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Eskom Holdings SOC Limited

ERMELO-RICHARDS BAY COAL LINK UPGRADE PROJECT: PROPOSED REBUILD OF THE 88KV POWER LINE FROM UITKOMS SUBSTATION TO ANTRA T-OFF, APPROXIMATELY 3.5KM IN LENGTH, MPUMALANGA PROVINCE, SOUTH AFRICA.

Final Basic Assessment Report

DEA Reference Number: 14/12/16/3/3/2/1105

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BASIC ASSESSMENT REPORT

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For:	SiVEST Environmental Division
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EXECUTIVE SUMMARY OF THE CONTENT OF THE BASIC ASSESSMENT REPORT

INTRODUCTION AND PROJECT DESCRIPTION:

The Applicant, Eskom Holdings (SOC) Ltd. is making an Application for Environmental Authorisation to rebuild the 88kV power line from Uitkoms Substation to Antra T-off, approximately 3.5km in length, Mpumalanga Province, in terms of the National Environmental Management Act, Act No. 107 of 1998 (as amended). This Application for Environmental Authorisation is being made to the Competent Authority, namely, the National Department of Environmental Affairs (DEA). The proposed development requires compliance with the Environmental Impact Assessment (EIA) Regulations of 2010 (as amended), promulgated in terms of the National Environmental Management Act (No. 107 of 1998) (NEMA).

SiVEST Environmental has been appointed by Eskom Holdings (SOC) Ltd (herein after referred to as the Applicant) to undertake a Basic Assessment Process for the above-mentioned project.

Background

The proposed Uitkoms power line is part of a suite of projects collectively known as the Ermelo-Richards Bay Coal link Upgrade.

Transnet is South Africa's sole provider of rail transport infrastructure for coal transportation. One of South Africa's largest foreign exchange earners is the export of high quality coal products to China. The Transnet rail link between the coal fields in Mpumalanga Province and the export node, the Richards' Bay Coal Terminal, is one of the busiest railway links in South Africa.

The increase in demand for South Africa's high quality coal necessitates the increase in production, which in turn has demands on the railway network infrastructure. In response to the increased demand for South Africa's coal in the global market place, Transnet needs to increase the volume of coal that is being transported between the Mpumalanga coal fields and the Richards' Bay Coal Terminal. This increase will be facilitated through capital expenditure on two fronts, the supporting infrastructure, i.e. the electrical network supplying the locomotives and the locomotives themselves.

In order for Transnet to accomplish the above they need to upgrade their power supply to their various traction substations between Ermelo and Richards Bay to facilitate the introduction of the new, larger locomotives that will be added to increase the volume of coal being transported and exported. Eskom Holdings (SOC) Ltd being one of the main suppliers of electrical energy in South Africa has been tasked by Transnet to supply the additional energy requirements to these traction substations. In trying to meet the task Eskom Holdings (SOC) Ltd requires environmental authorisation from the Department of Environmental Affairs (DEA) to establish new substations and power lines.

Proposed Development

Eskom proposes to rebuild a 3.5km long, 88kV Power line between the existing Uitkoms Substation and Antra T-off. The proposed power line will be rebuilt at 132kV capacity but operated at 88kV. The proposed development is situated in Southern Mpumalanga, approximately 160 kilometres South East of the town of Ermelo. The site falls within Msukaligwa Local Municipality. The proposed power line to be rebuilt originates east of the Camden Power Station and runs into a southern direction to terminate at cooling ponds on the south boundary of the Camden Power Station property. The power line to be rebuilt is situated on natural vacant and agricultural land.

The following construction strategies are proposed for the power line rebuild:

1. **Servitude Swap.** This will include:
 - Negotiating a new servitude within 250m of either side of the existing servitude with land owner/s (where possible);
 - Registering the new servitude;
 - Building a new line in the new negotiated servitude;
 - Energising the new line;
 - Dismantling the old line and rehabilitate the associated servitude; and
 - Handing over of the old servitude to land owner/s.

2. **Line Bypass.** This will include:
 - Building a line bypass within 25m of the existing servitude;
 - The bypass line should then span the entire length of the line that will be upgraded;
 - Dismantling of the old line;
 - Building a new line;
 - Energising the new line;
 - Dismantling the bypass line; and
 - Rehabilitating the temporary servitude (if needed).

3. **Line Section Bypass.** This will include:
 - Building a line section/s bypass within 25m of the existing servitude;
 - Bypassing line section/s will be limited to strain section/s of the line that will be upgraded;
 - Dismantling of the old line section/s;
 - Building the new line section/s;
 - Energising the new line section/s;
 - Dismantling the bypass line section/s;
 - Rehabilitating the temporary servitude (if needed); and
 - Proceeding to the next line section/s that needs to be upgraded.

4. **Servitude Widening.** This will include:
 - Widening the servitude by 25m

It is envisaged that any line rebuild may warrant a combination off all four construction strategies. It is therefore important to note that the environmental authorisation should not limit any of the above construction strategies. It is noted that all four construction strategies should not violate any environmental considerations / constraints within the 500m corridor. Such constraints can be managed via the detailed environmental management plan and policed by an environmental control office. These construction strategies will be informed by the public participation process and the land owner negotiations.

Where applicable the procedure for the recycling and rehabilitation of the dismantled line will be in line with the Eskom process.

The dismantled towers and line hardware will be stored at a local Eskom depot. All steel material and conductors will be removed by an accredited Eskom supplier and recycled. All non-ferrous material will be returned to the Eskom stores and disposed of from there by an accredited scrap dealer.

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The power lines will consist of a series of towers located approximately 200m apart, depending on the terrain and soil conditions. The proposed power line will be a total of 3.5km with a 32m servitude corridor. The structures to be used to support the overhead Power line will be steel monopole.

An access road for the length of the power line to be rebuilt needs to be formalised. The access road will be a single lane gravel road that will turn off west from the existing access road to the Camden Coal Fire Station and follow the proposed power line rebuild 3.5km south until terminating at the access road east of the cooling ponds. The exact position and type of road will be determined once the power line positions have been confirmed through the negotiation process.

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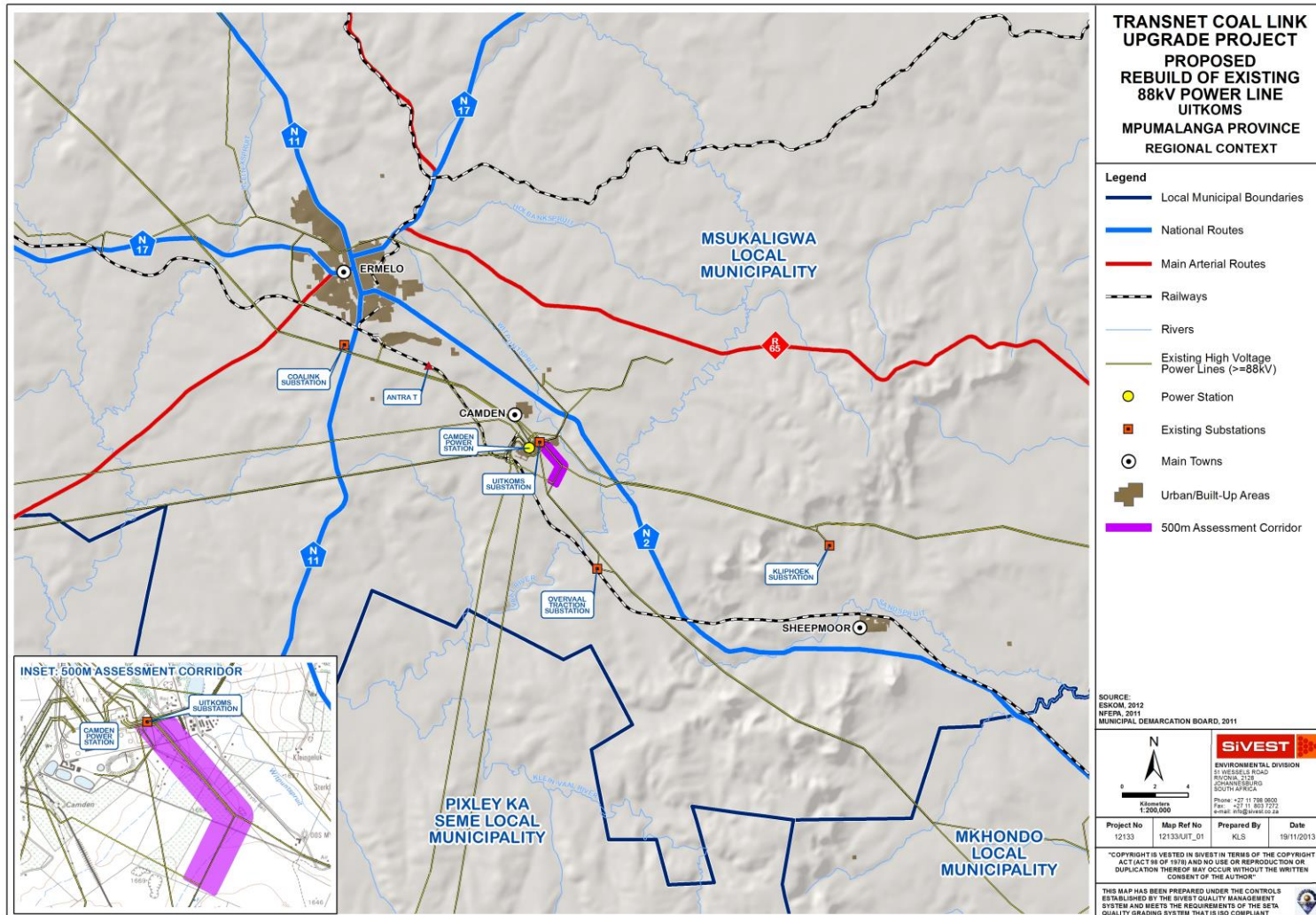


Figure 1: Site Locality Map

APPLICABILITY OF NEMA EIA REGULATIONS (2010):

The proposed development requires compliance with the Environmental Impact Assessment (EIA) Regulations of 2010 (as amended), promulgated in terms of the National Environmental Management Act, Act 107 of 1998, as amended. The proposed activity requires a Basic Assessment Process be undertaken as listed **Activities 10(i), 11(xi) and 18(i)** under **Government Notice No R. 544** as well as listed **Activities 4(a)ii.(cc)(ee), 12(b), 13(a)(c)ii.(cc), 14(a)i. and 16(iv)(a)(iii)(dd)(ff)** of **Government Notice No R. 546** of the EIA 2010 Regulations are triggered.

RECEIVING ENVIRONMENT:

The proposed development is situated in Southern Mpumalanga, approximately 15 kilometres South East of the town of Ermelo. The proposed power line would run in a south-easterly direction from the existing Uitkoms Substation to the Antra T-off with a total approximate length of 3.5km. The Power line would run through natural vacant and agricultural land.

The surrounding areas of the existing Uitkoms Substation are substantially altered with existing infrastructure and urban development (i.e. Camden Power Station and Coal mines). The proposed power line route traverses vacant land with some commercial cultivation occurring within the western and northern parts of the study area. Other than a few isolated farmsteads, the only human settlement within the study area is found within the town of Camden. Within the study area the natural short grassland cover has been partly removed or transformed by commercial cultivation, mining activities and urban development associated with the town of Camden and Camden Power Station. Additionally, human impact on the natural vegetation is also evident in the form of tall exotic trees scattered throughout the study area and in clusters surrounding farmsteads.

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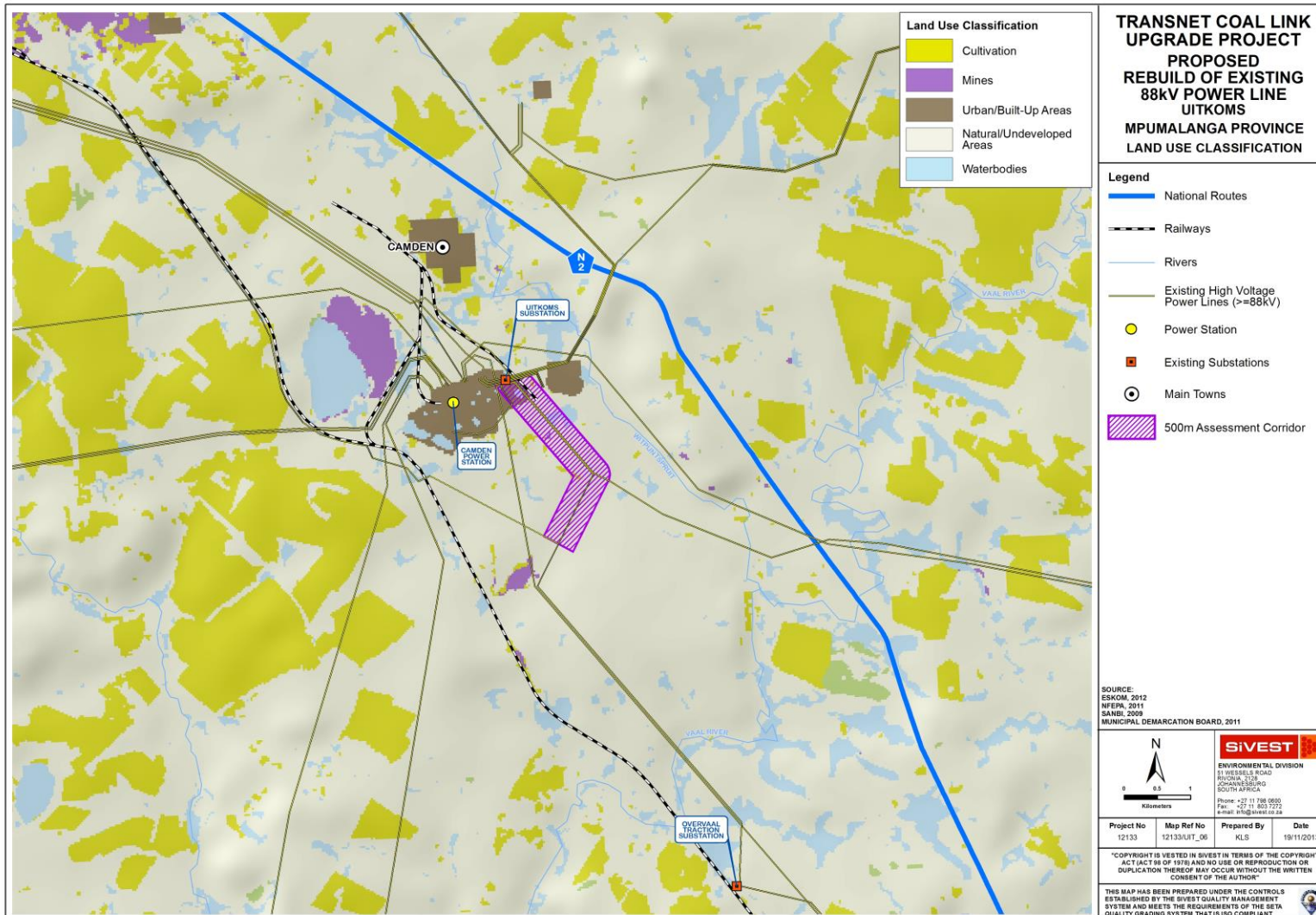


Figure 2: Land use

ALTERNATIVES:

Alternatives are defined in the NEMA EIA Regulations (2010) as “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; and (e) the operational aspects of the activity and (f) the option of not implementing the activity”.

For the purpose of this Application, all of the above Alternatives were investigated as indicated below:

IMPORTANT: Motivation for No Alternatives

The need for the proposed development is to supply additional energy to Eskom Holding’s (SOC) various traction substations between Ermelo and Richards Bay. Transnet requires additional energy and capacity to facilitate the introduction of the new, larger locomotives that will be added to increase the volume of coal being transported and exported.

This is necessary as the increase in demand for South Africa’s high quality coal necessitates the increase in production, which in turn has demands on the railway network infrastructure. In response to the increased demand for South Africa’s coal in the global market place, Transnet needs to increase the volume of coal that is being transported between the Mpumalanga coal fields and the Richard’s Bay Coal Terminal. This increase will be facilitated through capital expenditure on two fronts, the supporting infrastructure, i.e. the electrical network supplying the locomotives and the locomotives themselves. In order for Transnet to accomplish the above they need to upgrade their power supply to their various traction substations between Ermelo and Richards Bay to facilitate the increase demand for coal.

As per Chapter 1 of the EIA regulations (2010), feasible and reasonable alternatives are required to be considered during the BA process. Alternatives are defined as “different means of meeting the general purpose and requirements of the activity” These alternatives may include:

- 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.

Each of these alternative types are discussed in relation to the proposed project in the sections below.

The property on which or location where it is proposed to undertake the activity:

No site alternatives have been considered for this project as the placement of the proposed power line is dependent on a number of considerations, all of which have been identified as being favourable at the proposed site location. These considerations include the existing operational power lines in the area, grid connections, existing substations and access to the site. In addition, Transnet have identified traction substations and associated power lines that need to be upgraded in order to facilitate the high demand for coal exports which directly places increased demand on the countries energy supply.

Considering that the proposed development is a power line rebuild the proposed development site is the only feasible option as it is a minor section of the existing line that will be upgraded. The project site also has advantageous grid connection potential through the existing Uitkoms Substation and Antra T-off. The site is also easily accessible from the existing access road to the Camden Coal Fired Station.

The existing power line corridor is therefore considered highly suitable for the proposed development and no other locations or corridors are being considered. It must be noted that the 500m wide corridor forms part of the assessment of the proposed power line rebuild to allow for some manoeuvrability where required.

The type of activity to be undertaken:

No feasible and reasonable activity alternative exists therefore activity alternatives cannot be considered. This is due to the fact that the proposed activity is the rebuild of an existing power lines in order to meet the energy required by Transnet to increase their coal output. The proposed development is activity specific in that power lines are required to transmit and distribute electricity,

The design or layout of the activity:

Various environmental specialists have assessed the site within the 500m assessment corridor and have included the identification of sensitive areas. The identified sensitive areas will be used to guide the exact location of the power line rebuild in conjunction with, landowner negotiations and technical constraints. Additionally, there are various monopole tower types being considered for the proposed development. Each tower design type will have very little to no variation in environmental impacts between the different tower design types, as they will occupy relatively the same footprint size and have the same tower height. Additionally, the type of monopole towers to be used will be determined by technical constraints and ultimately determined by the engineers. Therefore no feasible or reasonable design or layout alternatives were assessed in this BA.

The technology to be used in the activity;

There are four (4) construction strategies being applied for in this BA. The technology options include a servitude swap; line bypass, line section bypass or a servitude widening. The choice of technology used will ultimately be determined by the land owner / servitude negotiations process and technological constraints at a later stage. As it is envisaged that any power line rebuild may warrant a combination off all four construction strategies based on the land owner / servitude negotiation process and technical constraints. It is therefore important to note that the environmental authorisation should not limit any of the above options. It is noted that all four construction strategies would need to be considered within the environmental considerations / constraints occurring within the 500m corridor. Such constraints can be managed via the site specific EMPr and implemented by an environmental control officer. The selection of the four construction strategies will be informed by the public participation process and the land owner negotiations. Therefore no technology alternatives were assessed as part of this BA.

The operational aspects of the activity; and

The proposed development is operationally specific in that the operation of power lines are required for the proposed development

The option of not implementing the activity.

The option of not implementing the activity, or **the 'no-go' alternative, has been considered in this BA.** The No-Go Alternative refers to the option of not implementing the proposed infrastructure development and ultimately the continuation of the current *status quo*. In order for Transnet to accomplish the increased demand for coal and the associated mining activities they need to upgrade their power supply to their various traction substations between Ermelo and Richards Bay. This will facilitate the introduction of the new, larger locomotives that will be added to increase the volume of coal being transported and exported. Should this development not proceed, this will result in the electricity demands not being met. This would be detrimental as South Africa is under immense pressure to provide electricity to meet the currently growing electricity demand in the country. Although

the potential environmental issues, such as habitat destruction, would not occur if the project did not go ahead, the socio economic benefit of the proposed project should not be overlooked. The project would assist in achieving South Africa's goals in terms of energy security which in turn would promote local economic development.

Conclusion:

Given the above motivation, no feasible and reasonable alternatives other than '(f) the option of not implementing the activity' could be proposed for assessment. However, a 500m corridor was provided to specialists for assessment. The reason being, that it is likely that the proposed power line may need to be shifted for the final route selection due to environmental, social and technical reasons. The "No-go" option has however been assessed, but due to the need of the proposed project this has been ruled out.

No-Go Alternative:

The No-Go Alternative refers to the option of not implementing the proposed infrastructure development and ultimately the continuation of the current *status quo*. However, should Eskom and Transnet not proceed with the development of the proposed Uitkoms power line, the necessary electrical input into the Transnet railway system will not be present. This will prevent Transnet from increasing the locomotive traffic between Richards Bay (KwaZulu-Natal) and Ermelo (Mpumalanga) and subsequently prevent increased coal transport to the Richards Bay harbour for export. The proposed project is part of a Strategic Infrastructure Plan, aimed at increasing the coal mining industry and economic profile of South Africa, with a total CAPEX value of over 1 billion Rand and an employment opportunity value of over 48 million Rand, 80% of which is to be allocated to previously disadvantaged individuals. The Coal Link Upgrade project is therefore a major economic undertaking from which South African citizens can benefit economically and financially.

Given the above motivation, no feasible and reasonable alternatives other than '(f) the option of not implementing the activity' could be proposed for assessment. However, a 500m corridor was provided to specialists for assessment. The reason being, that it is likely that the proposed power line may need to be shifted for the final route selection due to environmental, social and technical reasons. The "No-go" option has however been assessed, but due to the need of the proposed project this has been ruled out.

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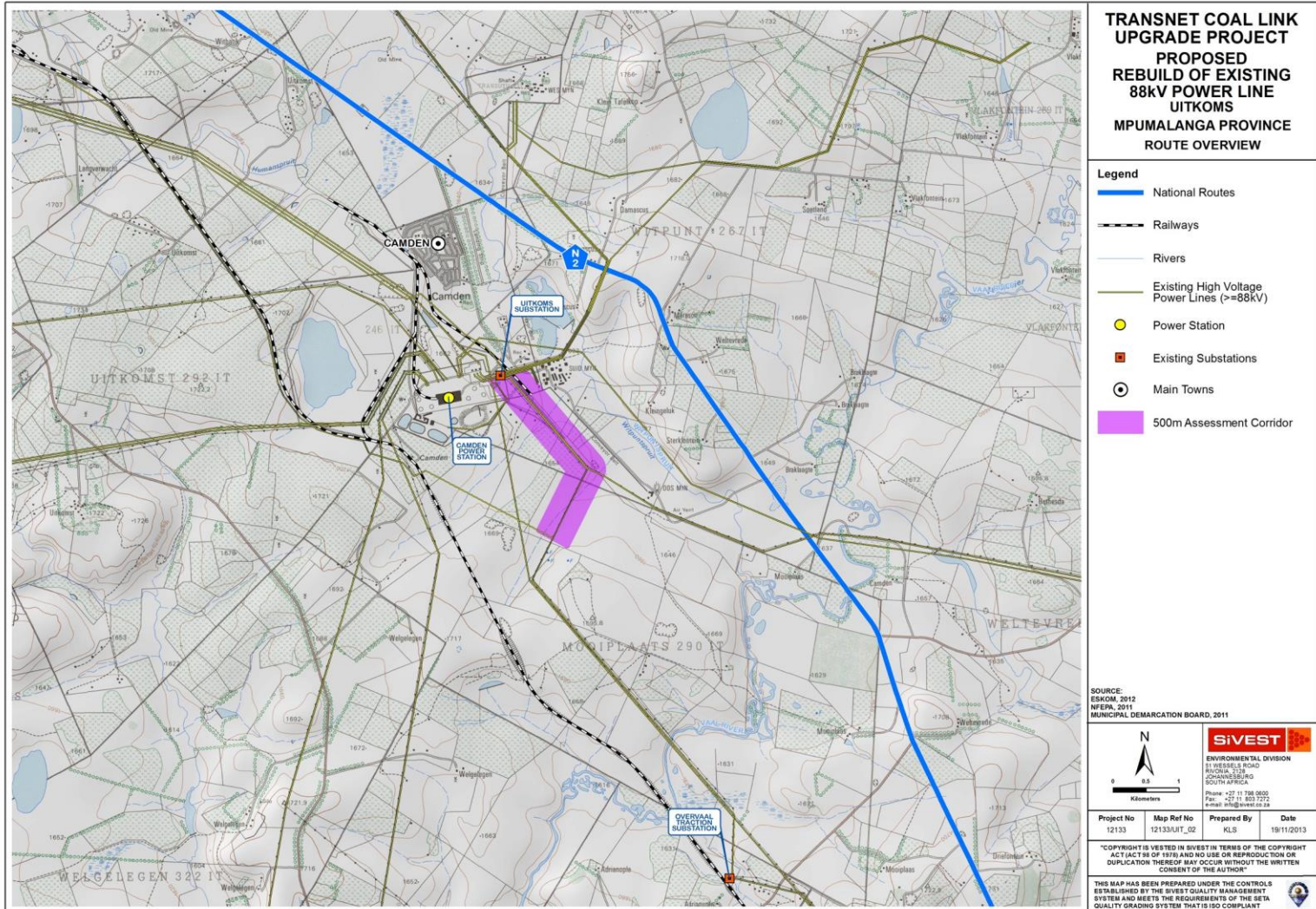


Figure 3: Route Overview

PUBLIC PARTICIPATION

A public participation process was undertaken in accordance with the NEMA EIA 2010 Regulations, as the BA was initiated prior to the EIA 2014 Regulations coming into effect, and in terms of the Department of Environmental Affairs Companion to the EIA Regulations 2010, Integrated Environmental Management Guideline Series 5, October 2012:

Initial and Draft BAR Notification

Interested and Affected Parties (I&AP's) were identified and provided with an opportunity to register their interest in the application process. The Draft Basic Assessment Report will be submitted for review and comment by any interested and affected parties.

The following parties were notified of the Basic Assessment Process and the availability of the Background Information Document (BID), Draft Basic Assessment Report (DBAR) and Environmental Management Programme (EMPr) for review and comment:

- Department of Environmental Affairs
- Mpumalanga Department of Economic Development, Environment and Tourism (MDEDET)
- Department of Water and Sanitation
- Department of Agriculture, Forestry and Fisheries
- Gert Sibande District Municipality
- Msukaligwa Local Municipality
- NGO and Ratepayers Association of the Area
- Adjacent landowners
- Ward Councillor of the area

In addition to this, newspaper advertisements will be published between the 23rd March 2015 – 3rd April 2015 in the Sowetan Newspaper, Ermelo Tribune, Zululand Observer and the Paulpietersburg Advertiser. Due to the high likelihood of overlapping stakeholders, all 8 Ermelo-Richards Bay Coal Link Upgrade projects were advertised together.

Additionally, site notices were placed on the site (along route alternatives and at the substation sites); and the BID, Draft BAR and Draft EMPr were delivered to:

- Msukaligwa Municipality Public Library, Ermelo, Corner of Smuts and Kerk Streets, Ermelo [tel: 017 801 3621]

The documents were also made available on SiVEST's website (www.sivest.co.za) for review and comment. Stakeholders were given the opportunity to review and comment on the Draft BAR for a period of **40 days (26th March 2015 – 8th May 2015)**. All comments received or responses sent during the public comment period for the Draft BAR are recorded in a Comments and Responses Report (to be included in Appendix E3 of the FBAR)

ENVIRONMENTAL IMPACT STATEMENT

The impact statements for the proposed power line is listed below. The impact statements for the route can be found in Appendix F (Impact Assessment Report) of this report.

The impacts rated for the CONSTRUCTION PHASE:

Impact rating summary for all the power line during the construction phase.

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Type of Impact	Description	Status	Significance Rating Pre-Mitigation	Status after mitigation
Botanical	Disturbance to and loss of Endangered Chrissiesmeer Panveld. The corridor is completely covered by this vegetation type.	Negative	High	Medium
Floral Habitat	Loss of floral habitat including sensitive habitat types, fragmentation of habitat.	Negative	Medium	Low
Floral Habitat	Loss of floral diversity, increase in alien and invasive floral species	Negative	Medium	Low
Floral Habitat	Loss of floral SCC and RDL species	Negative	Medium	Low
Fauna	Vegetation clearing, disturbance and the use of heavy machinery and human presence along the power line route during construction is likely to negatively affect resident fauna directly and through habitat loss.	Negative	Medium	Low
Surface Water	Impacts associated with the construction of a lay-down area directly within the wetland and respective buffer zones.	Negative	Low	Low
Surface Water	Towers in Surface Water Resources and Removal of Vegetation for the Stringing of Power lines through Watercourse Riparian Habitat: Drainage Line and Watercourse Riparian Habitat Loss	Negative	High	Low
Surface Water	Vehicle and Machinery Impacts: drainage lines and watercourse compaction/degradation	Negative	Medium	Low
Surface Water	Human degradation impacts: surface water resource fauna and flora physical degradation	Negative	Medium	Low
Surface Water	Increased storm water run-off and increased erosion and sedimentation impacting of wetlands and the associated buffer zones.	Negative	Low	Low
Surface Water	Degradation Impacts: stringing of power lines through surface water resources	Negative	Low	Low
Physical and Geographical	Soil erosion through vegetation clearance and soil compaction by heavy duty construction vehicles.	Negative	Low	Low
Physical and Geographical	Contamination of soils through indiscriminate disposal of construction waste and accidental spillage of petroleum products.	Negative	Low	Low
Soil and Agriculture	Loss of agricultural land and / or production as a result of the proposed power line construction	Negative	Low	Low
Avifauna	Disturbance of birds during construction of project	Negative	Low	Low
Avifauna	Destruction and alteration of habitat available to birds and the area during construction of the proposed project	Negative	Low	Low
Visual	Large construction vehicles and equipment during the construction phase may change the visual	Negative	Medium	Low

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Type of Impact	Description	Status	Significance Rating Pre-Mitigation	Status after mitigation
	character of the study area and expose sensitive receptors to visual impacts associated with the construction phase.			
Heritage	No heritage impacts occur near the proposed development site	Negative	None	None
Dust	Dust impacts on surrounding environment associated with construction activities.	Negative	Low	Low
Noise	Noise impacts on surrounding environment associated with construction activities.	Negative	Low	Low
Waste	Generating of additional waste / Litter and building rubble or hazardous material during the construction phase.	Negative	Medium	Low

The impacts rated for the OPERATIONAL PHASE

Impact rating summary for the proposed power line during the operational phase.

Type of Impact	Description	Status	Significance Rating Pre-Mitigation	Status after mitigation
Floral Habitat	Loss of floral habitat including sensitive habitat types, fragmentation of habitat.	Negative	Low	Low
Floral Habitat	Loss of floral diversity, increase in alien and invasive floral species	Negative	Low	Low
Floral Habitat	Loss of floral SCC and RDL species	Negative	Low	Low
Surface Water	Service Road Establishment and Subsequent Vehicle Degradation Impacts to Riparian Habitats	Negative	Low	Low
Surface Water	Power Line Collision and Electrocutation Impacts to Avifauna	Negative	Low	Low
Avifauna	Electrocutation of birds by pylons/towers.	Negative	Low	Low
Avifauna	Collision of birds with overhead power line cables	Negative	Low	Low
Visual	Change to the visual character of the surrounding area on potentially sensitive receptors	Negative	Low	Low
Socio - Economic	Positive socio-economic impacts as a result of constant, adequate, reliable supply of electricity to the area, thereby contributing positively to the expansion and strengthening of local economic activities.	Positive	High	High

The impact rated for the NO-GO Alternative:

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Nature of Impact	Description of Impact	Status of Impact	Significance Prior to Mitigation	Significance Post Mitigation
Socio-Economic (Direct Impact)	Negative socio-economic impact as a result of inadequate supply of electricity to the area, thereby limiting growth and expansion of local economic activities. Improvement in supply of electricity to the area will not be secured.	Negative	High	High

To summarise, the negative environmental impacts associated with the proposed development are generally considered to be local of nature and can be mitigated to a low level of significance in accordance with the detailed EMPr (Appendix G).

Given the above motivation, no feasible and reasonable alternatives other than '*(f) the option of not implementing the activity*' could be proposed for assessment. However, a 500m corridor was provided to specialists for assessment. The reason being, that it is likely that the proposed power line may need to be shifted for the final route selection due to environmental, social and technical reasons. The "No-go" option has however been assessed, but due to the need of the proposed project this has been ruled out.

COMMENTS/ISSUES

Public Participation has been undertaken through the Public Review period of the DBAR and consultation through meetings.

CONCLUSION AND RECOMMENDATIONS

The findings of the specialist studies undertaken within this BA provide an assessment of both the benefits and potential negative impacts anticipated as a result of the proposed development. The findings conclude that there are no environmental fatal flaws that should prevent the proposed project from proceeding. Areas of special concern have however been identified which will require site specific mitigation measures. These are included within the EMPr to ensure that these areas receive special attention.

The proposed development has an overall positive benefit to the socio-economic development of the region as well potential botanical advantages through alien clearing along the proposed power line route. The project is aligned with the objectives of the policies and frameworks at both Provincial and local level.

It is envisaged that any line rebuild may warrant a combination off all four construction strategies. It is therefore important to note that the environmental authorisation should not limit any of the above construction strategies. It is noted that all four construction strategies should not violate any environmental considerations / constraints within the 500m corridor. Such constraints can be managed via the detailed environmental management plan and policed by an environmental control officer. These construction strategies will be informed by the public participation process and the land owner negotiations.

Given the above motivation, no feasible and reasonable alternatives other than '*(f) the option of not implementing the activity*' could be proposed for assessment. However, a 500m corridor was provided to specialists for assessment. The reason being, that it is likely that the proposed power line may need

BASIC ASSESSMENT REPORT

to be shifted for the final route selection due to environmental, social and technical reasons. The “No-go” option has however been assessed, but due to the need of the proposed project this has been ruled out.

The Environmental Assessment Practitioner is therefore of the opinion that the negative environmental impacts associated with the proposed preferred route can be mitigated in accordance with the detailed EMPr (Appendix G) and subsequent site specific EMPr.



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

(For official use only)

File Reference Number:

14/12/16/3/3/1/1105

Application Number:

Date Received:

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

Kindly note that:

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

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14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included in the electronic copy of the report submitted to the competent authority.

SECTION A: ACTIVITY INFORMATION

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

✓YES

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

Background

SiVEST Environmental Division has been appointed by Trans-Africa Projects, the implementation agents for Eskom Holdings (SOC) Ltd, to undertake the Environmental Authorisation Process for the proposed project. The project is part of a suite of projects collectively known as the Ermelo-Richards Bay Coal link Upgrade.

Transnet is South Africa's sole provider of rail transport infrastructure for coal transportation. One of South Africa's largest foreign exchange earners is the export of high quality coal products to China. The Transnet rail link between the coal fields in Mpumalanga Province and the export node, the Richards' Bay Coal Terminal, is one of the busiest railway links in South Africa.

The increase in demand for South Africa's high quality coal necessitates the increase in production, which in turn has demands on the railway network infrastructure. In response to the increased demand for South Africa's coal in the global market place, Transnet needs to increase the volume of coal that is being transported between the Mpumalanga coal fields and the Richards' Bay Coal Terminal. This increase will be facilitated through capital expenditure on two fronts, the supporting infrastructure, i.e. the electrical network supplying the locomotives and the locomotives themselves.

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The following construction strategies are proposed for the power line rebuild:

1. Servitude Swap. This will include:

- Negotiating a new servitude within 250m of either side of the existing servitude with land owner/s (where possible);

- Registering the new servitude;
- Building a new line in the new negotiated servitude;
- Energising the new line;
- Dismantling the old line and rehabilitate the associated servitude; and
- Handing over of the old servitude to land owner/s.

2. Line Bypass. This will include:

- Building a line bypass within 25m of the existing servitude;
- The bypass line should then span the entire length of the line that will be upgraded;
- Dismantling of the old line;
- Building a new line;
- Energising the new line;
- Dismantling the bypass line; and
- Rehabilitating the temporary servitude (if needed).

3. Line Section Bypass. This will include:

- Building a line section/s bypass within 25m of the existing servitude;
- Bypassing line section/s will be limited to strain section/s of the line that will be upgraded;
- Dismantling of the old line section/s;
- Building the new line section/s;
- Energising the new line section/s;
- Dismantling the bypass line section/s;
- Rehabilitating the temporary servitude (if needed); and
- Proceeding to the next line section/s that needs to be upgraded.

4. Servitude Widening. This will include:

- Widening the servitude by 25m

It is envisaged that any line rebuild may warrant a combination of all four construction strategies. It is therefore important to note that the environmental authorisation should not limit any of the above construction strategies. It is noted that all four construction strategies should not violate any environmental considerations / constraints within the 500m corridor. Such constraints can be managed via the detailed environmental management plan and policed by an environmental control office. These construction strategies will be informed by the public participation process and the land owner negotiations.

Where applicable the procedure for the recycling and rehabilitation of the dismantled line will be in line with the Eskom process.

The dismantled towers and line hardware will be stored at a local Eskom depot. All steel material and conductors will be removed by an accredited Eskom supplier and recycled. All non-ferrous material will be returned to the Eskom stores and disposed of from there by an accredited scrap dealer.

The power lines will consist of a series of towers located approximately 200m apart, depending on the terrain and soil conditions. The proposed power line will be a total of 3.5km with a 32m servitude corridor. The structures to be used to support the overhead Power line will be steel monopole.

An access road for the length of the power line to be rebuilt needs to be formalized. The access road will be a single lane gravel road that will turn off west from the existing access road to the Camden Coal Fire Station and follow the proposed power line rebuild 3.5km south until terminating at the

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access road east of the cooling ponds. The exact position and type of road will be determined once the power line positions have been confirmed through the negotiation process.

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

Note: New EIA Regulations were promulgated on 4 December 2014 (Government Gazette No. 38282 of 04 December 2014) and came into effect on 8 December 2014. However, the BA for this proposed project was initiated on 18 December 2013 prior to the new EIA Regulations coming into effect. Therefore in accordance with Regulation 53 (1) of the EIA 2014 Regulations, any applications submitted in terms of the previous NEMA regulations must be undertaken as if the previous NEMA regulations were not repealed. This EIA has therefore been undertaken in accordance with the EIA 2010 Regulations which are contained in four Government Notices (GN 543, 544, 545 and 546) which were promulgated on 18 June 2010 and came into effect on 02 August 2010.

Listed activity as described in GN R.544, 545 and 546	Description of project activity
<p>GN R544, activity 10 (i): The construction of facilities or infrastructure for the transmission and distribution of electricity –</p> <p>(i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or</p>	<p>The capacity of the new distribution lines is 88kV. The construction of the distribution lines will occur outside an urban area.</p>
<p>GN R544, activity 11(xi): The construction of:</p> <p>(xi) infrastructure or structures covering 50 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.</p>	<p>The surface water assessment identified 7 surface water features. The erection of the pylons might fall within 32m of a watercourse.</p>
<p>GN R. 544 Item 18 (i): 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, shell grit, pebbles or rock from</p> <p>(i) a watercourse;</p> <p>but excluding where such infilling, depositing, dredging, excavation, removal or moving</p> <p>(i) is for maintenance purposes undertaken in accordance with a management plan agreed to by the relevant environmental authority; or</p> <p>(ii) occurs behind the development setback line.</p>	<p>The surface water assessment identified 7 surface water features. It is likely that construction activities may need to take place within at least one of these surface water features. During these construction activities, soil may be removed from the watercourses.</p>

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<p>GN 546 activity 4(a)ii. (cc) (ee): The construction of a road wider than 4 metres with a reserve less than 13,5 metres. (cc) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; (ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</p>	<p>The construction of a road may be required for construction and maintenance purposes. The botanical assessment identified Critical Biodiversity Areas within the proposed power line corridor due to the presence of the Endangered Chrissiesmeer Panveld vegetation type. Should the road be required for the proposed development, the road may be greater than 4 m wide but will be less than 8 m wide.</p>
<p>GN R546, Activity 12 (b): The clearance of an area of 300 square metres or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation. (b) Within critical biodiversity areas identified in bioregional plans;</p>	<p>The botanical assessment identified Critical Biodiversity Areas within the proposed power line corridor due to the presence of the Endangered Chrissiesmeer Panveld vegetation type. The construction of the power lines may require the clearance of an area of 300 square metres where 75% of the vegetation is indigenous.</p>
<p>GN R546, Activity 13(a)(c)ii.(cc): The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation (a) Critical biodiversity areas and ecological support areas as identified in systematic biodiversity plans adopted by the competent authority. c) In Eastern Cape, Free State, KwaZulu-Natal, Limpopo, Mpumalanga, Northern Cape and Western Cape: ii. Outside urban areas, the following: (cc) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority.</p>	<p>Critical Biodiversity Areas within the proposed power line corridor due to the presence of the Endangered Chrissiesmeer Panveld vegetation type. The construction of the power lines may require the clearance of an area of 1 hectare or more of vegetation where 75% of the vegetation is indigenous.</p>
<p>GN R546, Activity 14(a)(i): The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation (a) In Mpumalanga: i. All areas outside urban areas.</p>	<p>Critical Biodiversity Areas within the proposed power line corridor due to the presence of the Endangered Chrissiesmeer Panveld vegetation type. The construction of the power lines may require the clearance of an area of 5 hectares or more of vegetation where 75% of the vegetation is indigenous.</p>
<p>GN R546, Activity 16 (iv)(a)(ii)(dd)(ff): The construction of: (iv) infrastructure or structures covering 10 square metres or more where such construction occurs within a</p>	<p>The surface water assessment identified 7 surface water features. The erection of the pylons might fall within 32m of a watercourse. The construction of the distribution lines will occur outside an urban area. The botanical assessment identified Critical Biodiversity Areas within the proposed power line corridor due to the presence</p>

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<p>watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.</p> <p>(a) In Eastern Cape, Free State, KwaZulu-Natal, Gauteng, Limpopo, Mpumalanga, Northern Cape, Northwest and Western Cape:</p> <p>(ii) Outside urban areas, in:</p> <p>(dd) Sensitive Areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority.</p> <p>(ff) Critical biodiversity areas or ecosystem service areas identified in systematic biodiversity plans adopted by the competent authority or in biological plans.</p>	<p>of the Endangered Chrissiesmeer Panveld vegetation type</p>
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2. FEASIBLE AND REASONABLE ALTERNATIVES

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

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

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

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

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

IMPORTANT: Motivation for No Alternatives

The need for the proposed development is to supply additional energy to Eskom Holding's (SOC) various traction substations between Ermelo and Richards Bay. Transnet requires additional energy and capacity to facilitate the introduction of the new, larger locomotives that will be added to increase the volume of coal being transported and exported.

This is necessary as the increase in demand for South Africa's high quality coal necessitates the increase in production, which in turn has demands on the railway network infrastructure. In response to the increased demand for South Africa's coal in the global market place, Transnet needs to increase the volume of coal that is being transported between the Mpumalanga coal fields and the Richard's Bay Coal Terminal. This increase will be facilitated through capital expenditure on two fronts, the supporting infrastructure, i.e. the electrical network supplying the locomotives and the locomotives themselves. In order for Transnet to accomplish the above they need to upgrade their power supply to their various traction substations between Ermelo and Richards Bay to facilitate the increase demand for coal.

As per Chapter 1 of the EIA regulations (2010), feasible and reasonable alternatives are required to be considered during the BA process. Alternatives are defined as "different means of meeting the general purpose and requirements of the activity" These alternatives may include:

- 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.

Each of these alternative types are discussed in relation to the proposed project in the sections below.

The property on which or location where it is proposed to undertake the activity:

No site alternatives have been considered for this project as the placement of the proposed power line is dependent on a number of considerations, all of which have been identified as being favourable at the proposed site location. These considerations include the existing operational power lines in the area, grid connections, existing substations and access to the site. In addition, Transnet have identified traction substations and associated power lines that need to be upgraded in order to facilitate the high demand for coal exports which directly places increased demand on the countries energy supply.

Considering that the proposed development is a power line rebuild the proposed development site is the only feasible option as it is a minor section of the existing line that will be upgraded. The project site also has advantageous grid connection potential through the existing Uitkoms Substation and Antra T-off. The site is also easily accessible from the existing access road to the Camden Coal Fired Station. The existing power line corridor is therefore considered highly suitable for the proposed development and no other locations or corridors are being considered. It must be noted that the 500m wide corridor forms part of the assessment of the proposed power line rebuild to allow for some manoeuvrability where required.

The type of activity to be undertaken:

No feasible and reasonable activity alternative exists therefore activity alternatives cannot be considered. This is due to the fact that the proposed activity is the rebuild of an existing power lines in order to meet the energy required by Transnet to increase their coal output. The proposed development

is activity specific in that power lines are required to transmit and distribute electricity,

The design or layout of the activity:

Various environmental specialists have assessed the site within the 500m assessment corridor and have included the identification of sensitive areas. The identified sensitive areas will be used to guide the exact location of the power line rebuild in conjunction with, landowner negotiations and technical constraints. Additionally, there are various monopole tower types being considered for the proposed development. Each tower design type will have very little to no variation in environmental impacts between the different tower design types, as they will occupy relatively the same footprint size and have the same tower height. Additionally, the type of monopole towers to be used will be determined by technical constraints and ultimately determined by the engineers. Therefore no feasible or reasonable design or layout alternatives were assessed in this BA.

The technology to be used in the activity;

There are four (4) construction strategies being applied for in this BA. The technology options include a servitude swap; line bypass, line section bypass or a servitude widening. The choice of technology used will ultimately be determined by the land owner / servitude negotiations process and technological constraints at a later stage. As it is envisaged that any power line rebuild may warrant a combination off all four construction strategies based on the land owner / servitude negotiation process and technical constraints. It is therefore important to note that the environmental authorisation should not limit any of the above options. It is noted that all four construction strategies would need to be considered within the environmental considerations / constraints occurring within the 500m corridor. Such constraints can be managed via the site specific EMPr and implemented by an environmental control officer. The selection of the four construction strategies will be informed by the public participation process and the land owner negotiations. Therefore no technology alternatives were assessed as part of this BA.

The operational aspects of the activity; and

The proposed development is operationally specific in that the operation of power lines are required for the proposed development

The option of not implementing the activity.

The option of not implementing the activity, or **the 'no-go' alternative, has been considered in this BA.** The No-Go Alternative refers to the option of not implementing the proposed infrastructure development and ultimately the continuation of the current *status quo*. In order for Transnet to accomplish the increased demand for coal and the associated mining activities they need to upgrade their power supply to their various traction substations between Ermelo and Richards Bay. This will facilitate the introduction of the new, larger locomotives that will be added to increase the volume of coal being transported and exported. Should this development not proceed, this will result in the electricity demands not being met. This would be detrimental as South Africa is under immense pressure to provide electricity to meet the currently growing electricity demand in the country. Although the potential environmental issues, such as habitat destruction, would not occur if the project did not go ahead, the socio economic benefit of the proposed project should not be overlooked. The project would assist in achieving South Africa's goals in terms of energy security which in turn would promote local economic development.

Conclusion:

Given the above motivation, no feasible and reasonable alternatives other than '(f) *the option of not implementing the activity*' could be proposed for assessment. However, a 500m corridor was provided to specialists for assessment. The reason being, that it is likely that the proposed power line may need

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to be shifted for the final route selection due to environmental, social and technical reasons. The “No-go” option has however been assessed, but due to the need of the proposed project this has been ruled out.

Ultimately, the following impacts for each phase of the proposed development are likely to take place but the severity has been limited in most instances, should the proposed mitigation measures be implemented.

a) Site alternatives

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

Power lines

In the case of linear activities:

Alternative:

Alternative S1

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

Latitude (S):

Longitude (E):

26° 37' 4.840" S	30° 5' 53.639" E
26° 37' 39.847" S	30° 6' 30.444" E
26° 38' 23.586" S	30° 6' 20.243" E

Alternative S2 (N/A)

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

Alternative S3 (N/A)

- 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.

Please refer to Appendix J3 for the bend point coordinates of the power line corridor for the power line 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.

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b) Lay-out alternatives

Alternative 1		
Description	Lat (DDMMSS)	Long (DDMMSS)
N/A		
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
N/A		
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
N/A		

c) Technology alternatives

Alternative 1
N/A
Alternative 2
N/A
Alternative 3
N/A

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

Alternative 1 (preferred alternative)
N/A
Alternative 2
N/A
Alternative 3
N/A

e) No-go alternative

The No-Go Alternative refers to the option of not implementing the proposed infrastructure development and ultimately the continuation of the current status quo. However, should Eskom and Transnet not proceed with the development of the proposed Uitkoms power line, the necessary electrical input into the Transnet railway system will not be present. This will prevent Transnet from increasing the locomotive traffic between Richards Bay (KwaZulu-Natal) and Ermelo (Mpumalanga) and subsequently prevent increased coal transport to the Richards Bay harbour for export. The proposed project is part of a Strategic Infrastructure Plan, aimed at increasing the coal mining industry and economic profile of South Africa, with a total CAPEX value of over 1 billion Rand and an employment opportunity value of over 48 million Rand, 80% of which is to be allocated to previously disadvantaged individuals. The Coal Link Upgrade project is therefore a major economic undertaking from which South African citizens can benefit economically and financially. Trans-Africa Projects, on behalf of Eskom Pty Ltd and Transnet Railways, is therefore proposing the above mentioned Uitkoms power line to allow for the increase in coal transport between Richards Bay, KwaZulu-Natal and Ermelo, Mpumalanga. Should this development not go forward then the electricity demands will not be met.

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:

	N/A m ²
	N/A m ²
	N/A m ²

or, for linear activities:

Alternative:

Alternative A1
 Alternative A2 N/A
 Alternative A3 N/A

Length of the activity:

	(approx.) 3.09km

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

Alternative:

Alternative A1
 Alternative A2 N/A
 Alternative A3 N/A

Size of the site/servitude:

	Approx. 32m

4. SITE ACCESS

Does ready access to the site exist?

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

	✓ YES

Describe the type of access road planned:

- Where possible, existing access roads will be used.
- In instances where no access is available, an access road will be created.
- Access tracks to be constructed will be single-track, gravel roads. An access road for the length of the power line to be rebuilt needs to be formalized. The access road will be a single lane gravel road that will turn off west from the existing access road to the Camden Coal Fire Station and follow the proposed power line rebuild 3.5km south until terminating at the access road east of the cooling ponds.
- The potential impacts associated mitigation measures with the creation of access roads are addressed in the EMP_r (Appendix G).
- The exact position and typed of access roads cannot be determined until the power line positions have been confirmed through the servitude negotiation process. It is therefore recommended that the final road and power line alignments are submitted to the competent authority once these are confirmed and prior to construction.

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

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).

A locality map is included in Appendix A.

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.

A Site Layout may indicating the route alignment is included Appendix A.

7. SENSITIVITY MAP

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

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

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

Various sensitivity maps for the proposed site are included in Appendix A.

8. SITE PHOTOGRAPHS

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

Site Photographs taken along the proposed route corridor for the power line are included in Appendix B. Key features of the site are depicted in the site photographs.

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.

A schematic drawings of the proposed tower types is included 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

The surrounding area of the existing Uitkoms Substation is substantially altered with existing infrastructure and urban development (i.e. Camden Power Station and Coal mines). The proposed power line route traverses vacant land with some commercial cultivation occurring within the western and northern parts of the study area. Other than a few isolated farmsteads, the only human settlement within the study area is found within the town of Camden. The proposed development does not alter the surrounding area substantially as this has already been substantially altered and the vegetation has been transformed for agricultural purposes. A change in land use will not be required as the power line servitude will be considered as special use within the existing land use.

2. Will the activity be in line with the following?		
(a) Provincial Spatial Development Framework (PSDF)	✓ YES	
<p>Reference is made to the Mpumalanga Economic Growth and Development Path (2011) Section 3.7.1 that mentions that the Integrated Resource Plan will help improve the economic efficiency and create jobs. In order to facilitate growth and job creation in the agricultural sector Section 4.3.2.2 of the Mpumalanga Economic Growth and Development Path (2011) places emphasis on infrastructure development including electricity. The electricity production industry of Mpumalanga is contributing directly and indirectly to the economic growth and job creation as eleven of the currently operational coal-fired power stations in the country are situated in Mpumalanga and contribute roughly 76% of the total electricity generated in South Africa (Mpumalanga Economic Growth and Development Path (2011) Section 4.3.2.4 on Mining and energy industries).</p> <p>The main purpose of the proposed development is for electricity distribution to the railway for coal transport to Richard's Bay. Revenue will hereby be generated for the province from exporting coal to Richard's Bay via the railway. The electricity from the proposed power line will be for the primary use by the railway line as currently, this electricity is too unstable to be used for public/commercial use.</p> <p>The Coal Rail Link is identified as one of the existing infrastructures that greatly complement and expand existing opportunities for manufacture and trade, if upgraded and further developed. The proposed Power line is considered an upgrade of the Coal Link railway line by providing additional electricity capacity to increase the operational capacity of the railway line.</p>		
(b) Urban edge / Edge of Built environment for the area		✓ Please explain
<p>Proposed development will lie outside the urban edge or built environment. The proposed Power line will be built between the existing Uitkoms substation and Antra T-off.</p>		
(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	
<p>Reference is made to the Msukaligwa IDP (2013-2014) Section 6.5.2 identifies the coal link railway as contributing the provisions of job opportunities to local communities. Section 4.2.5 identifies the need to increase rail transport within the province and the municipality to relieve strain on the road networks due to industrial haulage of goods. Section 6.1.5.3.2 further identifies the opportunity to utilise the rail network as a future passenger commuting alternative. Therefore, the proposed Uitkoms-Antra power line rebuild indirectly supports the Msukaligwa IDP (2013-2014) by providing essential electricity to the railway to further its operational capacity for coal transport, and potentially commuter transport.</p>		
(d) Approved Structure Plan of the Municipality		✓ NO
<p>Approved Structure Plans do not exist for the area in question.</p>		

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<p>(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?)</p>	<p>✓ YES</p>	
<p>No EMF is available for the area in question. The proposed development would not compromise the integrity of the environmental management priorities for the area. No environmental fatal flaws were identified and it was established that the impacts can be suitably mitigated to low levels. In addition, the development would result in socio-economic benefits for the area at large.</p>		
<p>(f) Any other Plans (e.g. Guide Plan)</p>		<p>✓ NO</p>
<p>N/A: no further plans are available for the area in question.</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. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?</p>	<p>✓ YES</p>	
<p>Yes, the land use is considered within the timeframe of the Msukaligwa IDP, as the proposed development would be operational by 2015.</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>✓ YES</p>	
<p>The proposed project is not a societal priority, however the proposed project is necessary to increase the electricity capacity of the Transnet railway between Richards Bay and Mpumalanga to respond to increased coal transport demands. This project is designated as part of a “Strategic Infrastructure Project” to aid in the continued development of the mining and export industry of South Africa. Therefore, this project will impact positively on the local, provincial and national economies and ensure that South Africa continues to improve its national transport system, hereby increasing economic output and revenue.</p>		

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<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>✓ Please explain</p>
<p>The proposed development does not require municipal services. The proposed power line will require water and electricity resources, however these will be provided through trucked water and diesel generators.</p> <p>Construction waste will be generated during the construction process. Any excavated material not suitable for re-use will be disposed of at a licensed land-fill site. Hazardous material generation is not anticipated, however should small quantities be produced, these would be disposed of at a licensed Hazardous Materials Landfill site. All relevant local and district Municipalities were provided with the opportunity to comment on the proposed development as well as the DBAR. Confirmation from the Municipality will be forwarded to the DEA upon receipt. Proof of request for comments from the Municipality have been included as an Appendix to the FBAR</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>✓ NO</p>
<p>The proposed development is not provided for in the infrastructure planning of the municipality as it is a national-level SIP project that is not provided for on a municipal level. Eskom has identified the need to develop the Uitkoms-Antra Power line rebuild in order to meet the increasing electricity demands for coal railway transport.</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>This project forms part of a suite of projects throughout Mpumalanga and Kwazulu-Natal, collectively known as the Ermelo-Richards Bay Coal Link Upgrade Project. This project will significantly increase the volume of coal that South Africa can export, meeting the international demand for South African coal. This suite of projects are further considered to form part of the National Strategic Infrastructure Projects and falls within the parameters of SIP 2 and SIP 10, thus this proposed development is considered to be of national importance. The proposed development is further in line with the National Spatial Development Perspective which states that “South Africa will become a nation in which investment in infrastructure...support government’s growth and development objectives: by focusing economic growth...in areas where it is most effective and sustainable; by fostering development on the basis of local potential...”.</p>		

BASIC ASSESSMENT REPORT

<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>An existing servitude corridor that contains the Uitkoms substation however, new servitudes will need to be constructed where no roads exist. The proposed development will replace the current existing power line in an existing servitude. Therefore, the land use proposed for the area in question is already existing.</p>		
<p>9. Is the development the best practicable environmental option for this land/site?</p>	<p>✓ YES</p>	
<p>As mentioned above, the proposed corridor is existing and occurs on transformed or altered land and the proposed study area is already substantially altered. As such, the proposed development is a suitable development within this context. The development will conform to the typical visual character and pattern of elements that make up the landscape form.</p>		
<p>10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?</p>	<p>✓ YES</p>	
<p>The negative impacts of the proposed development are low due to the location in a rural area on low grade agricultural land as well as the presence of an existing servitude. Any residual environmental impacts will be mitigated based on the EMPr (Appendix G). The proposed project is necessary to increase the electricity capacity of the Transnet railway between Richards Bay and Mpumalanga to respond to increased coal transport demands. This project is designated as part of a “Strategic Infrastructure Project” to aid in the continued development of the mining and export industry of South Africa. Therefore, this project will impact positively on the local, provincial and national economies and ensure that South Africa continues to improve its national transport system, hereby increasing economic output and revenue.</p>		
<p>11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?</p>		<p>✓ NO</p>
<p>The proposed development of the Uitkoms-Antra Power line re-build will serve to increase the electricity capacity to accommodate increasing transport of coal for export. The negative impacts associated with the proposed development are generally low. However, no precedent is set for future development as the proposed development will increase electrical input into the existing Transnet railway line to transport coal for export.</p>		
<p>12. Will any person's rights be negatively affected by the proposed activity/ies?</p>		<p>✓ NO</p>
<p>Landowners affected, as well as landowners adjacent to the proposed development have been notified timeously (see Appendix E2) about the proposed development and given opportunity to comment. A public workshop was held two weeks into the Draft PPP Phase. Therefore, all affected I&AP's were provided with the opportunity to voice any concerns with regards to the proposed development. Consent for land access and construction (where applicable) will be obtained prior to begin of the construction phase. Consent for land access and construction (where applicable) has been obtained.</p>		
<p>13. Will the proposed activity/ies compromise the “urban edge” as defined by the local municipality?</p>		<p>✓ NO</p>
<p>The proposed power line re-build lies outside the urban edge.</p>		

BASIC ASSESSMENT REPORT

14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	✓ YES	
<p>The proposed development will contribute to two (2) SIP namely: SIP 2 on “strengthening the logistics and transport corridor between SA’s main industrial hubs” and SIP 10: Electricity Transmission and Distribution for all – <i>“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</i></p>		
15. What will the benefits be to society in general and to the local communities?	✓ Please explain	
<p>The proposed Uitskoms-Antra Power line, as part of the Coal Link Upgrade, will ensure that electricity capacity to the Ermelo, Mpumalanga – Richards Bay, KwaZulu-Natal railway line contributes to the increase in coal transport capacity for export. Therefore, an increased national revenue will benefit the South African society in general, while local and regional job creation will provide potential employment to the region.</p>		
16. Any other need and desirability considerations related to the proposed activity?	✓ Please explain	
<p>All need and desirability aspects have been identified and considered in this report.</p>		
17. How does the project fit into the National Development Plan for 2030?	✓ Please explain	
<p>With reference to Chapter 4 – Economic infrastructure, sub-chapter “The energy reality” (pg. 164) the NDP notes that “The quality of market competition and regulation in the energy sector has been far from optimal” and that the “crippling [rail] transport constraints” result in “the lack of rail capacity that constrain[s]...the expansion of coal exports.” It is further noted that the export capacity at the Richard’s Bay coal terminal is one third higher than the rail capacity from the coal fields. Therefore, the proposed Uitskoms-Antra Power line, as part of the Coal Link Upgrade, directly contribute to alleviating the identified coal export constraints outlined in the NDP for 2030.</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.

- a) *Promote the integration of the principles of environmental management set out in section 2 into the making of all decisions which may have a significant effect on the environment;*
- **This Basic Assessment process takes into account all the general objectives of Integrated Environmental Management. The social, economic, cultural and biophysical impacts have been considered and evaluated. The impacts will be mitigated and managed according to a detailed Environmental Management Programme.**
- b) *Identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimising negative impacts, maximising benefits and promoting compliance with the principles of environmental management set out in section 2;*
- **Impacts associated with the proposed development of the Uitkoms substation and Antra T-off (construction and operational phases) have been identified, assessed and mitigation measures provided. These are detailed in Section D of this BAR.**
- c) *Ensure that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them;*
- **This Application is being undertaken in accordance with the NEMA EIA Regulations (2010), the provisions of which themselves take into account the general objectives of Integrated Environmental Management in Section 23 of the NEMA**
 - **Please also refer to the attached Environmental Management Programme (Appendix G)**
- d) *Ensure that adequate and appropriate opportunity for public participation in decisions that may affect the environment;*
- **This Application has been undertaken in accordance with the Public Participation Requirements (and proposed deviations) set out in the NEMA EIA Regulations (2010). Public Participation Deviations are included in Section C of the BAR.**
 - **Please refer to section C of this BAR for details relating to PPP.**
- e) *Ensure the consideration of environmental attributes in management and decision-making which may have a significant effect on the environment; and*
- **This Basic Assessment process takes into account all the general objectives of Integrated Environmental Management. The social, economic, cultural and biophysical impacts have been considered and evaluated. The impacts will be mitigated and managed according to a detailed Environmental Management Programme.**
- f) *Identify and employ the modes of environmental management best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management set out in section*
- **This Basic Assessment process takes into account all the general objectives of Integrated Environmental Management. The social, economic, cultural and biophysical impacts have been considered and evaluated. The impacts will be mitigated and managed according to the detailed Environmental Management Programme attached at Appendix G.**

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 the NEMA require that environmental management must place people and their needs at the forefront of development and that development must be socially, environmentally and economically sustainable. As described above; these principles have been taken into account by undertaking a thorough PPP in order to ensure that all Interested and Affected Parties (I&APs) are given the opportunity to be involved in the BA process and ultimately that their comments are taken into consideration by the DEA when reviewing the application. Several specialist studies were also undertaken to ensure that the development is sustainable and that disturbance to the environment is avoided where possible, minimised through appropriate mitigation measures and remedied via appropriate measures.

11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
National Environmental Management Act, 107 of 1998. NEMA EIA Regulations (Government Notices 543; 544; 546)	Identification of activities triggered by the proposed project for a Basic Assessment/Environmental Authorisation	Department of Environmental Affairs	1998 2010
DEA Integrated Environmental Management Guideline Series, Guideline 5: Assessment of the Environmental Impact Assessment Regulations, 2010	Guideline for the correct interpretation of legislation	Department of Environmental Affairs	2010
DEA Integrated Environmental Management Guideline Series, Guideline 7: Public Participation in the Environmental Impact Assessment Process, 2012	Guideline for the correct interpretation of regulations	Department of Environmental Affairs	2012
National Water Act, 36 of 1998	A General Authorisation may be required for the altering or temporary impedance of watercourses during the construction phase.	Department of Water Affairs	1998
National Heritage Act, 25 of 1999	Authorisation from HWC for commencement of construction	Heritage Western Cape	1999

BASIC ASSESSMENT REPORT

		and for a permit if required		
Mpumalanga Economic Growth and Development Path (2011)		Identifies the need for additional electricity supply based on spatial development information on a provincial level.	Mpumalanga Province Government	2011
Msukaligwa Integrated Development Plan (2007-2012)		Identifies the importance of a Power line development in a District Development context.	Msukaligwa Municipality	Local 2007
Msukaligwa Spatial Development Framework (2010)		Identifies the importance of visual and other environmental impacts in association with Power line developments.	Msukaligwa Municipality	Local 2010
Gert Sibande District Municipality Integrated Development Plan (2012/13 – 2016.17)		Utilised for socio-economic status of the receiving environment	Gert Sibande District Municipality	2012
Census 2011 Municipal report Mpumalanga		Utilised for socio-economic status of the receiving environment	Statistics South Africa	2011
The Vegetation of South Africa, Lesotho and Swaziland. Mucina & Rutherford (2006). SANBI, Pretoria		Utilised as a reference guide for the identification of upgrade-specific environmental information	CapeNature	2006
Mpumalanga Nature Conservation Act (MNCA) (Act 10 of 1998)		Permits must be obtained from the Mpumalanga Tourism and Parks Agency (MTPA).	Mpumalanga Tourism and Parks Agency (MTPA).	1998

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

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

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

✓YES	
Approx. 3m ³	

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

Solid waste (minimal construction waste and regular household waste) will be collected by independent contractors and disposed of at a registered licensed municipal landfill site with proof of safe disposal required.

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

Solid waste (construction waste and builders rubble) will be collected by independent contractors and disposed of at the registered licensed municipal landfill site with proof of safe disposal required.

BASIC ASSESSMENT REPORT

Will the activity produce solid waste during its operational phase? [REDACTED] ✓NO
 If YES, what estimated quantity will be produced per month?
 How will the solid waste be disposed of (describe)?

N/A

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

N/A

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

N/A

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

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA? [REDACTED] ✓NO
 If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility? [REDACTED] ✓NO
 If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. 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? [REDACTED] ✓NO

If YES, what estimated quantity will be produced per month? **N/A** m³

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

If YES, provide the particulars of the facility:

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

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

N/A

BASIC ASSESSMENT REPORT

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? **N/A**

YES	NO
-----	----

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

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

N/A

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?

	✓ 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	
-------	--

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

	✓ NO
--	------

Describe the noise in terms of type and level:

Noise, during normal working hours associated with the construction phase of the project is anticipated. Any equipment used during the construction or operational phase will not exceed a noise level of 80 decibel amperes (dbA).
--

13. WATER USE

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

✓ Municipal	Water board	Groundwater	River, stream, dam or lake	Other	The activity will not use water
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If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month: **N/A**

		litres
--	--	--------

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.

Awaiting comments from Department of Water and Sanitation (DWS) on the Draft BAR to confirm if a water use authorisation is required for construction activities at/near watercourses. Should an application be necessary, proof of submission to DWS will be provided in due course. A minimal amount of water may be required during the construction phase, this water will be supplied by the Municipality and will be trucked to the site. The amount of water is assumed to be negligible and only required for the foundations. The Municipality will be consulted in this regard through the Public Participation Process.

14. ENERGY EFFICIENCY

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

The proposed development does not have specific energy efficient measures implemented.

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

The proposed development does not contain any alternative energy sources, as the development is an electricity transmission and distribution infrastructure.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

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

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

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

3. Has a specialist been consulted to assist with the completion of this section? **✓YES**
 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 District Municipality	
Local Municipality	Msukaligwa Local Municipality	
Ward Number(s)	11	
Farm name and number	Please refer to full list in Appendix E3	
Portion number	Refer to above	
SG Code	Refer to above	

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

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

Agriculture	
Light Industry	

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**

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Alternative S1:

✓ Flat	✓ 1:50 1:20	-	✓ 1:20 1:15	-	✓ 1:15 1:10	-	1:10 – 1:7,5	✓ 1:7,5 1:5	-	Steeper than 1:5
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Alternative S2 (if any): N/A

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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Alternative S3 (if any): N/A

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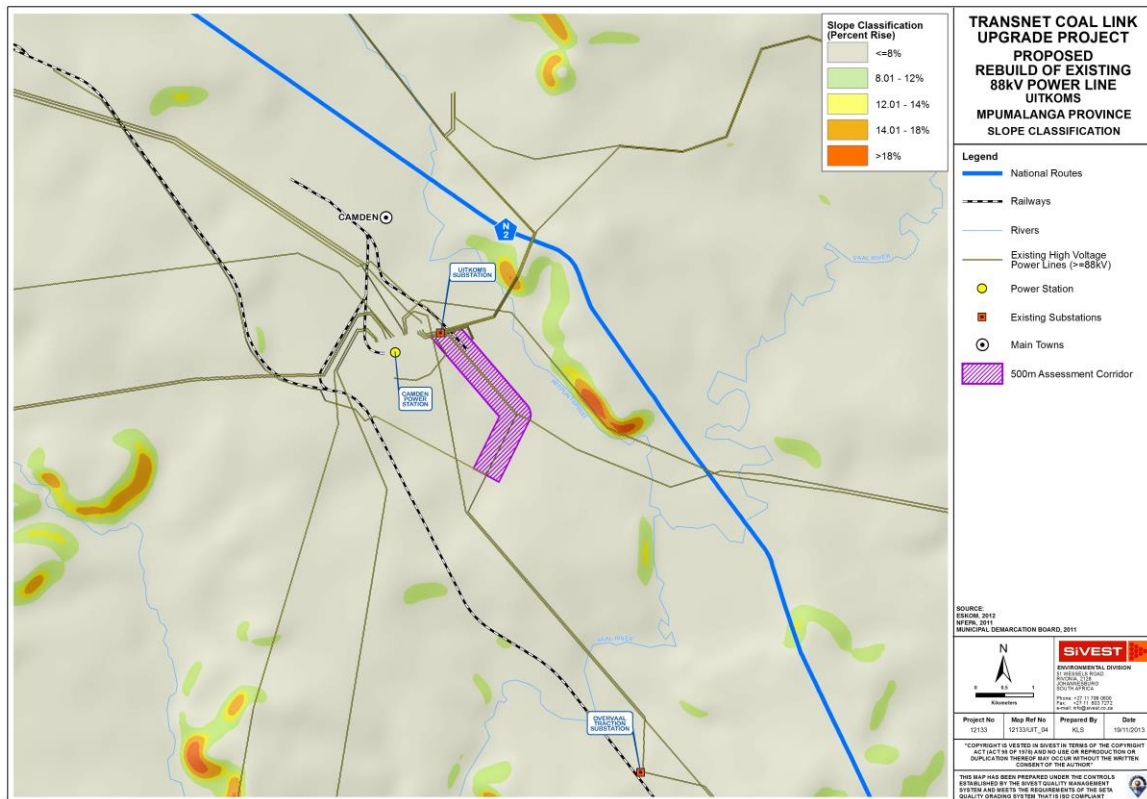


Figure 4: Slope Classification Map

BASIC ASSESSMENT REPORT

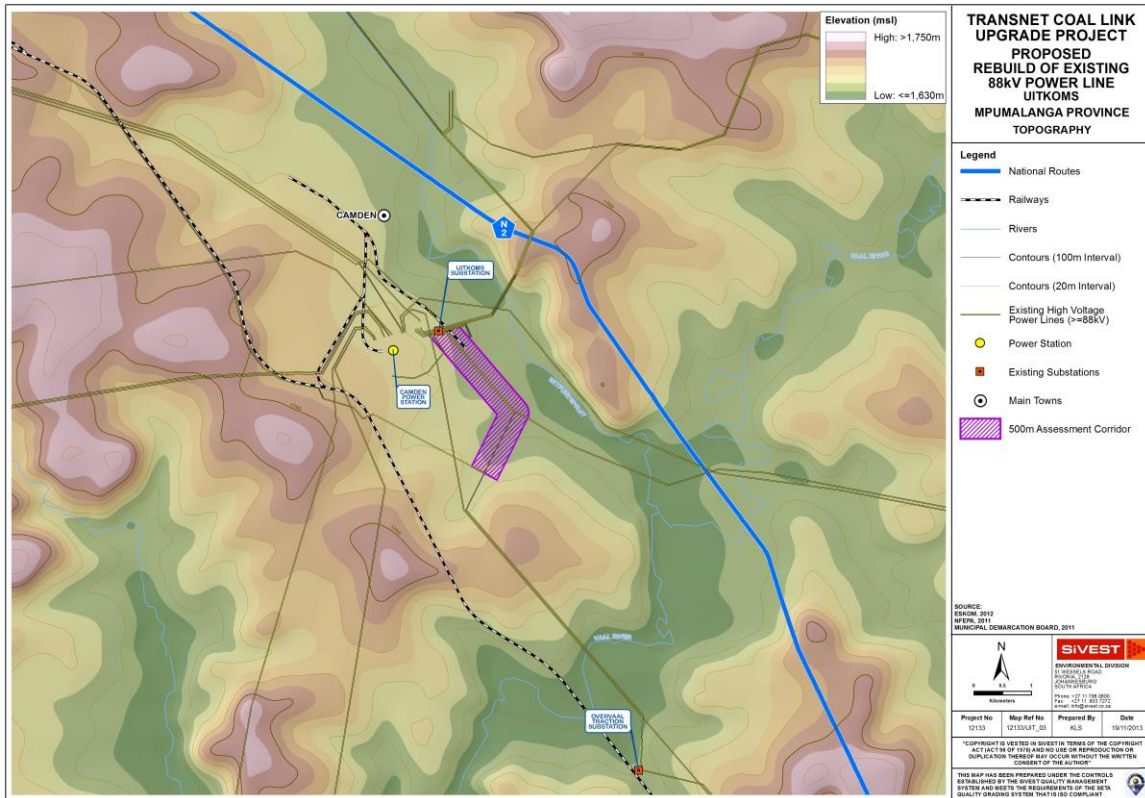


Figure 5: Topography Map

1. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site for all alternatives:

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 checked="" type="checkbox"/>	2.8 Dune	<input type="checkbox"/>
2.3 Side slope of hill/mountain	<input checked="" type="checkbox"/>	2.6 Plain	<input type="checkbox"/>	2.9 Seafront	<input type="checkbox"/>

2. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

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

BASIC ASSESSMENT REPORT

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

3. GROUNDCOVER

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

<input checked="" type="checkbox"/> Natural veld - good condition ^E	<input checked="" type="checkbox"/> Natural veld with scattered aliens ^E	Natural veld with heavy alien infestation ^E	Veld dominated by alien species ^E	Gardens
Sport field	<input checked="" type="checkbox"/> Cultivated land	Paved surface	Building or other structure	Bare soil

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

4. SURFACE WATER

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

Perennial River		<input checked="" type="checkbox"/> NO	
Non-Perennial River		<input checked="" type="checkbox"/> NO	
Permanent Wetland	<input checked="" type="checkbox"/> YES		
Seasonal Wetland	<input checked="" type="checkbox"/> YES		
Artificial Wetland	<input checked="" type="checkbox"/> YES		
Estuarine / Lagoonal wetland		<input checked="" type="checkbox"/> NO	

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

Reference is made to the Surface water Assessment by Alistair Fyfe as attached in Appendix D).

Unchannelled Valley Bottom: Two (2) unchannelled valley-bottom wetlands were identified

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Wetlands:

One man-made impoundment was identified. Access to the location was restricted. However, the impoundment wall can be seen from a distance. The surrounding landscape was characterised by presence of Camden Power Station, agricultural land and associated man-made impoundment within the vicinity. The man-made impoundment is presumably used for agriculture.

Two Slime Dams as part of the Camden Power Station were identified. The landscape was characterised by the presence of Camden Power Station and associated Slime dams within the vicinity. With respect to vegetation, the land is severely disturbed by the presence of Camden Power Station and respective Slimes Dams. In surrounding areas of inundation, *Typha capensis* and *Phragmites australis* were mainly prevalent.

Artificial Wetland:

Two artificial surface water drainage channels were identified. Due to the wetland exhibiting similar characteristics findings for both wetlands are included below. At either site, the landscape is severely altered with these drainage channels created to redirect surface water alongside gravel roads, into surrounding man-made impoundments. Due to the transformed nature of these drainage lines, no soil samples were drawn. With respect to vegetation, the drainage channels were dominated by *Phragmites australis* (ow) and *Pennisetum clandestinum*

5. LAND USE CHARACTER OF SURROUNDING AREA

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

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

BASIC ASSESSMENT REPORT

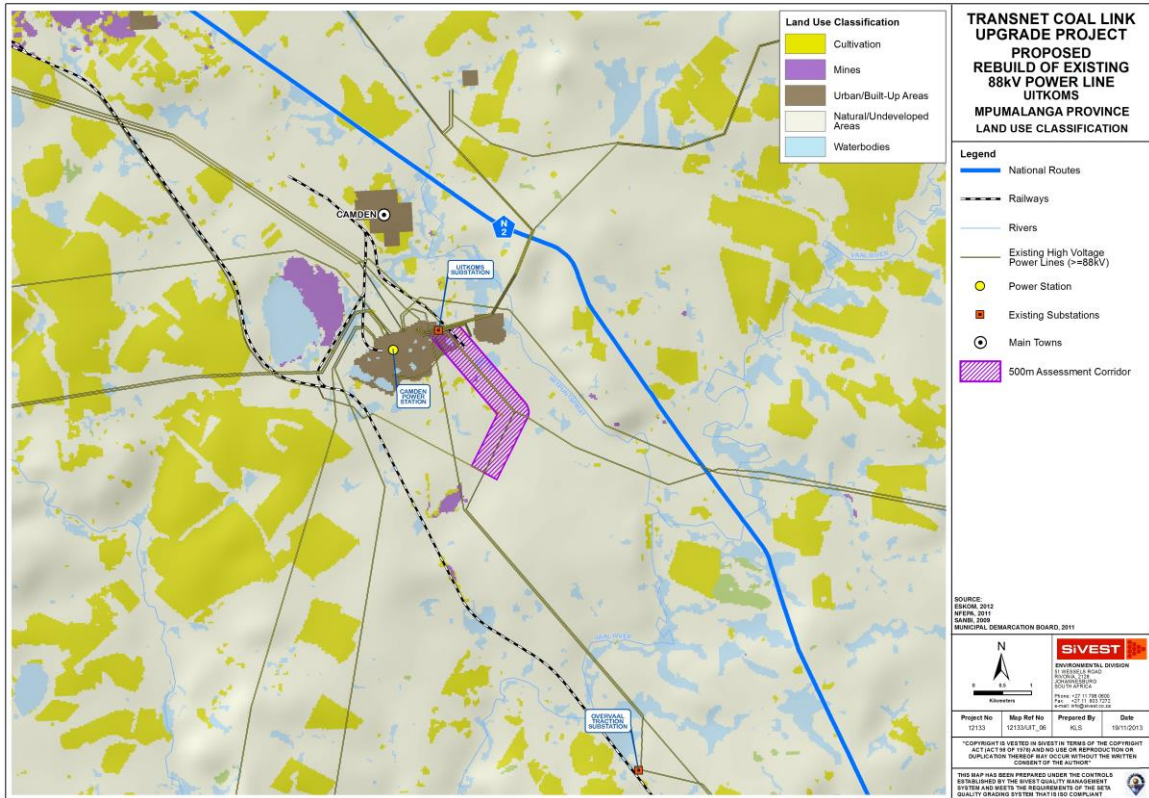


Figure 7: Landuse Map

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:

The proposed development will increase electrical input into the existing Transnet railway line to ensure increasing locomotive traffic to transport coal for export from Ermelo, Mpumalanga to Richards Bay harbour, KwaZulu-Natal. Therefore, the proposed power line will not negatively impact the railway line.

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

N/A

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

N/A

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

Critical Biodiversity Area (as per provincial conservation plan)	✓YES	
Core area of a protected area?		✓NO
Buffer area of a protected area?		✓NO
Planned expansion area of an existing protected area?		✓NO

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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.

The whole proposed corridor for the rebuilding of the 88 kV power line is covered with Chrissiesmeer Panveld. This vegetation type is **Endangered**, which means that if steps are not taken to protect remaining areas, it will go **Extinct**. No areas with Chrissiesmeer Panveld have statutory protection.

Chrissiesmeer Panveld is comprised of Eastern Highveld Grassland, Wakkerstroom Montane Grassland and Eastern Temperate Freshwater Wetlands, which are all **Threatened** vegetation types in their own right.

These vegetation types occur within Critical Biodiversity Areas.

6. CULTURAL/HISTORICAL FEATURES

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

✓NO

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:

Mr Frans Prins from Active Heritage cc. undertook a Heritage Impact Assessment dated 21 February 2014. It was concluded that no sites of Heritage significance lie within the proposed footprints of the proposed power line route.

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

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

✓NO

✓NO

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

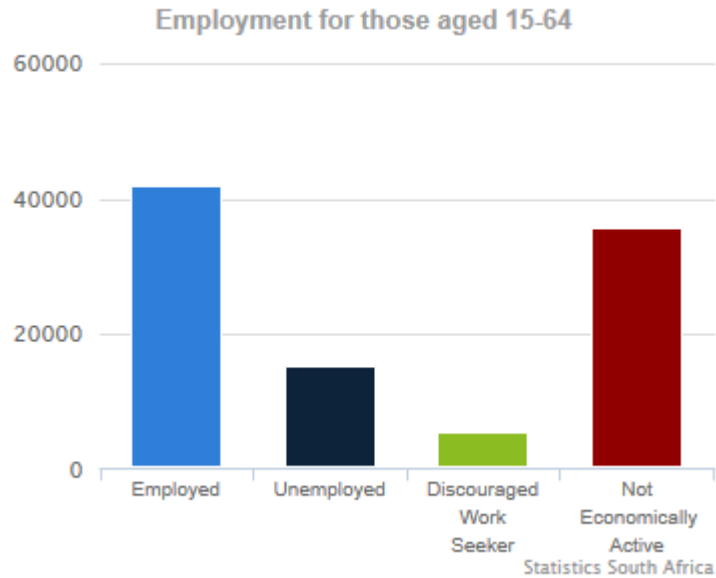
7. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

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

Level of unemployment:

Reference is made to Statistics South Africa with unemployment statistics for Msukaligwa Local Municipality as follows:



“According to Statistics South Africa Census 2011, in the Msukaligwa Local Municipality, there are 41 698 people employed, whereas 5 311 people are discouraged work-seekers. The unemployment rate is 26.8%. There are also 15 267 unemployed people in the Msukaligwa Local Municipality. Of the youth aged 15–34 residing in the Msukaligwa Local Municipality, 20 261 are employed while 10 679 are unemployed. The unemployment rate for the youth is 34.5%.

Economic profile of local municipality:

Reference is made to the Gert Sibande District Municipality IDP (2012 – 2016): Economic Sector employment per local municipality

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ECONOMIC SECTOR	CHIEF ALBERT LUTHULI	MSUKALIGWA	MKHONDO	DR PIXLEY KA ISAKA SEME	LEKWA	DIPALESENG	GOVAN MBEKI	GERT SIBANDE
Agriculture	9.7%	24.2%	24.0%	7.9%	20.6%	5.5%	8.2%	100
Mining	3.6%	10.3%	5.4%	0.9%	23.9%	0.9%	55.0%	100
Manufacturing	2.7%	7.5%	8.4%	2.0%	9.6%	1.0%	68.6%	100
Utilities	2.7%	10.4%	5.7%	19.2%	36.5%	6.0%	19.6%	100
Construction	6.6%	13.6%	7.4%	12.7%	10.9%	2.6%	46.2%	100
Trade	8.7%	15.3%	8.6%	5.9%	10.9%	2.3%	48.3%	100
Transport	9.3%	20.9%	8.9%	5.7%	9.7%	1.7%	43.8%	100
Finance	5.7%	19.1%	8.5%	6.4%	11.2%	1.6%	47.4%	100
Community services	13.2%	19.9%	13.9%	5.9%	16.9%	3.1%	27.1%	100
Households	6.3%	18.3%	12.7%	7.3%	17.4%	3.5%	34.4%	100
Total	7.5%	16.1%	11.3%	5.6%	15.7%	2.6%	41.2%	100

Source: Global Insight – ReX, August 2011

“The above table illustrates sectorial employment per local municipalities in Gert Sibande in 2010 where Msukaligwa employed the largest share of individuals in agriculture sector (24.2 %) across all the municipalities. However, the next highest economic employment sectors in this municipality were the transport and community service industry with 20.9 % and 19.9 % respectively.”

Level of education:

Reference is made to the Gert Sibande District Municipality IDP (2012 – 2016) with statistics on education levels as follows:

INDICATOR	ALBERT LUTHULI	MSUKA-LIGWA	MKHO-NDO	PIXLEY KA SEME	LEKWA	DIPALE-SENG	GOVAN MBEKI
No schooling	16.0%	12.8%	16.1%	17.6%	9.1%	13.7%	7.6%
Grade 0 – 9	34.9%	36.3%	40.0%	40.4%	42.3%	41.5%	33.5%
Grade 10 – 11	24.4%	23.9%	21.8%	19.8%	21.9%	22.6%	24.0%
No matric & certif/diploma	0.5%	0.6%	0.5%	0.6%	0.6%	0.7%	0.7%
Matric only	18.4%	20.2%	17.2%	15.9%	19.8%	17.0%	25.5%
Matric & certif/diploma	4.6%	4.8%	3.3%	4.1%	4.8%	3.5%	6.4%
Matric & Bachelor degree	0.9%	1.0%	0.8%	1.1%	1.1%	0.7%	1.6%
Matric & Postgraduate degree	0.2%	0.3%	0.3%	0.4%	0.4%	0.3%	0.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Global Insight – ReX, August 2011

“The highest level of qualification in Gert Sibande and its local municipalities is shown above. Govan Mbeki (34.2 %) together with Msukaligwa (26.1%) recorded the highest percentages of people with matric only and post matric qualifications.”

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R 6 000 000
What is the expected yearly income that will be generated by or as a result of the activity?	Transnet will be able to increase their export tonnage.
Will the activity contribute to service infrastructure?	✓ YES
Is the activity a public amenity?	✓ NO
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	Unknown.
What is the expected value of the employment opportunities during the development and construction phase?	R 60 000
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?	Unknown
What is the expected current value of the employment opportunities during the first 10 years?	Unknown
What percentage of this will accrue to previously disadvantaged individuals?	80%

8. BIODIVERSITY

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

a) I 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)	CBA – CBA is relevant here due to the presence of two threatened vegetation types: Endangered Chrissiesmeer Panveld - Endangered Chrissiesmeer Panveld

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	70%	Endangered Chrissiesmeer Panveld covers the whole corridor. Two streams and associated wetlands of good quality and ecological integrity cross the corridor. Chrissiesmeer Panveld is high in quality and species richness with very little disturbance from waypoint 1 to around 200 metres before waypoint 2. Consequently, habitat quality in this section is high. From around 200 metres to waypoint 2 and around waypoint 2, Chrissiesmeer Panveld is poor in quality and species richness mainly due to disturbance and bad agricultural practices. Consequently, habitat quality in this section deteriorates. From waypoint 2 to waypoint 3, poor quality and low species richness of Chrissiesmeer Panveld continue due to disturbance and bad agricultural practices. Hence, habitat quality in this section is poor. Agricultural lands are present north of waypoint 2 and a track passes just north of this waypoint to waypoint 3. Waypoints 3 and 4 are in the Camden Power Station grounds where disturbance is very high and Chrissiesmeer Panveld quality and species richness are low. Consequently, habitat quality in this section is very poor.
Near Natural (includes areas with low to moderate level of alien invasive plants)	5%	Bad agricultural practices in corridor and disturbed, degraded areas within Camden Power Station grounds.
Degraded (includes areas heavily invaded by alien plants)	5%	Bad agricultural practices in corridor and disturbed, degraded areas within Camden Power Station grounds.
Transformed (includes cultivation, dams, urban, plantation, roads, etc.)	20%	Camden Power Station grounds, roads, tracks, agricultural lands and existing power lines.

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c) **Complete the table to indicate:**

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

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

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

Endangered Chrissiesmeer Panveld covers the whole corridor, including two streams and associated wetlands which cross the corridor. The streams and wetlands are in good condition. Chrissiesmeer Panveld is high in quality and species richness with very little disturbance from waypoint 1 to around 200 metres before waypoint 2. From around 200 metres to waypoint 2 and around waypoint 2, Chrissiesmeer Panveld is poor in quality and species richness mainly due to disturbance and bad agricultural practices. From waypoint 2 to waypoint 3, poor quality and low species richness of Chrissiesmeer Panveld continue due to disturbance and bad agricultural practices. Waypoints 3 and 4 are in the Camden Power Station grounds where disturbance is very high and Chrissiesmeer Panveld quality and species richness are low.

Described in specialist Botanical Assessment Report (refer to Appendix D).

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Sowetan Newspaper	
	Ermelo Tribune	
	Zululand Observer	
	Paulpietersburg Advertiser	
Date published	27 th March 2015	
	31 st March 2015	
	27 th March 2015	
	02 nd April 2015	
Site notice position	Latitude	Longitude
	S 26° 31' 41.9"	E 29° 59' 18.0"
	S 26° 37' 04.8"	E 30° 05' 53.6"
	S 26° 38' 30.5"	E 30° 06' 31.1"
	S 26° 37' 16.5"	E 30° 07' 47.2"
Date placed	Site Notices were placed between the 24 th March – 28 th March 2015	

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

Proof of the Advertisements and Site notices are included in Appendix E1

2. DETERMINATION OF APPROPRIATE MEASURES

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

Refer to Appendix E for further details of the measures taken to notify all potential I&APs of the proposed project

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

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
Refer to Appendix E for all key stakeholder information.		

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.

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Proof that the key stakeholder received written notification of the proposed activities is included in Appendix E2.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Raised by	Summary of response from EAP
All crossings of national roads to (N2) to be done in accordance with SANRAL's requirements.	Mr. Mike Yorke - Hart SANRAL	Comment noted The recommendations provided have been included in the EMPr and the recommendation section below. Kelly Tucker - SiVEST
Queried as to whether the DEA recommended the specialist studies that were undertaken.	Lerato Mathibela Eskom Distribution	SiVEST suggested the specialist studies to the DEA that they deemed necessary to be undertaken. Based on these recommendations the DEA had no complaints or suggestion regarding the specialist studies. Kelly Tucker - SiVEST
Questioned whether the above mentioned projects requires a Water Use License (WULA).	Lerato Mathibela Eskom Distribution	Yes, a Water Use License will be required. However, this will be undertaken once the areas that require a Water Use License have been identified. Kelly Tucker - SiVEST
What databases the EAP and Specialists had used for their studies. Upon looking through his email ML saw that SiVEST had enquired about the databases that should be used and ML was happy that SiVEST and the specialists were using adequate databases / datasets for the analysis of the study area. Requested that SiVEST send through shapefiles of the proposed powerline corridors There may be some red flags with regards to protected areas, important biodiversity areas, and negotiating with land owners. MTPA would compare the shapefiles against the datasets that they have and they would send comments through to the DEA directly. MTPA is happy for the powerlines to follow existing servitudes as far as possible.	Mervyn Lotter Biodiversity planning MTPA	Comment noted regarding the datasets used. Shapefiles were sent to MTPA on the 28 April 2015. No comments were received at the time that this C&R Report was finalised for the FBAR. KT noted all comments. Kelly Tucker / Jenny Barnard - SiVEST
Your Letter dated 26 March 2015 refers, the application was received on 16 April 2015. You are advised that the application is in the process of being investigated and that you will be advised accordingly of this Department's comments.	Mr R Ryan / Mrs J Reddy KZN Department of Transport, Infrastructure and Regional Services	Comment noted. No comments were received at the time that this C&R Report was finalised for the FBAR. Kelly Tucker / Jenny Barnard - SiVEST
This letter serves as a notice for receipt of the Draft Basic Assessment Report for the Proposed Development, dated 23 March 2015. Should any further information be required, please do not hesitate to contact	Mr DJ Maivha DAFF	Comment noted Kelly Tucker - SiVEST

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<p>this office.</p> <p>The District acknowledges receipt of your BID send for our attention.</p>	<p>Mr. D Hlanyane Senior Manager: Environmental Health and Environmental Services Gert Sibande District Municipality</p>	<p>Comment noted. Kelly Tucker - SiVEST</p>
<p>This serves as a notice of receipt and confirms that your application has been captured in our electronic AgriLand tracking and management system. It is strongly recommended that you use the on-line AgriLand application facility in future.</p>	<p>B N De Lange Director: Land Use and Soil Management DAFF</p>	<p>Comment noted. Kelly Tucker - SiVEST</p>
<p>Mpumalanga Agriculture would like to register as an interested and affected party on the above mentioned project so as to ensure that our member's interests are protected.</p>	<p>Robert Davel. Assistent Bestuurder Mpumalanga Landbou</p>	<p>Comment noted. Kelly Tucker - SiVEST</p>
<p>Queried as to whether these projects were being conducted under the New Environmental regulations.</p>	<p>Tebogo Chauke Eskom Distribution</p>	<p>The DEA stipulated that any applications submitted to the DEA after December 2014 need to be conducted under the new regulations. However, these applications were submitted in December 2013 and then update in January 2014 therefore are being conducted under the NEMA 2010 regulations. Kelly Tucker - SiVEST</p>
<p>Comments and issues raised by Interested and Affected Parties, as well as responses sent by the EAP during the Public Participation Process have been incorporated into the Final Basic Assessment Report and the Comments and Responses chapter (Appendix E3) for review by all registered stakeholders and for submission to the Department of Environmental Affairs.</p>		

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.

The Comments and Response Report (C&RR) is included in 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
Please refer to Appendix E4.					

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

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

Proof that the Authorities and Organs of State received written notification of the proposed activities is included in Appendix E4 of the FBAR. A list of Authorities and Organs of State that were notified about the proposed development and sent the DBAR for review is included in Appendix E4.

6. CONSULTATION WITH OTHER STAKEHOLDERS

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

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

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

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

Refer to Appendix E for a list of registered I&APs, copies of correspondence and minutes of meetings.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

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

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

Activity	Impact summary	Significance	Proposed mitigation
	Direct impacts:		
	Disturbance to and loss of Endangered Chrissiesmeer Panveld. The corridor is completely covered by this vegetation type.	High Negative	<ul style="list-style-type: none"> - Adhere to the recommended alignment: Between waypoints 1 and 2, the power line should be placed along the alignment of the existing power line on the eastern edge of the corridor due to more disturbance in this area, if the existing power line will become redundant. If the existing power line will be retained, the new power line should be placed along the eastern edge of the corridor between waypoints 1 and 2. Between waypoints 2 and 3, the power line should be placed along the north-eastern edge of the corridor where disturbance is high and species richness and quality of Endangered Chrissiesmeer Panveld are low. - Use existing tower structures if possible. - Minimise impact of new monopole structures if these need to be installed. - Avoid any impacts to streams and wetlands and determine an ecologically sound buffer to protect these. - Use existing tracks and roads for installing and servicing the power line. - Ensure that no driving off-road or off-track occurs. - Confine all activities to specific construction and installation sites. - Remove all waste materials from construction and installation sites.
	Indirect Impacts:		
	None identified.		
	Cumulative impacts:		
	None identified.		
Floral	Direct impacts:		
	Loss of floral habitat including sensitive habitat types, fragmentation of habitat.	Medium Negative	<ul style="list-style-type: none"> - Keep the proposed development infrastructure as well as any temporary access roads within designated low sensitivity areas as far as possible. - Minimise wetland crossings to what is absolutely necessary. - Acute angle crossings of wetlands must be minimised. - Restrict vehicles to travelling only on designated roadways to

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Activity	Impact summary	Significance	Proposed mitigation
			limit the ecological footprint of the proposed development activities. <ul style="list-style-type: none"> - All soils compacted as a result of construction activities falling outside of the development footprint areas should be ripped and profiled. - To prevent the erosion of top soils, management measures may include berms, soil traps, hessian curtains and storm water diversion away from areas susceptible to erosion. It must be ensured that topsoil stockpiles are located outside of any drainage lines and areas susceptible to erosion.
Indirect impacts:			
	Loss of floral diversity, increase in alien and invasive floral species	Medium Negative	<ul style="list-style-type: none"> - Species specific and area specific alien and invasive floral eradication recommendations: - Care should be taken with the choice of herbicide to ensure that no additional impact and loss of indigenous plant species occurs due to the herbicide used; - Footprint areas should be kept as small as possible when removing alien plant species; and - No vehicles should be allowed to drive through designated sensitive wetland areas during the eradication of alien and weed species.
	Loss of floral SCC and RDL species	Medium Negative	<ul style="list-style-type: none"> - - Keep the proposed development infrastructure within current servitude areas as far as possible. - Should any RDL or other protected plant species be encountered within the study, the following should be ensured: - If any threatened species will be disturbed, ensure effective relocation of individuals to suitable offset areas; and - All rescue and relocation plans should be overseen by a suitably qualified specialist. - A site specific walk down of the and power line alternative must be performed in the correct season (December to March) prior to construction in order to rescue and relocate any such species. - Should the need arise to obtain permits, this process needs to be undertaken.
	Loss of floral habitat including sensitive habitat types, fragmentation of habitat.	Low Negative (Operational Phase)	<ul style="list-style-type: none"> - Avoid unnecessary clearance of vegetation, especially within sensitive habitat. - Minimise access and maintenance road wetland crossings to what is absolutely necessary. - Acute angle crossings of wetlands must be minimised. - Restrict vehicles to travelling only on designated roadways to limit the ecological footprint of the proposed operational activities. - Monitor access roads and disturbed areas for erosion and implement control measures as necessary.
	Loss of floral diversity, increase in alien and invasive floral species	Low Negative (Operational Phase)	<ul style="list-style-type: none"> - Avoid unnecessary clearance of vegetation, especially within sensitive habitat. - Minimise access and maintenance road wetland crossings to what is absolutely necessary. - Restrict vehicles to travelling only on designated roadways to limit the ecological footprint of the proposed development activities. - Monitor access roads and disturbed areas for erosion and implement control measures as necessary. - Species specific and area specific alien and invasive floral eradication recommendations: - Care should be taken with the choice of herbicide to ensure

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Activity	Impact summary	Significance	Proposed mitigation
	Loss of floral SCC and RDL species	Low Negative (Operational Phase)	<p>that no additional impact and loss of indigenous plant species occurs due to the herbicide used;</p> <ul style="list-style-type: none"> - Footprint areas should be kept as small as possible when removing alien plant species; and - No vehicles should be allowed to drive through designated sensitive wetland areas during the eradication of alien and weed species. <p>- Avoid unnecessary clearance of vegetation, especially within sensitive habitat.</p> <p>- Minimise access and maintenance road wetland crossings to what is absolutely necessary.</p> <p>- Acute angle crossings of wetlands must be minimised.</p> <p>- Restrict vehicles to travelling only on designated roadways to limit the ecological footprint of the proposed development activities.</p> <p>- Monitor access roads and disturbed areas for erosion and implement control measures as necessary.</p> <p>- Should any RDL or other protected plant species be encountered during the operational and maintenance phase, the following should be ensured:</p> <ul style="list-style-type: none"> - If any threatened species will be disturbed, ensure effective relocation of individuals to suitable offset areas; and - All rescue and relocation plans should be overseen by a suitably qualified specialist
<p>Cumulative impacts: None identified.</p>			
Desktop Faunal	<p>Direct impacts: Vegetation clearing, disturbance and the use of heavy machinery and human presence along the power line route during construction is likely to negatively affect resident fauna directly and through habitat loss.</p>	Medium Negative	<ul style="list-style-type: none"> - Construction staff should undergo environmental induction to ensure that they are aware of fauna-related issues and that no fauna are harmed during construction. This pertains especially to fauna such as snakes which are persecuted regardless of the threat they may or may not pose. - The footprint of the development in the vicinity of the rivers should be kept as low as possible and existing access roads should be used wherever possible so that new river crossings are not required. - All hazardous materials should be stored in the appropriate manner to prevent contamination of the site. Any accidental chemical, fuel and oil spills that occur at the site should be cleaned up in the appropriate manner as related to the nature of the spill. - No fires should be allowed within the site as there is a risk of runaway veld fires. - If any parts of site such as construction camps must be lit at night, this should be done with low-UV type lights (such as most LEDs), which do not attract insects and which should be directed downwards. - An ECO should be present during construction to ensure compliance as well as ensure that any affected fauna can be removed to safety. - Any active burrows within the footprint should be checked for fauna before construction commences and should it not be possible to adjust the footprint to avoid such features, then the resident fauna should be relocated or excluded from the burrows so that they are not impacted by construction activities. - All construction vehicles should adhere to a low speed limit (30 km/h) to avoid collisions with susceptible species such as

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Activity	Impact summary	Significance	Proposed mitigation
			snakes and tortoises. <ul style="list-style-type: none"> - Regular dust suppression during construction, especially along access roads which are used frequently. - No activity should be allowed at the site between sunset and sunrise. - Any dangerous fauna (snakes, scorpions etc) that are encountered during construction should not be handled or molested by the construction staff and the ECO or other suitably qualified persons should be contacted to remove the animals to safety. - Holes and trenches should not be left open for extended periods of time and should only be dug when needed for immediate construction. Trenches that may stand open for some days, should have places where the loose material has been returned to the trench to form an escape ramp present at regular intervals to allow any fauna that fall in to escape.
	Indirect impacts:		
	None identified.		
	Cumulative impacts:		
	None Identified		
Surface Water	Direct impacts:		
	Impacts associated with the construction of a lay-down area directly within the wetland and respective buffer zones.	Low Negative	<ul style="list-style-type: none"> - Seasonal scheduling of the construction process: It is important that construction activities must be scheduled to take place over the dry winter season when there is little rainfall and flows are low (June/July/August). - Location of the lay-down area: The location of the lay-down area is not to be within 100m of a drainage line, watercourse or the associated buffer zone. All materials, machinery and vehicles are to be kept in a designated area that is located outside and at least 100m away from the identified surface water resources and the associated buffer zones.
	Towers in Surface Water Resources and Removal of Vegetation for the Stringing of Power lines through Watercourse Riparian Habitat: Drainage Line and Watercourse Riparian Habitat Loss	High Negative	<ul style="list-style-type: none"> - Avoid all Delineated Wetlands. To prevent this potential impact, all delineated wetlands and the associated buffer zones must be avoided to avert wetland loss. This can be achieved with careful and strategic placement of the proposed power line in accordance with the recommendations in this report. - Obtaining Relevant Authorisations and Licenses – Before any construction or removal of soils and vegetation in the delineated wetlands and riparian habitats is undertaken, the relevant water use license and environmental authorisation is to be obtained and conditions adhered to. - Preventing Physical Degradation of Wetlands – A single access route or “Right of Way” (RoW) is to be established to the desired construction area in the wetlands and/or riparian habitat. The width of the RoW must be limited to the width of the vehicles required to enter the wetland (no more than a 3m width). An area around the location where the existing towers are to be removed will be required. This too must be limited to the smallest possible area (no bigger than 20m²) to prevent unnecessary degradation. - The number and type of permissible vehicles or machinery into or near to the sensitive areas must be limited to the bare minimum. Preferably light vehicles are to be utilised where possible. - Where encroachment is absolutely necessary, this should

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Activity	Impact summary	Significance	Proposed mitigation
			<p>be limited to the temporary zone of a wetland.</p> <ul style="list-style-type: none"> - Limiting Removal and Preserving Excavated Soils – Where foundations for the proposed power line structures are to be placed in the wetlands, a 30cm topsoil layer is to be stripped and stockpiled for the post-construction rehabilitation process. All excavated topsoils should be stockpiled separately from subsoils so that it can be placed back in the correct order for rehabilitation purposes. Usually, wetland soils are inappropriate to provide suitably stable infill and often need to be removed and replaced by imported soils of a suitable grade. Wetland soils must only be removed if absolutely required if this is the case. Any of the removed soils and vegetation that are not required should be taken to a registered landfill site that has sufficient capacity to assimilate the spoil. The topsoil is to be used for rehabilitation purposes and should not be removed unless there is surplus that cannot be utilised, in which case excessive topsoils be used in other areas where required. It is important to note that when the soils are reinstated, the sub soils are to be backfilled first, followed by the topsoil. The topsoil contains a natural seedbank from which the affected wetland can naturally rehabilitate. <p>Where the soils are excavated from the sensitive areas, it is preferable for them to be stockpiled adjacent to the excavation pit to limit vehicle and any other movement activities around the excavation areas. These soil stockpiles should be protected from wind and water erosion. This can be done by using a suitable cover to prevent exposure to wind and rain elements.</p> - Preventing Pollution Impacts – Cement mixing is to take place over a bin lined surface or alternatively in the load bin of a vehicle to prevent the mixing of cement with the soil of the wetland. Preferably however, this should be done outside of the wetland and transported in. Importantly, no mixing of cement directly on the surface is allowed in the sensitive wetland and RoW areas. All accidental spills must be cleaned up and removed immediately from the wetland. - Protection of Stockpiled Soils – Stockpiled soils will need to be protected from wind and water erosion. Stockpiled soils are not to exceed a 2m height and are to be bunded by suitable materials. Stacking bricks (approximately 40cm high) around the stockpiled soils can be adopted. Alternatively, wooden planks (also approximately 40cm height) pegged around the stockpiled soils can be used. - Limiting use of Construction Vehicles – When stringing of the proposed power lines takes place through the wetland, it is to be undertaken by hand. Vehicles must not be used for this exercise in order to limit compaction impacts to the soils of the wetland and riparian habitats. - Rehabilitation of RoW areas – The affected RoW areas in the wetlands must be re-instated with the wetland soil that was initially excavated. Additionally, the affected areas must be levelled, or appropriately sloped and scarified to loosen the soil and allow seeds contained in the natural seed bank to re-establish. Preferably scarification is to take place before the spring and summer rainy season and not in the dry season. De-weeding once every three months for a year will need to take place for to allow natural species to

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Activity	Impact summary	Significance	Proposed mitigation
	<p>Human Degradation Impacts: Surface Water Resource Fauna and Flora Physical Degradation</p>	Medium negative	<p>establish sufficiently.</p> <ul style="list-style-type: none"> - Minimising Human Physical Degradation: Construction workers are not allowed in the demarcated the riparian habitats associated with the drainage lines and/or watercourses unless it is in the authorised RoW areas. - Preventing Loss or Harm to Fauna and Flora: No animals are to be hunted, captured, trapped, removed, injured, killed or eaten. Additionally, no riparian vegetation is to be removed, harvested or damaged. Should any party be found guilty of such offences, stringent penalties should be imposed. The appointed Environmental Control Officer (ECO) is to be contacted should the possible removal of any fauna be required during the construction phase. - Preventing the Usage of Riparian Habitats for Sanitation Purposes: No "long drop" or chemical toilets are allowed in the riparian habitats associated with the drainage lines and/or watercourses. Riparian habitats may also not be allowed to be used for sanitation purposes. Suitable temporary chemical sanitation facilities are to be provided. Temporary chemical sanitation facilities must be placed at least 100 meters from the riparian habitats. Temporary chemical sanitation facilities must be placed over a bunded or a sealed surface area and adequately maintained to prevent pollution impacts. - Preventing Water Extraction from Drainage Lines and Watercourses. No water is to be extracted unless a water use license is granted for specific quantities.
	Service Road Establishment and Subsequent Vehicle Degradation Impacts to Riparian Habitats	Low Negative	<ul style="list-style-type: none"> - Preventing Vehicle Degradation Impacts. Service roads must not be planned through wetlands. Alternative routes must be planned and established that circumvent wetlands completely.
Indirect impacts:			
	Vehicle and machinery degradation to the wetland and the associated buffer zones.	Medium Negative	<ul style="list-style-type: none"> - Preventing Physical Degradation of Wetlands – The wetland and the associated buffer zone are to be designated as "highly sensitive" and any impact must be limited to the minimum possible extent where construction is to take place in the wetland. - Construction workers are only allowed in the servitude area of the proposed power lines and not into the surrounding watercourses and buffers. The required construction areas in the wetland and the associated buffer zones are to be clearly demarcated and no access beyond these areas is to be allowed. - A single access route or "Right of Way" (RoW) is to be established to the desired construction area in the wetland. The width of the RoW must be limited to the width of the vehicles required to enter the wetland (no more than a 3m width). - The number and type of permissible vehicles or machinery into or near to the sensitive areas must be limited to the bare minimum. Preferably light vehicles are to be utilised where possible. - Preventing Soil and Wetland Contamination - All vehicles and machinery are to be checked for oil, fuel or any other fluid leaks before entering the construction areas. All vehicles and

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Activity	Impact summary	Significance	Proposed mitigation
			<p>machinery must be regularly serviced and maintained before being allowed to enter the construction RoW within the highly sensitive areas. No fuelling, re-fuelling, vehicle and machinery servicing or maintenance is to take place in the sensitive areas. The construction site is to contain sufficient safety measures throughout the construction process. These include, but are not limited to, oil spill kits and fire extinguishers. Fuel, oil or hazardous substances storage areas must be bunded to prevent oil or fuel contamination of the ground and/or nearby surface water resource or associated buffer zone.</p> <ul style="list-style-type: none"> - No hazardous materials are to be stored in or brought into the sensitive areas. Should a designated storage area be required, the storage area must be placed at the furthest location from the sensitive areas. Appropriate safety measures as stipulated above must be implemented.
	<p>Increased storm water run-off and increased erosion and sedimentation impacting of wetlands and the associated buffer zones.</p>	<p>Low Negative</p>	<ul style="list-style-type: none"> - Preventing Increased Run-off and Sedimentation Impacts. Vegetation clearing should take place in a phased manner, only clearing the areas that will need to be constructed on immediately. Vegetation clearing must not take place in areas where construction is to only take place in the distant future. Vegetation must not be completely removed and must be undertaken according to standard Eskom vegetation clearance standards and policies where required. - Adequate structures must be in place (temporary or permanent where necessary) to control runoff, erosion and off and sediment volumes. The use of silt fencing and/or sandbags or hessian "sausage" nets can be used to prevent erosion in susceptible construction areas. - All impacted areas must be adequately sloped to prevent the onset of erosion. These erosion measures must be on hand during the construction phase. In the case of bare sloped areas, sandbags and silt fences, spaced at regular intervals, will need to be installed.
	<p>Degradation Impacts: stringing of power lines through surface water resources</p>	<p>Low negative</p>	<ul style="list-style-type: none"> - Preventing Vehicle Degradation Impacts. Previously, recommendations to prohibit vehicle access into wetlands must be upheld. Stringing of the power lines are therefore to be undertaken by hand and a maximum of fifteen (15) workers are allowed to cross through the wetlands only for the stringing of the power line. Once this has been undertaken, access must be strictly prohibited in the highly sensitive areas. The ECO must be on site to observe the stringing process through the wetlands to ensure that potential impacts are minimised and where required, adequate mitigation measures to address impacts are undertaken.
Cumulative impacts:			
	<p>Wetland Reliant Avifauna Power Line Collision and Electrocutation Impacts</p>	<p>High</p>	<ul style="list-style-type: none"> - Preventing Avi-fauna Collisions and Electrocutations. During the construction phase, it is critical that the stretches of power lines that are within or in close proximity (approximately 200m) to any riparian habitat are fitted with flight deviators or bird anti-collision devices (whichever is more appropriate – refer to Avi-fauna Specialist Study) to prevent impacts to avi-fauna. The fitment of the devices or deviators must take place on the ground before stringing the power lines takes place. Sufficient insulation must also be fitted to the towers structures to prevent electrocution. Finally, bird friendly tower structures as per Eskom's designs can be considered to further mitigate collision and electrocution impacts

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Activity	Impact summary	Significance	Proposed mitigation
Geographical and physical Aspects	Direct Impacts		
	None identified.		
	Indirect Impacts		
	Soil erosion through vegetation clearance and soil compaction by heavy duty construction vehicles	Low negative	Refer to EMPr attached in Appendix G: <ul style="list-style-type: none"> - All vehicles to remain within the designated vehicle tracks; and - Minimum / no movement in areas already eroded.
	Contamination of soils through indiscriminate disposal of construction waste and accidental spillage of petroleum products.	Low negative	Refer to EMPr in Appendix G: <ul style="list-style-type: none"> - Storage of any materials shall not take place within 32m of any watercourses or sensitive environments. - Fuel, oil and any other hazardous substances and harmful materials shall be stored in suitable containers within adequately bunded areas (with 110% of the capacity of the volume of the container) in a dry, secure environment, with concrete or sealed flooring. - Material Safety Data Sheets shall be kept for all hazardous materials and substances and a copy of the Material Safety Data sheets shall be made available to all workers to ensure that the required safe handling and necessary precautions are taken when using the materials. - The PC will ensure that materials storage facilities are cleaned/ maintained on a regular basis, and that leaking containers are disposed of in a manner that allows no spillage onto the bare soil or surface water.
Cumulative Impact			
None identified.			
Agricultural Potential and Soils	Direct impacts:		
	Loss of agricultural land and / or production as a result of the proposed power line construction	Low Negative	<ul style="list-style-type: none"> - Due to the overarching route characteristics, and the nature of the proposed development, viable mitigation measures are limited and will most likely revolve around erosion control: - Clearing activities should be kept to a minimum. - In the unlikely event that heavy rains are expected, activities should be put on hold to reduce the risk of erosion. - If additional earthworks are required, any steep or large embankments that are expected to be exposed during the 'rainy' months should be armoured with fascine like structures. - If earth works are required then storm water control and wind screening should be undertaken to prevent soil erosion. - Interact with landowners during the routing process. - The utilisation of existing towers will further reduce potential impacts. - If active subsistence fields are encountered they should be spanned as far as possible. Towers should be positioned at the edge of active fields. Following existing roads and utilising the edge of road servitudes is highly recommended due to the existing impacts associated with these areas.
	Indirect impacts:		
	None identified.		
	Cumulative impacts:		
None identified.			

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Activity	Impact summary	Significance	Proposed mitigation
Avifauna Impacts	Direct impacts:		
	Collision of birds with overhead power line cables, in particular the earth wire.	Low Negative	<ul style="list-style-type: none"> - High risk sections of line should be fitted with the best Eskom approved anti bird collision line marking device available at the time of construction. These devices should be installed on the earth wire according to Eskom standards. These sections of line have been identified by this report. - It will be important for Eskom to report all bird collisions detected during maintenance line patrols, so that the significance of this impact and the effectiveness of mitigation can be accurately evaluated.
	Electrocution of birds on pylons/towers	Low Negative	<ul style="list-style-type: none"> - It is essential that the monopole structure be used with an Eskom Bird Perch to provide safe perching space for large birds well above the dangerous hardware. There is a likelihood of large raptors perching on the pylons occasionally. - It will be important for Eskom to report all bird electrocutions detected during maintenance line patrols, so that the significance of this impact and the effectiveness of mitigation can be accurately evaluated.
	Indirect impacts:		
	Disturbance of birds in the area during construction of the proposed project	Low Negative	<ul style="list-style-type: none"> - General environmental best practices should suffice for reducing the disturbance as far as possible. These include; strict management of staff, vehicles and machinery on site; and completing construction within the shortest possible time.
	Destruction and alteration of habitat available to birds in the area during construction of the proposed project	Low Negative	<ul style="list-style-type: none"> - All of the natural vegetation along the servitude should be protected as far as possible, although it is acknowledged that some removal is inevitable. It is recommended that vegetation removal is kept to an absolute minimum however. - In addition to the above exercise, general environmental best practices should suffice for reducing the disturbance of vegetation as far as possible. These include; strict management of staff, vehicles and machinery on site.
Cumulative impacts:			
None Identified			
Heritage	Direct impacts:		
	None Identified. No heritage sites occur on or near footprint		
	Indirect impacts:		
	None Identified. No heritage sites occur on or near footprint		
Cumulative impacts:			
None Identified. No heritage sites occur on or near footprint			
Visual	Direct Impacts		
	Large construction vehicles and equipment during the construction phase may change the visual character of the study area and expose sensitive receptors to visual impacts associated with the construction phase.	Medium Negative	<ul style="list-style-type: none"> - Carefully plan to reduce the construction period. - Locate construction camp and storage areas in zones of low visibility i.e. behind tall trees or in lower lying areas. - Minimise vegetation clearing and rehabilitate cleared areas as soon as possible. - Maintain a neat construction site by removing rubble and waste materials regularly. - Make use of existing gravel access roads where possible.
	Indirect impacts:		
	None Identified		
Cumulative impacts:			

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Activity	Impact summary	Significance	Proposed mitigation
	Change to the visual character of the surrounding area and visual impact on potentially sensitive visual receptors that may perceive the power line to be an unwelcome intrusion.	Low negative	<ul style="list-style-type: none"> - Align the power line as far away from potentially sensitive receptor locations as possible. - Align the power line to run parallel to existing power lines.
Socio-economic	Direct impacts		
	Positive economic impacts as a result of higher coal export tonnage, as well as temporary and permanent employment opportunities, thereby contributing positively to the expansion and strengthening of local economic activities.	High Positive	N/A: Mitigation not required.
	Indirect impacts:		
	None identified.		
Cumulative impacts:			
None identified.			
Dust	Direct impacts:		
	None identified.		
	Indirect impacts:		
	Dust impacts on surrounding environment associated with construction activities	Low negative	<ul style="list-style-type: none"> - Generation of dust shall be minimised and dust nuisance for the surrounding areas shall be kept to a minimum wherever possible. - Dust from exposed soil surfaces shall be minimised at all times, only using water spray during extremely windy conditions - Reasonable measures must be undertaken by the contractor to ensure that any exposed areas and material stockpiles are adequately protected against the wind. - Dust screens of a suitable height should be erected wherever required and possible. - All exposed surfaces should be minimised in terms of duration of exposure to wind and stormwater.
Cumulative impacts:			
None identified.			
Noise	Direct impacts:		
	None identified.		
	Indirect impacts:		
Noise impacts on surrounding environment associated with construction activities (Construction vehicles and equipment)	Low Negative	<ul style="list-style-type: none"> - The contractor shall adhere to the local by-laws and regulations regarding the noise and associated hours of operations. - The contractor shall limit noise levels (e.g. install and maintain silencers on machinery). The provisions of sans 1200a sub-clause 4.1 regarding "built-up" area shall apply to all areas within audible distance of residents whether in urban, peri-urban or rural areas. - Construction and demolition activities generating output of 85db or more, shall be limited to normal working hours and 	

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Activity	Impact summary	Significance	Proposed mitigation
			not allowed during weekends. - Should the contractor need to work outside normal working hours, any affected individuals shall be informed prior to the work taking place. - No amplified music shall be allowed on site.
Cumulative impacts:			
None identified.			
Waste	Direct impacts:		
	None identified.		
	Indirect impacts:		
	Generation of additional waste/ litter and building rubble/hazardous materials during the construction phase	Medium Negative	Waste management mitigation measures as detailed in the EMP (attached in Appendix G) includes: <ul style="list-style-type: none"> - Solid waste (construction waste and builders rubble) will be collected by independent contractors and disposed of at the registered licensed municipal landfill site in with proof of safe disposal as required. - The contractor shall ensure that all litter is collected daily from the work area. Similarly, all bins shall be emptied daily and the waste disposed of at a permitted landfill site. - The contractor shall ensure that the construction site, working and eating areas are maintained in a clean, hygienic and orderly state. - Separate bins should be provided for various materials to facilitate recycling. The bins should have liner bags for easy control and safe disposal of waste. - The excavation and use of rubbish pits on site is forbidden. - The burning of waste is forbidden. - All vehicles and equipment must be maintained in a good condition in order to minimise the risk of leakage and possible contamination of the soil or storm water by fuels, oils and hydraulic fluids. - Sufficient quantities of suitable hydrocarbon absorption or remediation materials must be present on site at all times.
	Cumulative impacts:		
None identified.			
No-go option			
Socio-economic	Direct impacts:		
	Socio-Economic -	High Negative	Negative socio-economic impacts as a result of inadequate supply of electricity to the Transnet railway system thereby preventing an increased export tonnage of coal. This will prevent job creation in the Ulundi area and hinder South Africa's economic growth in the coal export sector
	Indirect impacts:		
	None identified.		
	Cumulative impacts:		
None identified.			

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

2. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with

specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

On-site and off-site alternatives have also not been assessed. The main reasons for not evaluating on-site and off-site alternatives include:

The property on which or location where it is proposed to undertake the activity:

No site alternatives have been considered for this project as the placement of the proposed power line is dependent on a number of considerations, all of which have been identified as being favourable at the proposed site location. These considerations include the existing operational power lines in the area, grid connections, existing substations and access to the site. In addition, Transnet have identified traction substations and associated power lines that need to be upgraded in order to facilitate the high demand for coal exports which directly places increased demand on the countries energy supply.

Considering that the proposed development is a power line rebuild the proposed development site is the only feasible option as it is a minor section of the existing line that will be upgraded. The project site also has advantageous grid connection potential through the existing Uitkoms Substation and Antra T-off. The site is also easily accessible from the existing access road to the Camden Coal Fired Station. The existing power line corridor is therefore considered highly suitable for the proposed development and no other locations or corridors are being considered. It must be noted that the 500m wide corridor forms part of the assessment of the proposed power line rebuild to allow for some maneuverability where required.

The type of activity to be undertaken:

No feasible and reasonable activity alternative exists therefore activity alternatives cannot be considered. This is due to the fact that the proposed activity is the rebuild of an existing power lines in order to meet the energy required by Transnet to increase their coal output. The proposed development is activity specific in that power lines are required to transmit and distribute electricity,

The design or layout of the activity:

Various environmental specialists have assessed the site within the 500m assessment corridor and have included the identification of sensitive areas. The identified sensitive areas will be used to guide the exact location of the power line rebuild in conjunction with, landowner negotiations and technical constraints. Additionally, there are various monopole tower types being considered for the proposed development. Each tower design type will have very little to no variation in environmental impacts between the different tower design types, as they will occupy relatively the same footprint size and have the same tower height. Additionally, the type of monopole towers to be used will be determined by technical constraints and ultimately determined by the engineers. Therefore no feasible or reasonable design or layout alternatives were assessed in this BA.

The technology to be used in the activity;

There are four (4) construction strategies being applied for in this BA. The technology options include a servitude swap; line bypass, line section bypass or a servitude widening. The choice of technology used will ultimately be determined by the land owner / servitude negotiations process and technological constraints at a later stage. As it is envisaged that any power line rebuild may warrant a combination off all four construction strategies based on the land owner / servitude negotiation process and technical constraints. It is therefore important to note that the environmental authorisation should not limit any of the above options. It is noted that all four construction strategies would need to be considered within the environmental considerations / constraints occurring within

the 500m corridor. Such constraints can be managed via the site specific EMPr and implemented by an environmental control officer. The selection of the four construction strategies will be informed by the public participation process and the land owner negotiations. Therefore no technology alternatives were assessed as part of this BA.

The operational aspects of the activity; and

The proposed development is operationally specific in that the operation of power lines are required for the proposed development

The option of not implementing the activity.

The option of not implementing the activity, or the ‘no-go’ alternative, has been considered in this BA. The No-Go Alternative refers to the option of not implementing the proposed infrastructure development and ultimately the continuation of the current *status quo*. In order for Transnet to accomplish the increased demand for coal and the associated mining activities they need to upgrade their power supply to their various traction substations between Ermelo and Richards Bay. This will facilitate the introduction of the new, larger locomotives that will be added to increase the volume of coal being transported and exported. Should this development not proceed, this will result in the electricity demands not being met. This would be detrimental as South Africa is under immense pressure to provide electricity to meet the currently growing electricity demand in the country. Although the potential environmental issues, such as habitat destruction, would not occur if the project did not go ahead, the socio economic benefit of the proposed project should not be overlooked. The project would assist in achieving South Africa’s goals in terms of energy security which in turn would promote local economic development.

Conclusion:

Given the above motivation, no feasible and reasonable alternatives other than ‘(f) the option of not implementing the activity’ could be proposed for assessment. However, a 500m corridor was provided to specialists for assessment. The reason being, that it is likely that the proposed power line may need to be shifted for the final route selection due to environmental, social and technical reasons. The “No-go” option has however been assessed, but due to the need of the proposed project this has been ruled out.

Ultimately, the following impacts for each phase of the proposed development are likely to take place but the severity has been limited in most instances, should the proposed mitigation measures be implemented.

Power Line

Floral	Based on the floral assessment it is evident that there are three possible impacts on the floral ecology within the study area. These include the impact on habitat for floral species; floral diversity and the impact on important species. From the impact assessment it is evident that impacts in the construction phase will be of medium significance without mitigation. If mitigation measures are adhered to, the impact significance may be reduced to a low level. Anticipated impacts in the operational and maintenance phase are likely to be of low significance without mitigation. If mitigation measures are adhered to, the impact significance may remain at a low level.
Fauna	There are few sensitive habitats present along the route and it is only the earth dams and drainage lines which are identified as being of particular significance for fauna. As the footprint of the power line can be kept to a very low extent, it is likely that the impacts associated with the development can be maintained at a low level

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	through the application of basic mitigation and avoidance measures. There are no impacts associated with the development which area likely to represent a red-flag for the development or which cannot be mitigated to a low level.																																																
Surface Water	<p>Ultimately, seven (7) watercourses were verified in the field. More specifically, two (2) unchannelled valley-bottom wetland, one (1) man-made impoundment, two (2) drainage channels, and two (2) slime dams were identified. Adequate buffer zones were applied to the identified watercourses in accordance with the Gauteng Minimum Requirements for Biodiversity Assessments (GDACE, 2009).</p> <p>Foreseen potential negative impacts in terms of the pre-construction, construction, operation and decommissioning phases of the proposed development were identified and assessed. The impacts for each phase of the proposed development are summarised as follows:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: left;">PRE-CONSTRUCTION PHASE</th> </tr> <tr> <th style="width: 60%;">Site Specific Impacts</th> <th style="width: 20%;">Pre-mitigation Rating</th> <th style="width: 20%;">Pre-mitigation Rating</th> </tr> </thead> <tbody> <tr> <td>Construction Lay-down Area</td> <td>Low</td> <td>Low</td> </tr> <tr> <th colspan="3" style="text-align: left;">CONSTRUCTION PHASE</th> </tr> <tr> <th>Generic Impacts</th> <th>Pre-mitigation Rating</th> <th>Pre-mitigation Rating</th> </tr> <tr> <td>Wetland Habitat Loss</td> <td>High</td> <td>Low</td> </tr> <tr> <th>Site Specific Impacts</th> <th>Pre-mitigation Rating</th> <th>Pre-mitigation Rating</th> </tr> <tr> <td>Vehicle and Machinery Degradation</td> <td>Medium</td> <td>Low</td> </tr> <tr> <td>Human Degradation of Wetland Flora and Fauna</td> <td>Low</td> <td>Low</td> </tr> <tr> <td>Increased Run-off and Sedimentation</td> <td>Low</td> <td>Low</td> </tr> <tr> <td>Stringing Power Lines through Wetlands</td> <td>Low</td> <td>Low</td> </tr> <tr> <th colspan="3" style="text-align: left;">OPERATION PHASE</th> </tr> <tr> <th>Impact</th> <th>Pre-mitigation Rating</th> <th>Pre-mitigation Rating</th> </tr> <tr> <td>Service Roads through Wetlands</td> <td>Low</td> <td>Low</td> </tr> <tr> <th>Site Specific Impacts</th> <th>Pre-mitigation Rating</th> <th>Pre-mitigation Rating</th> </tr> <tr> <td>Power Line Collision and Electrocution Impacts to Avifauna</td> <td>Low</td> <td>Low</td> </tr> </tbody> </table> <p>A final wetland walk-down study is to be conducted once the final power line route and tower positions have been planned. A Present Ecological Status (PES) and Ecological Importance and Sensitivity (EIS) assessments may also need to be undertaken as part of the final wetland walk-down study should a water use license be required to inform the licensing process. Once this information has been obtained, recommendations on the final placement of towers must be incorporated into the power line route before alignment/route finalisation and construction commences.</p>	PRE-CONSTRUCTION PHASE			Site Specific Impacts	Pre-mitigation Rating	Pre-mitigation Rating	Construction Lay-down Area	Low	Low	CONSTRUCTION PHASE			Generic Impacts	Pre-mitigation Rating	Pre-mitigation Rating	Wetland Habitat Loss	High	Low	Site Specific Impacts	Pre-mitigation Rating	Pre-mitigation Rating	Vehicle and Machinery Degradation	Medium	Low	Human Degradation of Wetland Flora and Fauna	Low	Low	Increased Run-off and Sedimentation	Low	Low	Stringing Power Lines through Wetlands	Low	Low	OPERATION PHASE			Impact	Pre-mitigation Rating	Pre-mitigation Rating	Service Roads through Wetlands	Low	Low	Site Specific Impacts	Pre-mitigation Rating	Pre-mitigation Rating	Power Line Collision and Electrocution Impacts to Avifauna	Low	Low
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Agricultural Potential and Soils	- The results of the desktop study, field verification and agricultural assessment indicate that agriculture (unimproved grazing) is the dominant land use and that high value agricultural resources are absent from the assessment area. Essentially the Uitkoms Sub-Project does not influence any important or high																																																

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	<p>value agricultural areas. This fact allows for easier and a low impact agricultural routing.</p> <ul style="list-style-type: none"> - The majority of land influenced by the 500 m power line corridors is classified, at best, as moderate potential grazing land. - There are no centre pivots, irrigation schemes or active agricultural fields which will be influenced by the proposed developments, and as such, there are no fatal flaw areas for the assessment corridors. - Due to current agricultural value and practices the crossing of agricultural land by the power line will have a minor impact on agricultural production as normal activities can continue to take place under the power lines. This is due to the fact that the land is used for grazing and this type of activity is permitted in power line servitudes. - If the recommendations and mitigation measures outlined are implemented then the proposed developments will have a very limited impact on agricultural production.
Heritage	<ul style="list-style-type: none"> - No heritage resources occur on the footprint - Therefore there are no major concerns or preferences.
Avifauna	<p>The proposed power line is relatively short, and situated in a highly disturbed area due to mining and power generation activities. Although grassland and some wetland are present on site it is not considered likely to regularly attract Red Listed bird species. This means that the significance of any impacts of the proposed power line will be lower. Despite this it is still considered necessary to provide some mitigation for impacts on common species or occasional visits by threatened bird species. Mitigation has been recommended for both bird collision and electrocution and it is believed that if this mitigation is implemented this project will have an acceptable level of impact on the avifauna of the area.</p>
Visual	<p>The Visual Impact Assessment conducted for the proposed rebuild of the 88kV power line has demonstrated that the visual character in the study area has been visually transformed. It is unlikely that the study area is typically valued or utilised for its natural scenic value and therefore very few visually sensitive receptors were identified during the fieldwork. A desktop investigation revealed that several farmsteads are present within the study area; however they are unlikely to perceive the proposed rebuilt power line to be an unwelcome intrusion as it would correspond with the linear elements created by the existing 88kV power line.</p> <p>The overall significance of the visual impacts as a result of the proposed power line was assessed according to SiVEST's impact rating matrix. The assessment revealed that from a visual perspective the significance of the impact would be low, as rebuilding the existing 88kV power line would impact the area in a way that is barely perceptible as the rebuilt line would either be routed to follow the existing alignment or it would be aligned within relatively close proximity to existing power lines within the 500m wide corridor.</p>
Socio-Economic	N/A
No-go alternative (compulsory)	
Socio-Economic	<ul style="list-style-type: none"> - Negative socio-economic impacts as a result of inadequate supply of electricity to the Transnet railway system thereby preventing an increased export tonnage of coal. This will prevent job creation in the Ulundi area and hinder South Africa's economic growth in the coal export sector.

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)?



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.

Recommendations of the Floral Specialist

Development footprint

- The boundaries of the development footprint areas are to be clearly defined and it should be ensured that all activities remain within defined footprint areas.
- Edge effects of all construction and operational activities, such as erosion and alien plant species proliferation, which may affect floral habitat, need to be strictly managed.
- No dumping of waste material should be allowed within the study area at any stage of the development, and all building materials should be removed when construction is completed. Designated areas should be set out for waste material and regularly removed to an appropriate authorised dumping facility.

Flora

- Proliferation of alien and invasive species is expected within any disturbed areas. These species should be eradicated and controlled to prevent their spread beyond the development footprint areas. Alien plant seed dispersal within the top layers of the soil within footprint areas, has to be controlled.
- Species specific and area specific eradication recommendations:
 - Care should be taken with the choice of herbicide to ensure that no additional impact and loss of indigenous plant species occurs due to the herbicide used.
 - Footprint areas should be kept as small as possible when removing alien plant species.
- Two (2) of the RDL species for the QDS are likely to occur within the study area, namely *Crinum bulbispermum* and *Gunnera perpensa*. Furthermore, several other species protected under the Mpumalanga Nature Conservation Act (MNCA) (Act 10 of 1998), such as species in the families Orchidiaceae, Iridaceae and Liliaceae, are highly likely to occur within the study area, especially in the wetland habitat unit, and if any of these are to be disturbed, permits must be obtained from the Mpumalanga Tourism and Parks Agency (MTPA).
- Thus, it is recommended that a site-specific walkdown of the preferred power line alternative is performed in the correct season (December to March) prior to construction in order to rescue and relocate any such species.
- Should any other floral SCC or RDL species be encountered within study area, the following should be ensured:
 - If any threatened species, or nationally or provincially protected floral will be disturbed, ensure effective relocation of individuals to suitable similar habitat. Arrangement with the relevant authorities needs to take place to rescue and relocate the species.
 - All rescue and relocation plans should be overseen by a suitably qualified specialist.

Recommendations of the Surface Water Specialist:

- Firstly, the newly proposed power line construction should not take place within any of the delineated watercourses. Where the proposed development is to take place within an identified wetland, this development should take place within the narrowest point of the wetland, as to minimize impact to the watercourses. Ideally, the proposed power line should route around or away from wetlands where possible.
- Furthermore, it is recommended that all power lines routed near or span across wetlands should be equipped with bird anti-collision devices and flight deviators.
- Since it will be required that at the very least one or more wetlands (should any of the other proposed alternatives be selected) will need to be crossed, consultation with the Department of Water Affairs will be required to determine the need for any authorisations (for example, a General Authorisation) or licenses (for example, a Water Use License) once the final tower positions have been determined. Given the above, it will be likely that a follow-up wetland specialist assessment will need to be undertaken that meets with the requirement of the required authorisation or license. As a worst case scenario, should a water use license be required, the scope of works that must be included in the assessment will need to encompass a Present, Ecological Status assessment, an Ecological Importance and Sensitivity assessment as well as an Ecosystem Services assessment. This is recommended to take place as part of a final wetland walk-down assessment prior to the finalisation of the proposed power line to inform the final placement of the proposed development.
- In the context of the proposed development, the potential environmental and water legislative implications were explored. It was identified that a water use licence in terms of water uses 21(c) and 21(i) under the NWA is likely to be required where the proposed route cannot span or be re-routed away from the respective wetlands. Moreover, it was identified that environmental authorisation is also likely to be required with regards to Activity 11 and 18 as stipulated in Government Notice R. 544 Listing Notice 1 of the EIA Regulations (2010). However, the determining authorities (DEA and DWA) should be contacted to provide final comment and establish whether the legislated water uses and environmental activities are applicable to the proposed development.

Recommendations of the Agricultural Potential and Soils Specialist

- Storage of any materials shall not take place within 32m of any watercourses or sensitive environments.
- Fuel, oil and any other hazardous substances and harmful materials shall be stored in suitable containers within adequately bunded areas (with 110% of the capacity of the volume of the container) in a dry, secure environment, with concrete or sealed flooring.
- Material Safety Data Sheets shall be kept for all hazardous materials and substances and a copy of the Material Safety Data sheets shall be made available to all workers to ensure that the required safe handling and necessary precautions are taken when using the materials.
- The PC will ensure that materials storage facilities are cleaned/ maintained on a regular basis, and that leaking containers are disposed of in a manner that allows no spillage onto the bare soil or surface water.
- Due to the overarching route characteristics, and the nature of the proposed development, viable mitigation measures are limited and will most likely revolve around erosion control:
- Clearing activities should be kept to a minimum.
- In the unlikely event that heavy rains are expected, activities should be put on hold to reduce the risk of erosion.
- If additional earthworks are required, any steep or large embankments that are expected to be exposed during the 'rainy' months should be armoured with fascine like structures.
- If earth works are required then storm water control and wind screening should be undertaken to prevent soil erosion.
- Interact with landowners during the routing process.

- The utilisation of existing towers will further reduce potential impacts.

Recommendations of the Avifauna Specialist

- General environmental best practices should suffice for reducing the disturbance as far as possible. These include; strict management of staff, vehicles and machinery on site; and completing construction within the shortest possible time.
- All of the natural vegetation along the servitude should be protected as far as possible, although it is acknowledged that some removal is inevitable. It is recommended that vegetation removal is kept to an absolute minimum however.

Recommendations of the Heritage Specialist

- No heritage resources were found within the proposed development footprint
- The proposed development may proceed from a heritage perspective

Recommendations of the Visual Specialist

- Carefully plan to reduce the construction period.
- Locate construction camp and storage areas in zones of low visibility i.e. behind tall trees or in lower lying areas.
- Minimise vegetation clearing and rehabilitate cleared areas as soon as possible.
- Maintain a neat construction site by removing rubble and waste materials regularly.
- Make use of existing gravel access roads where possible.
- Align the power line as far away from potentially sensitive receptor locations as possible.
- Align the power line to run parallel to existing power lines

General Recommendations of the EAP

- All feasible mitigation measures recommended by the various specialists should be strictly implemented, where applicable to the authorised power line alignment.
- A Final Site-Specific EMPr should be approved by DEA prior to construction, which will need to include detailed specialist reports and mitigation measures for the authorised powerline corridor, including the positioning of the structures and the substation.
- It is recommended that a five (5) year validity period be granted for the Environmental Authorisation

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.

Jenny Barnard - **SIVEST (Pty) Ltd**

NAME OF EAP



SIGNATURE OF EAP

11 June 2015

DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix D1: Biodiversity Impact Assessment

Appendix D2: Desktop faunal Review

Appendix D3: Surface Water Impact Assessment

Appendix D4: Agricultural Potential and Soils Assessment

Appendix D5: Avifauna

Appendix D6: Heritage Impact Assessment

Appendix D7: Visual Impact Assessment

Appendix E: Public Participation

Appendix E1: Proof of Advertisements and Site Notices

Appendix E2: Proof of Written Notification to Stakeholder

Appendix E3: Comments and Response Report **(To be included in the FBAR)**

Appendix E4: Proof of Written Notification to Authorities and Organs of State

Appendix E5: I&APs Database

Appendix E6: Correspondence and Meeting Minutes **(To be included in the FBAR)**

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

Appendix J1: Competent Authority Consultation

Appendix J2: Coordinate Spreadsheets

Appendix J3: Eskom Guideline Documents

List of abbreviations

BA	Basic Assessment
BAR	Basic Assessment Report
BSA	Basic Social Assessment
C&RR	Comments and Response Report
CBA	Critical Biodiversity Area
ESA	Ecological Support Area
DAFF	Department of Agriculture, Forestry and Fisheries
DBAR	Draft Basic Assessment Report
DS	Distribution Station
DWA	Department of Water Affairs
EMF	Electric and Magnetic Fields
EMPr	Environmental Management Programme
FBAR	Final Basic Assessment Report
GIS	Geographic Information System
GN	Government Notice
HIA	Heritage Impact Assessment
I&AP	Interested and Affected Party
IDP	Integrated Development Plan
kV	Kilovolt
MTS	Main Transmission Substation
NCDTEC	Northern Cape Department of Environmental Affairs and Nature Conservation NEMA National Environmental Management Act, 1998 (Act No.107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NFA	National Forests Act, 1998 (Act No. 84 of 1998)
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999)
NNR	No Natural Area Remaining
NPAES	National Protected Area Expansion Strategy
NWA	National Water Act, 1998 (Act No. 36 of 1998)
ONA	Other Natural Area
PPP	Public Participation Process
PV	Photovoltaic
REIPPP	Renewable Energy Independent Power Producer Programme
SAHRA	South African Heritage Resources Agency
SANBI	South African National Biodiversity Institute

BASIC ASSESSMENT REPORT

SANRAL	South African National Roads Agency SOC Limited
SDF	Spatial Development Framework
SG	Surveyor General
SOC	State Owned Company