unstable soil or geological feature		NO ✓	YES	NO	YES	NO
An area sensitive to erosion	YES ✓		YES	NO	YES	NO

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

Soils identified on site were the Katspruit, Rensburg and Willowbrook soil forms are indicative of the permanent wetland zone, while the Kroonstad, Wasbank, Westleigh, Avalon, Inhoek and Longlands soil forms are indicative of the temporary or seasonal wetland zone.

4. GROUNDCOVER

Applicable to all 145 tower footings locations here

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

Natural veld - good condition ^E ✓			
	Cultivated land ✓		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.

Two plant species of concern were identified, namely *Boophone disticha* and *Crinum bulbispermum* . It is however possible that all the above species are present in the general area, but less probable within the narrow servitude of the powerline. There is suitable habitat on the site for all these species. (An exception is *Nerine gracilis*, which is probably not present in the Eskom servitude). The Declining species (*Crinum bulbispermum* and *Boophone disticha*) has not yet reached a threshold of concern and therefore limited loss of habitat may be permitted. (Driver *et al.*, 2009). No Nationally Protected trees (National Forests Act 1998) or NEMBA plant species (Government Notice No. 2007, National

Environmental Management: Biodiversity Act, 2004) occur within the area. No further plant provincially protected by the Mpumalanga Nature Conservation Act, 1998 (Act No. 10 of 1998), were recorded during the survey.

[Please refer to Appendix D4 for the Vegetation specialist report](#)

5. SURFACE WATER

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

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

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

The study area falls within the Olifants River (Catchment B) and Vaal River (Catchment C) Primary Catchments ([See Appendix A3](#)). The main river in the northern section of the site is the Wilge River along with the Kromdraai Spruit and the Riet Spruit. All these watercourses drain primarily northwards towards the Olifants River. Several non-perennial streams and drainage lines also occur throughout the area, draining towards the main rivers. The southern section of the site drains towards the Vaal River and the main tributaries are the Waterval River, The Klip Spruit and the Boesman Spruit. The main drainage direction is southeast towards the Vaal River. It has been determined that 5 types of watercourses; Channelled Valley Bottom wetlands; Floodplains, Un-channelled Valley Bottom wetlands; Hillslope seepage wetlands; and Pans (depressions) occur along the Bravo 4 Line route and may subsequently be affected by the tower footings (please refer to Appendix J1 for a list of affected towers).

[See Appendix D1 for the Wetland Specialist Report](#)

6. LAND USE CHARACTER OF SURROUNDING AREA

Applicable to all 145 tower footings locations here

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

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

Quarry, sand or borrow pit	Golf course	Other land uses (describe)
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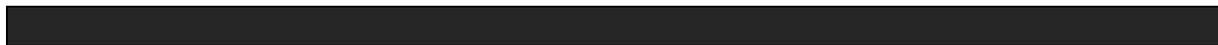
If any of the boxes marked with an "N" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:



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



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



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

Applicable to all 145 tower footings locations here

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

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

7. CULTURAL/HISTORICAL FEATURES

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

YES ✓	

According to the heritage specialist studies Only six sites of cultural significance were identified that were inside or on the periphery of the servitude alignment and specifically at the pylon positions. Out of the 6 sites, only one site (Kraal), 21m away from Tower Ke-Ze 144, is found to within the servitude.

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:

The proposed development can only continue on condition of acceptance of the recommended mitigation measures, as set out in the 2102 report (Fourie 2012). This, inter alia, would require a watching brief whereby a qualified archaeologist is in attendance if any construction activities takes place in the vicinity of the identified towers

Should archaeological sites or graves be exposed during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made. authorisation has been acquired DEA Reference No. 12/12/20/1095

[Please Refer to Appendix D2 for Heritage Specialist Report](#)

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

	NO ✓
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Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

	NO ✓
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If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

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

[Please refer to Appendix D6 for the Social Specialist Report](#)

Level of unemployment:

Emalahleni Local Municipality	There is 138 548 people who are economically active (employed or unemployed but looking for work); of these 27.3 % are unemployed. Of the 101 062 economically active youth (15 – 34 years) in the area, 36,0% are unemployed (Stats SA, 2011).
Govan Mbeki Local Municipality	There are 99 138 economically active people (employed or unemployed but looking for work) and, of these, 26,2% are unemployed. Of the 70 689 economically active youth (15–34 years) in the area (Stats SA, 2011).
Victor Khanye (Delmas) Local Municipality	There are 99 138 economically active people (employed or unemployed but looking for work) and, of these, 28,2% are unemployed. Of the 70 689 economically active youth (15–34 years) in the area (Stats SA, 2011).

Economic profile of local municipality:

Emalahleni Local Municipality	According to Census 2011, Emalahleni Local Municipality has a total population of 395 466. The
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	dominant economic sector in Emalahleni is mining, which contributes to more than 46% of the Gross Value Added (GVA) of the municipality. The type of mining done in Emalahleni is also relatively labour intensive - it employs more than 28% of Emalahleni's people. All other economic sectors contribute less than 10% each of the GVA of Emalahleni (Stats SA, 2011).
Govan Mbeki Local Municipality	According to Census 2011, Govan Mbeki Local Municipality has a total population of 294 538. The municipality boasts both mining and manufacturing sectors that contribute significantly to the local, provincial and national GDP (http://cgta.mpg.gov.za) (Stats SA, 2011).
Victor Khanye (Delmas) Local Municipality	The total population of Victor Khanye Local Municipality is approximately 75 452. Farming is the most dominant economic activity in Victor Khanye Local Municipality, occupying approximately 60% of the total physical area. However, in terms of output and proportional contribution to the local economy, the largest sector is trade, followed by agriculture and mining sectors (Stats SA, 2011).

Level of education:

Emalahleni Local Municipality	According to Census 2011, Emalahleni Local Municipality has a total population of 395 466, of those aged 20 years and older, 4,0% have completed primary school, 35,7% have some secondary education, 31,5% have completed matric, 14,0% have some form of higher education, while 5, 8% have no form of schooling (Stats SA, 2011).
Govan Mbeki Local Municipality	According to Census 2011, Govan Mbeki Local Municipality has a total population of 294 538, of those 20 years and older, 3,9% completed primary school, 33,9% have some secondary education, 31,4% completed matric, and 12,6% have some form of higher education. The percentage of those aged 20 years and older with no form of schooling is 7,9% (Stats SA, 2011).
Victor Khanye (Delmas) Local Municipality	The total population of Victor Khanye Local Municipality is approximately 75 452, of those 20 years and older, 26,7% completed matric, and 7,7% have some form of

	higher education. The percentage of those aged 20 years and older with no form of schooling is 11,8% (Stats SA, 2011).
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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 ✓
Is the activity a public amenity?	YES ✓
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	Eskom undertakes an open tendering process to employ suitable contractors to carry out the construction phase of the development. Contractors are required to employ local unskilled labourers for non-specialized work
What is the expected value of the employment opportunities during the development and construction phase?	This can only be established once the contractor is appointed
What percentage of this will accrue to previously disadvantaged individuals?	+80%
How many permanent new employment opportunities will be created during the operational phase of the activity?	None. Eskom will maintain the power line once constructed
What is the expected current value of the employment opportunities during the first 10 years?	Nil
What percentage of this will accrue to previously disadvantaged individuals?	Nil

9. BIODIVERSITY

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

Please refer to Appendix D4 and D5 for the Vegetation and Fauna Specialist Report respectively

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

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

- b) Indicate and describe the habitat condition on site

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	60%	The entire servitude within which the tower footing will be constructed is located within two regional vegetation types, namely Eastern Highveld Grassland in the northern half of the servitude and Soweto Highveld Grassland in the southern half of the servitude (See Appendix A2)
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)	%40	The site is dominant of cultivated land due to the farming practices that occur along the route. The route also traverses numerous farm portions, Hence, transformation of the area.

- 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 ✓		NO ✓

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

Vegetation

The vegetation types (Mucina & Rutherford 2006) that are represented along the transect of the powerline. These are:

- The Eastern Highveld Grassland in the north and
- The Soweto Highveld Grassland in the south.

Both these vegetation types are listed as Endangered based on their current conservation status (Mucina & Rutherford, 2006) or Vulnerable by the National Biodiversity Assessment (SANBI, 2011).

Although a number of pylons occur within grasslands, shifting of these pylons to alternative sites is not proposed. The footprint of each pylon is relatively small and the overall disturbance due to each pylon is not considered to be excessive. Evidence from various localities on the Highveld indicates that the existence of the powerline favours the persistence of grassland. Operational management measures associated with the servitude of the powerline may, under certain circumstances, have a positive impact on grassland composition and diversity.

Six plant communities (ecosystems, mapping units) were identified along the transect, namely:

- Spruit and Wetland vegetation
- Moist Grassland
- Grassland on Dolerite
- Disturbed Grassland
- Transformed areas
- Agriculture areas

Eight plant species of conservation concern were previously recorded from the grids 2628BB, 2629 AC and 2629 CA, listed by SANBI. Two of these were recorded on the study site during the field survey, namely *Boophone disticha* and *Crinum bulbispermum*. It is however possible that all the above species are present in the general area, but less probable within the narrow servitude of the powerline. There is suitable habitat on the site for all these species. (An exception is *Nerine gracilis*, which is probably not present in the Eskom servitude). The Declining species (*Crinum bulbispermum* and *Boophone disticha*) has not yet reached a threshold of concern and therefore limited loss of habitat may be permitted. (Driver *et al.*, 2009). No Nationally Protected trees (National Forests Act 1998) or NEMBA plant species (Government Notice No. 2007, National Environmental Management: Biodiversity Act, 2004) occur within the area. No further plant provincially protected by the Mpumalanga Nature Conservation Act, 1998 (Act No. 10 of 1998), were recorded during the survey.

The significance of the impact of the proposed power line on the natural indigenous grassland vegetation will be low to medium, as the only areas to be disturbed are the footprints of the pylons. The chances that protected, rare or red data plant species will be lost or affected are very small and highly improbable. It is usually found that natural grassland vegetation and therefore the plant species are well protected within Eskom's servitude, under the power lines, as this area is excluded from other developments that can destroy the vegetation. The impact of the proposed power line on the vegetation of the area is considered to be quite low, especially if mitigation measures are implemented ([See Appendix J4 for Eskom's vegetation management](#)).

Wetland

The study area falls within the Olifants River (Catchment B) and Vaal River (Catchment C) Primary Catchments (See Appendix A3). The main river in the northern section of the site is the Wilge River along with the Kromdraai Spruit and the Riet Spruit. All these watercourses drain primarily northwards towards the Olifants River. Several non-perennial streams and drainage lines also occur throughout the area, draining towards the main rivers. The southern section of the site drains towards the Vaal River and the main tributaries are the Waterval River, The Klip Spruit and the Boesman Spruit. The main drainage direction is southeast towards the Vaal River. It has been determined that 5 types of watercourses; Channelled Valley Bottom wetlands; Floodplains, Un-channelled Valley Bottom wetlands; Hillslope seepage wetlands; and Pans (depressions) occur along the Bravo 4 Line route and may subsequently be affected by the tower footings (Please refer to Appendix J1 for a list of affected towers).

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Die Beeld(National) & Witbank News (Regional)	
Date published	22 April 2016	
Site notice position	Latitude	Longitude
	26 34 06.31 S	29 05 28.57 E
	26 39 58.25 S	29 11 08.90 E
	26 41 30.72 S	29 04 13.20 E
	26 33 39.15 S	29 04 13.20 E
	26 41 56.99 S	29 05 30.93 E
	26 38 57.90 S	29 02 22.85 E
	26 34 10.68 S	29 01 43.65 E
	26 36 25.80 S	29 03 20.23 E
	26 21 56.84 S	28 55 50.36 E
	26 17 43.85 S	28 00 36.18 E
	26 04 52.26 S	28 58 25.58 E
	26 06 02.28 S	28 57 27.50 E
	26 06 12.57 S	28 58 20.65 E
26 06 27.22 S	28 58 54.35 E	
26 22 16.75 S	28 55 03.63 E	
Date placed	22 April 2016	

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

Site notices (English and Afrikaans) were placed on 22 April 2016 at the coordinate points provided above. A copy of the advertisement provided in [Appendix E1](#) was placed on 22 April 2016 in Die Beeld and The Witbank News newspapers. Proof of the site notice placement and advertisement is provided in [Appendix E1](#).

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN 982.

The Methodology that has been adopted to ensure a highly consultative and interactive public participation process is outlined below.

Identification of Interested and Affected Parties (I&APs)

The interested and affected parties (I&APs) in and around the study area have been identified and a dedicated stakeholder database for the project has been developed. The stakeholder database has been split in two, i.e. one for the landowners and the other for the various I&APs, NGOs, Government departments, etc. A dedicated stakeholder database for the project is fundamental to the ultimate success of the consultation process.

The proposed project and its BAR processes were announced in the study area in the following ways:

Media Announcements

An English newspaper advertisement was compiled and placed in Die Beeld on 22 April 2016 and an Afrikaans newspaper advertisement was placed in the Witbank News to inform stakeholders about the proposed project and inviting them to participate and register as interested and affected parties ([Please refer Appendix E1](#)).

Land Owner Notification Letters

Letters to land owners introduced the project provided the rationale for the project, the BAR and public participation processes to be followed in the project, etc. The information was available in English and Afrikaans. ([Please refer Appendix E2 for Letters & Distribution List](#)).

Notice boards

English and Afrikaans site notices were fixed at various conspicuous areas along the Power Line route ([Please refer Appendix E1 for Proof of Site Notices](#)).

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN

982

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
Mr Brent Parrott	Landowner	082 410 0305
Mr Christie Truter	Landowner	082 490 1504
Mr John Cameron	Landowner	082 824 7684
Mr Hendrik Prinsloo	Landowner	082 891 0340
Mrs Sunet Oosterhuis	Landowner	082 410 0305
Please refer to Appendix E5 for the complete IA&P Database		

Include proof that the key stakeholder received written notification of the proposed activities as

Appendix E2. This proof may include any of the following:

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

Please refer to Appendix E2

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
No Comments/issues were received. Please refer to Appendix E3 and E6	

4. COMMENTS AND RESPONSE REPORT

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

Please refer to Appendix E3

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address
Victor Khanya (Delmas) Local Municipality	Mr MJ Mahlangu	(013) 665 6000	(013) 665 2913	palesam@victorkhanyelm.gov.za	P O Box 6 Delmas 2210
eMalahleni Local Municipality	Mr TJ Van Vuuren	(013) 690 6208	(011) 690 6479	admin@emalahleni.gov.za	P O Box 3 Witbank 1035

Govan Mbeki Local Municipality	Mr MF Mahlangu	(017) 620 6000	(017) 634 8019	office.mm@govanmbeki.gov.za	Private Bag X1017 Secunda 2302
Nkangala District Municipality	Mr Charles Makola	(013) 249 2000	(013) 249 2087	nkosimm@nkangaladm.org.za	P O Box 437 Middelburg 1050
Gert Sibande District Municipality	Mr Mbuleleni Ngcobo	(017) 620 3000	(017) 631 1607	marinda@gsibande.gov.za	P O Box 550 Secunda 2302

Include proof that the Authorities and Organs of State received written notification of the proposed activities as appendix E4. **Please refer to Appendix E4.**

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

6. CONSULTATION WITH OTHER STAKEHOLDERS

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

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

A list of registered I&APs must be included as appendix E5. **Please refer to Appendix E5.**

Copies of any correspondence and minutes of any meetings held must be included in Appendix E6. **Please refer to Appendix E6**

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 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.

Impacts Associated with Kendal – Kusile – Zeus Power Line			
CONSTRUCTION PHASE			
Activity	Impact summary	Significance (after mitigation)	Proposed mitigation
<i>Ecological Impacts: Soil erosion, sedimentation of drainage systems and degradation of wetland areas</i>	Direct impacts: Construction activities (i.e. excavations and vegetation clearing) expose soil to environmental factors including rainfall and wind which can lead to the removal of topsoil resulting in soil erosion and the deposition of sediment along the banks and into surrounding watercourses. Sedimentation poses a risk to the geomorphological/functional integrity of these systems.	Moderate	<ul style="list-style-type: none"> • Where possible the pylon must be constructed outside of drainage channels or at their narrowest point; • Use existing tracks and roads to gain access to the work servitude as much as possible; • In the event of infilling, replacement of subsoil must precede the topsoil replacement, and all material must be well compacted; • No stockpiling of any materials may take place within or directly adjacent to the channel systems; • Erosion control measures must be implemented in areas sensitive to erosion such as near water supply points, edges of slopes, etc. These measures include but are not limited to - the use of sand bags, geotextiles such as soil cells which are used in the protection of slopes, hessian sheets, silt fences and retention or replacement of vegetation;
	Indirect impacts: Changes made to the bed or banks of watercourse channels will cause unstable channel conditions causing erosion, meandering, increased potential for flooding and movement of bed material, which will result in	Moderate	

	property damage adjacent to and downstream of the construction site.		<ul style="list-style-type: none"> • Install sediment barriers across the entire construction right of way at all watercourse where necessary to prevent sediment flow into the channels; • Disturbed sites must be rehabilitated as soon as construction in an area is complete or near complete and not left until the end of the project to be rehabilitated; • Vegetation clearing within 50m of any channel must only be undertaken when construction activity is actually being undertaken at this point and such areas must be rehabilitated within 2 weeks of initial clearing occurring. Vegetation clearing must be limited to the servitude width required for the power lines; • There shall be no mining of soil/sand required for construction purposes from the banks of drainage channels and wetland areas. Soil must be brought in, if needed, for construction purposes. This must also be stockpiled away from the watercourses' and wetland's edge.
	Cumulative impacts: sedimentation of watercourses is destructive to many faunal species affecting their habitat; breeding and feeding cycles. Deposition of sediment also results in an unstable watercourse substrate which will lead to erosion of the bed of the channel.	Moderate	
<i>Ecological Impacts: Pollution of watercourses and soil</i>	Direct impacts: Mismanagement of waste and pollutants like hydrocarbons, construction waste and other hazardous chemicals will result in these substances entering and polluting sensitive natural environments either directly through surface runoff during rainfall events, or subsurface water movement.	Very Low	<ul style="list-style-type: none"> • All waste generated during construction is to be disposed of as per the Environmental Management Programme and no washing of paint brushes, containers, wheelbarrows, spades, picks or any other equipment adjacent or in drainage channel is permitted. • Proper management and disposal of construction waste must occur during the lifespan of the project, including during maintenance of the power lines and substations. • No release of any substance i.e. cement, oil, that could be toxic to fauna or faunal habitats within the watercourses. • Portable toilets must be placed 30m away from the edge of the channels. • Do not locate the construction camp or any depot for any substance which causes or is likely to cause pollution within a distance of 50m from a channel. • Spillages of fuels, oils and other potentially harmful chemicals must be cleaned up immediately and contaminants properly drained and disposed of using proper solid/hazardous waste facilities (not to be disposed of within the natural environment). Any contaminated soil must be removed and the affected area rehabilitated immediately – consult with a wetland/aquatic specialist if spills occur.
	Indirect impacts: Pollution and reduction of water quality which will have an impact on the faunal and floral communities.	Very Low	
	Cumulative impacts: An increase in pollutants will lead to a decline in the water quality of the watercourses	Very Low	
<i>Ecological Impacts: Proliferation of Alien invasive species</i>	Direct impacts: Alien invasive species will quickly encroach into disturbed areas, particularly adjacent to drainage areas. Alien species generally out-compete indigenous species for water, light, space and nutrients as they are adaptable to changing conditions and are able to easily invade a wide range of ecological niches (Bromilow, 2010).	Moderate	<ul style="list-style-type: none"> • An alien invasive management programme must be incorporated into the Environmental Management Programme; • Ongoing alien plant control must be undertaken along the power line servitude route; • Areas which have been disturbed will be quickly colonised by invasive alien species. An ongoing management plan must be implemented for the clearing/eradication of alien species. • Monitor all sites disturbed by construction activities for colonisation by exotics or invasive plants and control these as they emerge.
	Indirect impacts: Change in species diversity.	Moderate	

	Cumulative impacts: Alien invader plant species pose an ecological threat as they alter habitat structure, lower biodiversity (both number and “quality” of species), change nutrient cycling and productivity, and modify food webs (Zedler, 2004).	Moderate	<ul style="list-style-type: none"> •
<i>Ecological Impacts: Loss of indigenous vegetation due to clearing of the footprint area</i>	Direct impacts: Vegetation clearance the removal of vegetation in the areas of the pylon footings. This will result in the loss of indigenous species, disturbance of species of conservation concern and the fragmentation of vegetation communities. The Eastern Highveld Grassland in the northern half of the servitude and Soweto Highveld Grassland in the southern half of the servitude are both regional vegetation types that are listed as Endangered. From pylon KeZe94 to KeZe134 and from pylon KeZe164 to KeZe172, remaining patches of grassland are shown in the Mpumalanga Biodiversity Conservation Plan to be Highly Significant. Grass patches are therefore considered to be potentially of significant conservation value and all steps should be taken to minimise impacts on grassland. The removal of vegetation will also expose soil increasing the risk of erosion.	Low	<ul style="list-style-type: none"> • Once pegged, the site must be inspected during the summer season by a botanist to identify all species of conservation concern. These species must be translocated prior to any construction activities; • Disturbed areas must be rehabilitated immediately after construction has been completed in that area by planting appropriate indigenous plant species; • The clearing of vegetation must be kept to a minimum and within the power line servitude; • During the construction phase workers must be limited to areas under construction and access to the undeveloped areas must be strictly controlled; • Rehabilitated areas must be monitored to ensure the establishment of re-vegetated areas. •
	Indirect impacts: Loss of indigenous vegetation.	Low	
	Cumulative impacts: Habitat fragmentation.	Low	
<i>Ecological Impacts: Loss of faunal habitat and ecological structure</i>	Direct impacts: The physical structure of the development will not detract from optimizing habitat maintenance. The management of the servitude of the Bravo 4 Powerline may, however, result in negligible loss of pristine mammal, reptile and amphibian habitats, but this is counterbalanced by seasonal lush grass cover	Moderate	<ul style="list-style-type: none"> • None other than the standard precautionary measures incorporated in Eskom best-practice development protocol along a servitude. • It is strongly recommended that alien weeds are actively removed / destroyed. • It is suggested to leave cut grass in situ. This will ameliorate the habitat alteration by cutting a high stand of grass, will not detract from the maintenance of a seed bank, and will combat erosion.

	<p>that are irregularly mowed to reduce the intensity of fires. It would appear that cut grass are left <i>in situ</i>, which will enhance the build-up of the surface detritus layer. Preservation of vegetation generally affects nutrient cycles, built-up of the organic litter layer and mostly results in habitat refuges.</p> <p>The minimal loss of habitat due to development can be reversed with human intervention. However, leaving ecological succession to its own device will mostly result to lush basal cover. No irreplaceable loss of resources is anticipated. Mitigation the impacts is standard procedure for ESKOM developments.</p>		<ul style="list-style-type: none"> • ESKOM modus operandus for storm water management will suffice.
	<p>Indirect impacts: Loss of species diversity.</p>	<p>Moderate</p>	
	<p>Cumulative impacts: Limited impact on ecological diversity in the vicinity.</p>	<p>Low (operational also low)</p>	
<p><i>Ecological Impacts: Direct faunal impacts</i></p>	<p>Direct impacts: An ESKOM powerline is an imposing structure. However, its effect on terrestrial vertebrate species is limited to the collective surface area of four feet and anchor points typical of the more common towers (see the image on the cover page). This impact is no more than that of rocks or termitaria that may be present in the vicinity. The majority of mammals and all herpetofauna are terrestrial, and as such they are NOT prone to collisions or electrocution. Bats are indeed volant but they seldom hawk for prey at the average height of a powerline (30 meters) and have highly echolocation capabilities to navigate and avoid obstacles. The development can be reversed with human intervention, and recovered materials can be recycled. No irreplaceable loss or even reduction of ecological resources is anticipated.</p>	<p>Moderate</p>	<ul style="list-style-type: none"> • A powerline per se is deemed harmless to terrestrial vertebrates, but the servitude will have an effect. • It must be noted that an ESKOM servitude act as a valuable conservation asset, such as inter alia a seedbank and often as prime habitat. • A powerline is normally reached by way of an access dirt tract along the servitude. It is important that this asset is managed to not cause erosion. • Woody plants are generally removed to reduce the impact of ‘hot’ fires. Since fires represent a catastrophic event for terrestrial vertebrates, this modus operandus is considered as positive. • Mature stands of grass develop and serve as excellent refuge and nourishment. However mature stands of grass are mowed to reduce the impact of accidental fires and this deprive most terrestrial vertebrates of refuge and nourishment. This cannot realistically be mitigated and must thus be left to the devices of ecological processes.

	Mitigation the impacts is standard procedure for ESKOM developments.		
	Indirect impacts: Loss of species diversity.	Moderate	
	Cumulative impacts: Movement of species from one area into another.	Low	
<i>Ecological Impacts: Disturbance-noise pollution</i>	<p>Direct impacts: Disturbance created by noise-pollution associated with workers and construction activities can affect local wildlife utilising adjacent habitats, particularly mammalian species. This is likely to be short-lived during the construction phase but will continue to have an impact during the operational life span of the development.</p> <p>During the construction phase is anticipated to be of moderate significance. Species are particularly sensitive to disturbance during the breeding season and this must be borne in mind during both the construction and operational phases.</p>	Moderate	<ul style="list-style-type: none"> • Strict control must be maintained over all activities during construction, in line with an approved Construction EMPr. • Any Red Data species identified in this report observed to be roosting and/or breeding in the vicinity, the ECO must be notified.
	Indirect impacts: Loss of species diversity.	Moderate	
	Cumulative impacts: Movement of species from one area into another.	Low	
<i>Avifaunal Impacts: Habitat Loss</i>	<p>Direct impacts: Avian habitats will be lost in the areas cleared for the construction of the ~350 towers involved in this project. Whereas the individual footprint of each tower is small, the cumulative impact of the area cleared for power lines can be significant. In the case of the Bravo 4 line, this impact is made less severe by the fact that lines run immediately adjacent to existing lines, and therefore the area cleared will at worst involve the widening of existing servitudes. Additional habitat loss may occur during the construction phase, because of areas cleared for the construction of the towers and lines, new access roads, and clearing vegetation from the servitude under the line</p>	Low	<ul style="list-style-type: none"> • Minimise areas cleared for towers, construction activities and access roads, and as far as possible use existing roads • Restrict construction activities to area directly below power line • Minimise width of servitude cleared for power line • Ensure that no towers are placed in habitat potentially suitable for African Grass-owl
	Indirect impacts: None		

	Cumulative impacts: further loss of natural habitat in an area that is already heavily transformed	Low	
<i>Avifaunal Impacts: Disturbance</i>	Direct impacts: The presence of vehicles and personnel during construction will create disturbance for birds along the route of the proposed line. This disturbance will be most likely manifested through increased stress levels modulated by the avian stress hormone corticosterone, with consequences for breeding success, immune function and foraging. Further disturbance will occur during the operational phase as a consequence of routine maintenance, but the magnitude of this impact will be lower than during the construction phase.	Low	<ul style="list-style-type: none"> • Construction of the proposed power line should take place during winter, outside the breeding season of most birds and when migrants are absent. • Construction workers must be instructed to minimise disturbance of birds at all times. • Illegal hunting of birds must be strictly prevented • During construction, any threatened species breeding along the route should be identified by the Environmental Control Officer, and the author of this report contacted for advice on how to proceed. • All construction and maintenance should take place as per Eskom Transmission's environmental best practice standards. •
	Indirect impacts: None		
	Cumulative impacts: Construction activities, and to a lesser extent maintenance activities thereafter, will increase overall levels of human disturbance along the power line route.	Low	
<i>Avifaunal Impacts: Collisions</i>	Direct impacts: Avian mortalities and injuries as a result of birds colliding with power lines while in flight.	Low	<ul style="list-style-type: none"> • Wherever possible, the new power line should be placed as close to the existing lines as possible, so as to minimise the spatial extent of the collision risk • Bird flight diverters should be fitted to the line in areas where the risk of collision is considered significant. Specifically, "Bird flappers" or double-loop flight diverters developed by the Eskom / Endangered Wildlife Trust (EWT) Strategic Partnership should be fitted to the line during initial construction. These devices must be attached to the centre 60% of the line between each pair of pylons, with the flappers 5 m apart in a staggered configuration. • Spans requiring flight diverters should identified at the start of the construction phase by engaging a suitable ornithologist to accompany Eskom staff along the entire route. At this stage, spans that can be identified as requiring flight diverters on the basis of satellite imagery are listed in Table 5b, Appendix D3.
	Indirect impacts: None		
	Cumulative impacts: Collisions caused by power lines have had devastating impacts on the populations of a number of threatened bird species, and it is critical that this impact of the new Bravo 4 line be mitigated to the greatest extent possible.	Low	
<i>Avifaunal Impacts: Electrocutation</i>	Direct impacts: Avian mortalities and injuries as a result of birds creating short circuits between	Low	<ul style="list-style-type: none"> •

	live wires, or between live wire and tower. Risk generally low for 400 kV lines.		<ul style="list-style-type: none"> • Electrocutions are extremely unlikely on 400 kV towers. However, in the interests of preventing short circuits caused by excreta, it is recommended that standard Eskom Bird Guards be fitted to all towers in the vicinity of water. •
	Indirect impacts: None		
	Cumulative impacts: Electrocutions are unlikely to be a cause of avian mortality	Low	
<i>Avifaunal Impacts: Electromagnetic fields</i>	Direct impacts: There is some evidence that the electromagnetic fields generated by power lines have negative effects on avian breeding, as well as the ability of migrants to navigate	Low	<ul style="list-style-type: none"> • None necessary beyond installation of insulators and shielding following Eskom's standard guidelines for best practise. •
	Indirect impacts: None		
	Cumulative impacts: Will contribute to widespread EMFs generated by electrical infrastructure. Evidence of negative impacts is limited.	Low	
<i>Heritage Impacts: Archaeological Artifacts</i>	Direct impacts: It has been determined that only a very few sites, features or objects of cultural significance dating to the historic period occur sporadically all over the region. Only six sites of cultural significance have been identified to be less than 70m from a proposed tower position and only one of these fall within the As these features are all visible, it would be easy to avoid them in the unlikely change that some would occur near the power line route or within the proposed substation site.	Low	<ul style="list-style-type: none"> • Should archaeological sites or graves be exposed during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made. •
	Indirect impacts: None		
	Cumulative impacts: None		
<i>Dust Impacts</i>	Direct impacts: Construction machinery and heavy vehicles which are likely to make use of the existing farm roads to transport equipment and material to the construction site, are likely to generate dust which is likely to be perceptible by adjacent residents. Trucks may potentially distribute dust along internal access roads	Low	<ul style="list-style-type: none"> • Continuous watering of the site should be carried out to prevent dust pollution during windy and dry conditions. • A continuous dust monitoring process needs to be undertaken during construction. • Speed restriction of 20km/h must be implemented for all construction vehicles. • All vehicles transporting friable materials such a sand, rubble etc must be covered by a tarpaulin or wet down. • Construction work to be undertaken during weekdays as far as practical.

	Indirect impacts: None identified.	N/A	
	Cumulative impacts: None identified.	N/A	
<i>Noise Impacts</i>	Direct impacts: Vehicles transporting materials to and from the site will potentially cause an additional noise burden to adjacent residents as well as along internal access roads.	Moderate	<ul style="list-style-type: none"> The contractor must ensure that noise levels remain within acceptable limits Construction activities must be limited to normal working hours and according to municipal bylaws, i.e. working hours must be limited to weekdays as far as possible. If construction is required on the weekend; permission from adjacent landowners will be required prior to construction.
	Indirect impacts: None identified	N/A	
	Cumulative impacts: None identified	N/A	
<i>Impacts on traffic and local roads</i>	Direct impacts: Traffic will be congested as a result of construction activities. In addition, traffic increase can lead to road damage, erosion, accidents and even traffic delays Construction machinery and heavy vehicles are likely to generate dust which is likely to be perceptible by adjacent residents. Trucks may potentially distribute dust along internal access roads.	Moderate	<ul style="list-style-type: none"> Vehicular movement beyond the property boundaries may not occur during peak hour traffic times (07h30 – 08h30 and 16h00 – 17h00). It must be ensured that a backlog of traffic does not develop at the access points during peak hours through the upgrade to the road system and the implementation of an efficient and effective access control system. Speed restriction of 20km/h must be implemented for all construction vehicles. Implement dust suppression measures (wetting or application of soil binding compound) in all areas that will be affected by construction activities and where dust will be generated
	Indirect impacts: None identified	N/A	
	Cumulative impacts: None identified	N/A	
<i>Impact on socio-economics</i>	Direct impacts: Impact on nearby residential areas - Influx of workers in the area may raise concerns from neighbouring residents	Moderate	<ul style="list-style-type: none"> All adjacent landowners must be informed of the construction processes prior to commencement of construction activities. Adjacent land owners must be informed timeously of any service stoppages in their areas. Notification must include possible timeframes for stoppages. Consequences of such stoppages must be clearly indicated to all surrounding/affected land owners. Affected land owners must be timeously informed of any/all maintenance of the bulk water services supply which may result in service stoppages to their properties. Again this must include possible timeframes so alternatives can be provided.
	Indirect impacts: None identified	N/A	
	Cumulative impacts: None identified	N/A	
OPERATIONAL PHASE			
Activity	Impact summary	Significance (after mitigation)	Proposed mitigation

<i>Hardening of surface(access roads)</i>	Direct impacts: <i>Compaction of soils and erosion</i>	High	<ul style="list-style-type: none"> Regular checks and maintenance of servitude, keep access road as informal as possible and use existing roads as far as possible to limit construction of new roads
	Indirect impacts: Loss of indigenous vegetation.	Moderate	
	Cumulative impacts: <i>Preferential flow paths</i>	Moderate	
<i>Ecological Impact:: Proliferation of Alien [Plant] Species</i>	Direct impacts: Alien invasive species will quickly encroach into disturbed areas, particularly adjacent to drainage areas.	Low	<ul style="list-style-type: none"> An alien invasive management programme must be incorporated into the Environmental Management Programme (see appendix J4); Ongoing alien plant control must be undertaken along the power line servitude route; Areas which have been disturbed will be quickly colonised by invasive alien species. An ongoing management plan must be implemented for the clearing/eradication of alien species. Monitor all sites disturbed by construction activities for colonisation by exotics or invasive plants and control these as they emerge. Annual checks of invasive vegetation, to be controlled and removed before seeding
	Indirect impacts: Loss of indigenous vegetation.	Low	
	Cumulative impacts: Habitat fragmentation	Low	
<i>Avifaunal impacts during the operational phase (Power lines)</i>	Direct impacts: Electrocutation of birds on associated overhead power lines is an important cause of mortality for a variety of bird species particularly storks, cranes and raptors in South Africa. The impact assessment found the impact of electrocution to be of moderate significance after the mitigation in the form of bird friendly structures.	Moderate	<ul style="list-style-type: none"> All relevant perching surfaces should be fitted with bird guards and perch guards as deterrents A "Bird Friendly" monopole structure, with a bird perch (as per standard Eskom guidelines) should be used for the tower structures.
	Indirect impacts: Effect on nesting birds outside the vicinity of the site.	Low	
	Cumulative impacts: Moderate as there is a high level of existing disturbance in the vicinity.	Low	
DECOMMISSIONING PHASE			
Decommissioning and closure phase has not been considered as part of this application as the end use of the site and required decommissioning activities are not known at this time; it is therefore not possible to predict the potential environmental impacts. If decommissioning phase is considered in future, the developer will undertake the required actions as prescribed by the legislation at the time and comply with all relevant requirements administered by any relevant authority and competent authority at that time			

A complete impact assessment in terms of Regulation 19(3) of GN 982 must be included as Appendix F. [Please refer to Appendix F.](#)

2. ENVIRONMENTAL IMPACT STATEMENT

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

The proposed activities assessed within this Basic Assessment Report are required to provide essential information associated with the tower footings that may impact on the relevant watercourse crossing of the Kendal – Kusile - Zeus lines. In summary, the Basic Assessment has assessed potential impacts and identified appropriate management and mitigation measures. No environmental fatal flaws and no significant negative impacts have been identified to be associated with the tower footings and the relevant watercourse crossings. The Impact Assessment section of this report indicates that the identified environmental impacts associated can be effectively mitigated to have a low significance impact rating provided the recommended mitigation and management measures are implemented.

There are no Negative Impacts pre or post mitigation which should warrant the project from not proceeding or should warrant further specialist investigation. The potential negative environmental impacts associated with the development are mainly associated with the construction phase of this project and these include

- Soil erosion, sedimentation of drainage systems and degradation of wetland areas
- Pollution of watercourses and soil
- Proliferation of Alien invasive species
- Loss of indigenous vegetation due to clearing of the footprint area
- Loss of faunal habitat and ecological structure
- Direct impact on terrestrial vertebrate communities
- Avifaunal Impacts: Habitat Loss, Disturbance, Collisions, Electrocutation, Electromagnetic Fields
- Dust and Noise Pollution

These impacts are typical of construction activities and as such can easily be managed through the implementation of the mitigation measures contained in the Environmental Management Programme in [Appendix G](#).

According to the wetland specialist towers Ku-Ze 182 and Ke-Ze 125 are located within a permanently wet wetland area and must be reassessed by a design engineer on the basis of access during construction as well as from a wetland impact management point of view.

It is recommended especially that in areas where towers are inside wetland areas and cannot be relocated, that turbidity be monitored during construction using a hand held turbidity meter. Turbidity levels should not exceed pre activity turbidity levels by more than 25%. Post construction the site should be surveyed and checked for signs of erosion including bank collapse biennially thereafter until banks are well stabilized. Eroding areas should be mapped, reported and stabilized.

These towers were repositioned (Please refer to appendix J2 for the tower resource details) and a WULA (see appendix J5) was subsequently granted on the 19 November 2015.

Tower Positions:

Tower	Latitude	Longitude
Ke-Ze 125	26° 29' 44.72" S	29° 1' 13.52" E
Ku-Ze 182	26° 24' 20.65" S	29° 1' 29.21" E

The key impacts identified for operation phase include:

- Hardened of surface, risk to erosion and preferential flow paths due to road for maintenance within servitude.
- Increased alien invasive vegetation due to disturbed soils; and
- Avifaunal Impacts: Electrocutation

A number of mitigation and monitoring measures have been identified which would allow for the minimisation and management of potential environmental impacts associated with the proposed development, which have been incorporated into an EMPr for the project, which will be further developed during the detailed planning and construction phase of the project.

Alternative B

No alternatives have been considered as the area has previously been assessed by specialist in the EIA (2008). The line route has been approved. Environmental Authorisation has been acquired DEA reference no 12/12/20/1095

Alternative C

No-go alternative (compulsory)

By not taking any action, the status quo will remain the same exacerbating the shortage of electricity supply thus the no-go alternative is not preferred. Should Eskom rely on the existing network to supply future demand, it is highly likely that present supply will be compromised due to the increased load on the network. Authorisation has already been acquired for the transmission line which is associated with the tower footings that form part of this application(DEA Reference Number: 12/12/20/1095)

SECTION E. RECOMMENDATION OF PRACTITIONER

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

YES ✓

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

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

A number of mitigation and monitoring measures have been identified which would allow for the minimisation and management of potential environmental impacts associated with the proposed development. These have been incorporated into [Appendix G](#).

This Report has identified and assessed the potential impacts on the watercourse associated with the tower footings. It is therefore proposed that authorisation is granted.

The project will result in some unavoidable environmental impacts during construction but this is not a fatal flaw, the nature of the project, has been planned in such a way that the landscape will not be greatly altered and that there are minimal negative environmental impacts. None of these adverse impacts are considered unacceptably significant and all can be managed to acceptable levels through the effective implementation of the recommended mitigation measures. In addition, the project will provide benefits to the society. Based on the assumption that Eskom is committed to ensuring that the footings is constructed and effectively maintained and achieved through implementation of the recommended mitigation measures and on-going monitoring of performance, Envirolution believes through effective implementation of the stipulated mitigation measures, the adverse impacts can be reduced. Fortunately with our proposed mitigation measures, the DEA will agree that the project's benefits outweigh the potential negative impacts.

General Recommendations

We recommend that preferred route be approved with the following general recommendations:

1. Implementing the EMPr to guide construction and operational activities to provide a framework for the on-going assessment of environmental performance.
2. Have construction take place in the drier months and adhere strictly to the construction schedule in order to minimize the duration of impacts during the construction phase.
3. Ensure that all alterations to the drainage pathways and water course are kept to a minimum by implementing Recommendation 2.
4. Maximise the employment of local people and the procurement of local resources during the construction and operational phases to ensure maximum benefit to the provincial/local economy.
5. Implement the recommendations made in the specialist studies and EMPr.
6. The EMPr should form part of the contractor's tender documentation

From the impact assessment, it is evident that prior to mitigation, impacts associated with the proposed development are generally moderate. Thus, based on specialists' recommendations, it is the opinion the EAP that the project be considered favourably and environmental authorisation granted for the proposed activities, provided the essential and recommended mitigation measures as defined in this report are strictly adhered to.

Is an EMPr attached? YES ✓

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.

ANDRISHA GOVENDER
NAME OF EAP

SIGNATURE OF EAP

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information