environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

	(For official use only)
File Reference Number:	
Application Number:	
Date Received:	

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

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of **1 September 2012**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.
14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included on the electronic copy of the report submitted to the competent authority.

SECTION A: ACTIVITY INFORMATION

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

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

1. PROJECT DESCRIPTION

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

The construction of a ± 60km 88kV power line from Warden Rural substation to Vrede Municipal substation. The trigger for this project is that it takes long for the Standerton line (which supplies Vrede Munic.) to be fixed, repaired, or attended to and leaves customers at Vrede and surrounding consumers without electricity for extended times with its negative consequences in the event of breakdowns.

The proposed line will therefore, only be used in emergency situations, i.e. if Vrede loses supply from the Standerton line then the new line will kick in while the main source is been attended to and therefore, will not be connected to the grid permanently. The project will be constructed with monopole power structures.

The total servitude width of an 88kV line without any other line around it will be 22m (i.e. 11m on each side from the centre line) and the average span length between poles will be 250m at the most. When an 88kV runs parallel to an existing 22kV power line the distance between the 2 power lines must be 15m calculated from the centre line of each power line.

Typical Monopole Power Structure

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

Listed activity as described in GN R.544, 545 and 546	Description of project activity
Example: ***GN R.544 Item 11(3): The construction of a bridge 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.***	***A bridge measuring 5 m in height and 10m in length, no wider than 8 meters will be built over the Orange river***
The ***construction of facilities or infrastructure for the transmission and distribution of electricity*** triggers a listed activity according to the Environmental Impact Assessment (EIA) Regulations, 2010 and it must be adhered to in terms of Sections 24(2)(a) and 24(d) of the National Environmental Management Act (NEMA), Act no 107 of 1998. The proposed triggered activity is listed in: **Listing Notice 1, R544 of June, 2010:**	
• ***Activity No 10(i):*** The construction of facilities or infrastructure for the transmission and distribution of electricity outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts;	The construction of a ± 60km 88kV power line from Warden Rural substation to Vrede Municipal substation. The total servitude width of the proposed 88kV line without any other line around it will be 22m (i.e. 11m on each side from the centre line) and the average span length between poles will be 250m respectively.
• ***Activity No 11(xi):*** Infrastructure or structures covering 50 square metres in size, where such construction occurs within a watercourse or within 32metres of a watercourse, measured from the edge of the watercourse, excluding where such construction will occur behind the development set back line.	Four rivers are crossing the route through which the proposed power line is to be constructed. The rivers are Holspruit, Cornelius, Venterspruit and Grootspruit.
According to this listing, the **Applicant** is required to carry out a Basic Assessment Process.	

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.

Two alternative routes were identified and investigated. The following is the summary of the routes.

a) Site alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
Warden-Vrede proposed power line: **Alternative 1** will exit from the Warden substation towards the N3 Durban road. The line will cross over the National road along with the other existing lines and take a bend ±850m to follow the N3 road over the R714 and towards Warden town along the western side. It then proceeds alongside the N3 and proceed towards the Warden Cemetery. The line bypasses along the cemetery area which is located ±2km from the bend to the Warden substation over the N3. The route then leaves the N3 and follows the R103 in a northerly direction, and cross over the road (R103) to the eastern side. It runs through a number of properties until it reaches the property Eerstegeluk 1797 where it bends and crosses over the R103 into the property Newmarket 260. It then bends to the Northern direction again along the R103 to a point where Alternative 2 in this project divert with the existing Eskom HV Lines into the property Bitterwater just after passing Spitskop 1226.		

The bend cuts through the property Palmiet 585 to cross over the R34 into property Brakleegte 294 and proceed to the East along the R34 till it reaches property Krynaauwslust No. 275 where it again meets Alternative 2. Alternative 1 proceeds along the property Frederiksdal 927 along the R34 towards Vrede town. It then leaves R34 and runs along the R546 till the roads intersection where it crosses over to the existing Vrede Munic 88/22/11kV substation which is located along the outskirts of Vrede town and connects. **N.B. All affected properties/farms are listed and submitted as APPENDIX E 5 under the alternative in review.**		
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Warden-Vrede: Alternative 2 runs from the Warden substation over the N3. The route then leaves the N3 and follows the R103 in a northerly direction, and cross over the road (R103) to the eastern side diverting from the other existing lines to go along with Alternative 1. It runs through a number of properties until it reaches the property Eerstegeluk 1797 where it bends and crosses over the R103 to into the property Newmarket 260. It then bends to the Northern direction again along the R103 to a point where it (Alternative 2) divert into the property Bitterwater just after passing Spitskop 1226, leaving Alternative 1 to the north-eastern direction along the gravel road with the existing Eskom HV Lines. It goes along the property Graskop 145 and proceed through various properties along the gravel road till it reaches Vlakplaats 206 and bends a little bit towards Hugenot 1351 to the Y-junction and bends towards Aurora 1213 and Morgenson 953 and the latter is a game farm. The line passes Morgenson 953 (Morgenson Ranch) but along the property Aurora 1218 and along the road towards Vrede town. It passes by Edenvale 617 till it reaches Krynaauwslust 275. At this point it bends towards the R546, crossing over the road to meet Alternative 1. Both lines runs with the existing Eskom HV Lines into the Vrede Munic 88/22/11kV substation and connects. **N.B. All affected properties/farms are listed and submitted as APPENDIX E 5 under the alternative in review.**		
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
N/A		

In the case of linear activities:

Alternative:	**Latitude (S):**	**Longitude (E):**
Alternative S1 (preferred)		
• Starting point of the activity	27° 52' 45.16"	28° 58' 10.37"
• Middle/Additional point of the activity	27° 35' 01.99"	28° 59' 57.52"
• End point of the activity	27° 25' 44.84"	29° 09' 19.98"
Alternative S2 (if any)		
• Starting point of the activity	27° 52' 45.16"	28° 58' 10.37"
• Middle/Additional point of the activity	27° 37' 06.22"	29° 00' 35.05"
• End point of the activity	27° 25'44.84"	29° 09' 19.98"
Alternative S3 (if any) **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.

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.

b) Lay-out alternatives N/A

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

c) Technology alternatives N/A

Alternative 1 (preferred alternative)
Alternative 2
Alternative 3

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

Alternative 1 (preferred alternative)		
Alternative 2		
Alternative 3		

e) No-go alternative

No Go Alternative

The no go alternative means that the proposed 88kV power line will not be constructed and it means that:

- Problems of low capacity power within the Warden/Vrede area will not be resolved.
- Employment opportunities for local community will be forfeited
- Eskom will not be able to fulfil its bigger mandate of supplying electricity to the people of South Africa, especially those on rural areas.

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

3. PHYSICAL SIZE OF THE ACTIVITY

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

Alternative:	**Size of the activity:**
Alternative A1[1] (preferred activity alternative)	N/A
Alternative A2 (if any)	N/A
Alternative A3 (if any)	

or, for linear activities:

Alternative:	**Length of the activity:**
Alternative A1 (preferred activity alternative)	60 km
Alternative A2 (if any)	53 km
Alternative A3 (if any)	N/A

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

Alternative:	**Size of the site/servitude:**
Alternative A1 (preferred activity alternative)	1 320 000 m^2
Alternative A2 (if any)	1 166 000 m^2
Alternative A3 (if any)	N/A

4. SITE ACCESS

Does ready access to the site exist?	**YES**	
If NO, what is the distance over which a new access road will be built	**N/A**	

Describe the type of access road planned:

The proposed power line will be accessed through the existing R546, R103 provincial roads and farm service roads that network throughout the study area.

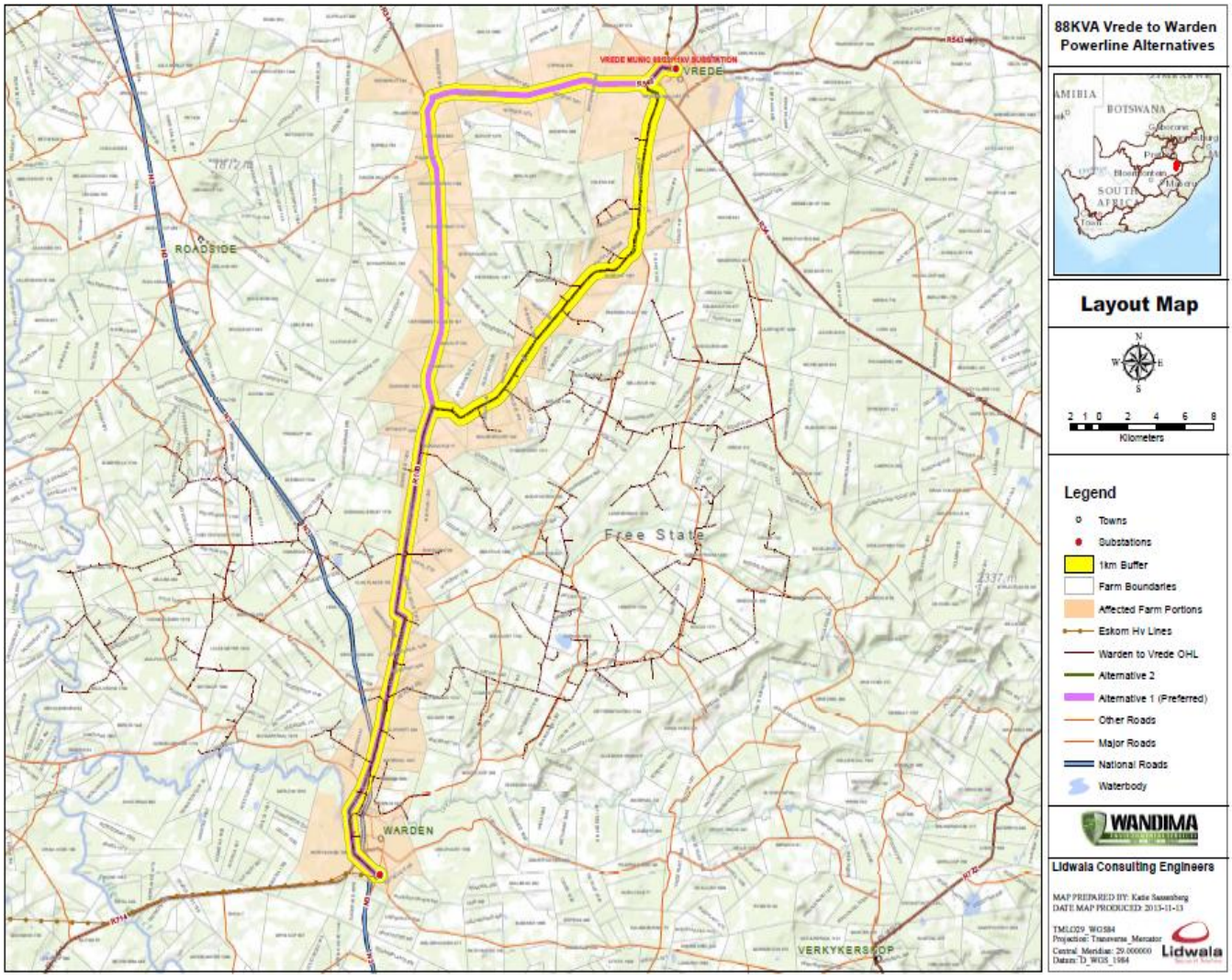
Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

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

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).



Locality Map of the Area indicating Alternative 1 and Alternative 2

6. LAYOUT/ROUTE PLAN

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

The site or route plans must indicate the following:

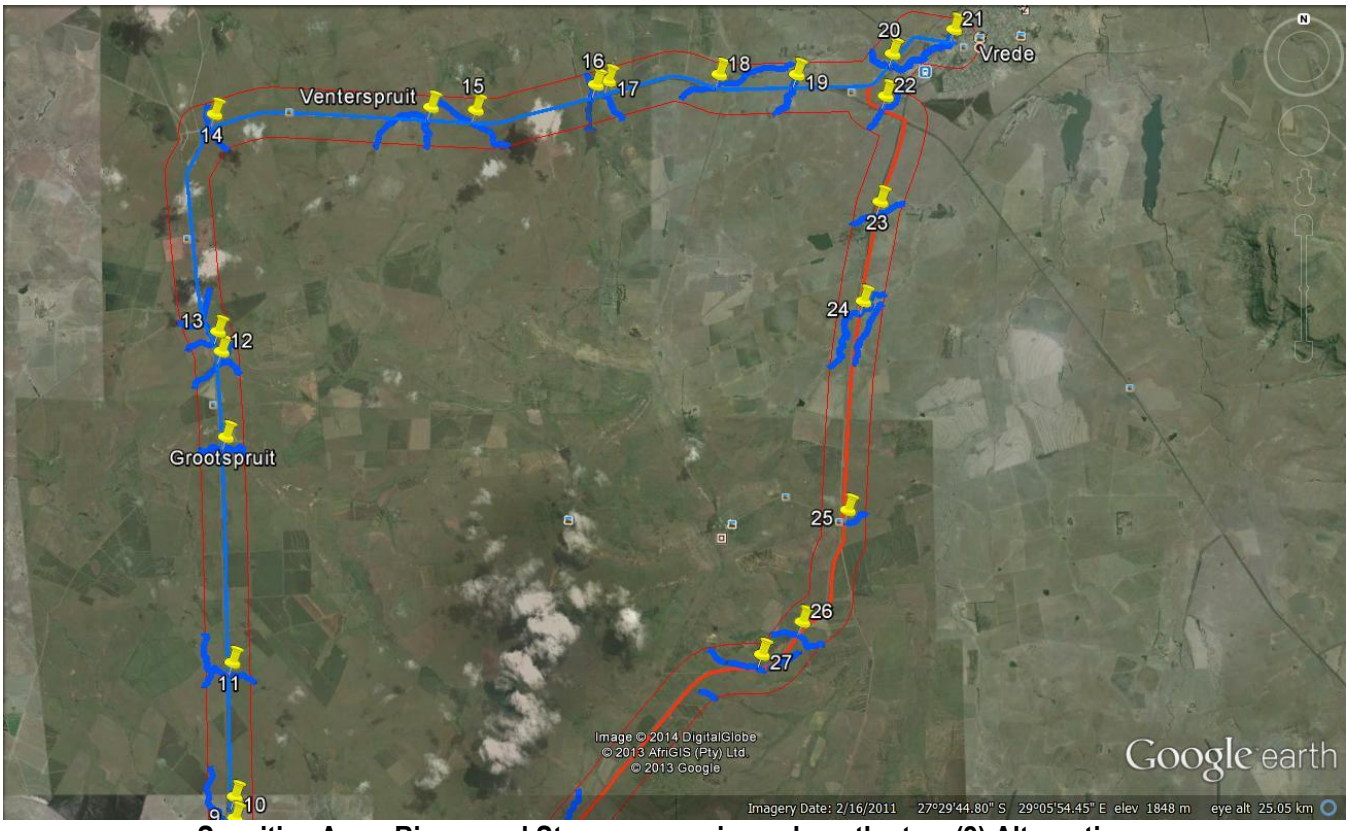
- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity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

7. SENSITIVITY MAP

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

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

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



Sensitive Area: Rivers and Streams crossings along the two (2) Alternatives

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.

Photo#1: Warden-Rural Substation

Photo#2: Vrede Municipal Substation

Photo#3: Alternative 1 along the R103

Photo#4: Alternative 2

See **Appendix B** for more 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.

10. ACTIVITY MOTIVATION

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

1. Is the activity permitted in terms of the property's existing land use rights?	**YES**		Please explain
There is an existing network of lower voltage lines between Warden to Vrede and the proposed line will ensure continuous reliability of supply of electricity for the Warden-Vrede areas. Land use rights will not be changed.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	**YES**		

This project is initiated by Eskom to ensure continuous reliable supply to rural Vrede town. It is in line with the PSDF. The PSDF consist of the following information regarding environmental care in general in the area and to correct the imbalances in distribution of electricity.

Environmental Management and Care

***Core Issues*:**

- Health Conscious Community
- Pollution
- Conservation Areas
- Lack of Training
- Waste Removal

Trends, Problems and Causes

The Eastern Free State area is rich in natural resources and is seen as one of the most beautiful parts of the country. A large number of environmentally sensitive areas (i.e. dams, rivers etc.) exist in the Thabo Mafutsanyana District Municipality and should be protected at all costs. The Municipality is yet to take responsibility to make people aware of their own responsibility to guard against environmental threats through the proposed environmental strategies. A number of environmental risks exist.

They include:

- High levels of air pollution around towns caused by wood and coal fires.
- Cutting down of trees which decreases natural air filters.
- Uncontrolled dumping of refuse and littering further contributes towards pollution.
- The poor management of sanitation systems poses a serious health and environmental risk.
- Overgrazing causes erosion, especially commonages cause a great problem
- Veld fires damages biodiversity and leads to erosion and air pollution.

To sufficiently combat pollution and care for the environment people should adopt a culture of caring for the environment and applying sustainable ways to earn a living.

(b) Urban edge / Edge of Built environment for the area		**NO**	**Please explain**
The proposed power line runs outside the urban edges of both Warden and Vrede rural towns. Both alternative routes run along existing infrastructure (powerlines) on various farm boundaries and along Provincial roads.			
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	**YES**	**No**	**Please explain**

The activity will ensure that the electrical needs of the province, as stated in the Provincial Spatial Development Framework, is satisfied. Below is core issues related to electricity in the municipality.

Electricity

Core Issues:

- Imbalances in Distribution
- Rural Areas not serviced well
- Maintenance

Trends, Problems and Causes

Eskom is the sole provider for the region. Although there is no uniform distribution service, most municipalities buy power from Eskom and then provide it to their respective consumers. Electricity provision and distribution through the area is generally good with little shortcomings (70-80 %.) There are still imbalances in the provision of electricity as there are previously disadvantaged areas without electricity.

Rural areas are not well serviced and the exact number of people without electricity is unknown.

Power failures are common, especially during thunderstorms, due to weak networks and limited infrastructure such as sub stations (Spatial Development Framework).

(d) Approved Structure Plan of the Municipality	YES		Please explain

According to Phumelela Local Municipality the infrastructure plan is striving to implement infrastructure maintenance and upgrading programmes according to requirements of its spatial development framework. Electrical supply is one of the goals of the infrastructure planning of the local municipality. So the proposed activity will be in line with the approved structure plan of the Municipality as illustrated in the Analysis below.

Infrastructure Planning

Risks / Capacity Assessment

OPPORTUNITIES	THREATS
The municipality is cooperating with sector departments and EPWP in infrastructure maintenance and upgrading	A persistent management problem is the lack of information about the status of infrastructure in the municipality
The municipality is striving to implement infrastructure maintenance and upgrading programmes according to requirements of its Spatial Development Framework.	
STRENGTH	**WEAKNESSES**
MIG grant are used for investment planning over the next MTEF	The municipality is aware that there is a lack of infrastructure upgrading and maintenance. Inadequate resources necessitate crisis management in the management and maintenance of infrastructure. The municipality's infrastructure plan is still in the process of review and refining.

(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	**YES**		**Please explain**

The activity is in line with the Environmental Management Framework of the local municipality and will not compromise the integrity of the project. Below is the environmental issues stated in the IDP of Phumelela Municipality.

Phumelela Environmental Issues

In order to ensure that the negative impacts of the priority environmental issues are minimized there need to be a sound understanding of the relationship between the causes and the effects of the issues.

In the following table, the various environmental problems associated with the proposed projects, (set out in the analysis phase), are presented, together with the most prominent causes of these environmental problems. The various effects of these environmental problems on the people, as well as the communities/towns being affected by these problems are also presented.

Environmental problems, causes, effects and people being affected

Environmental problems, risks and threats	Causes of the problem	Effect(s) of the problem on the environment	People being affected
The provision, upgrading and maintenance of transport routes	• Poor infrastructure of roads • Neglect of maintenance of roads	▪ Increase in air pollution (increased amount of private vehicles on roads) ▪ Increase in accidents ▪ Damage to land alongside roads	All towns
The installation of area lighting	• For improved lighting, and safety	▪ Visual pollution: Erection of towers or masts ▪ Impact on the biodiversity	Memel Vrede Warden

Under the Phumelele EMF, activities/projects that will require an Environmental Impact Assessment (EIA), are mentioned below.

Activities requiring an EIA are:

- Construction of proper infrastructure for water and sanitation services
- Cemetery sites
- Construction and maintenance of roads
- Construction of infrastructure for electricity
- Establishment of sport fields

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

Planning in this activity remains the mandate of the client (Eskom Holdings) and therefore currently limited to the scope of work in review.

3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	**YES**		**Please explain**

This project aims at meeting Eskom's objective of electrifying even the most remote areas in South Africa and also conforms to the Phumelela IDP which prioritises the provision of electricity, rated a high priority. The extract below is stated in the IDP.

Priority	Objectives	Outcomes
Electricity Reticulation	To ensure that 100% of households in the Phumelela municipal area have access to electricity by 2014	100% of households in formal areas with access to electricity

In addition according to Thabo Mofutsanyana District Municipality the IDP 2013-2014 indicate that the proposed development is in line with the IDP objectives and strategies of the district municipality.

Thabo Mofutsanyane district municipality - IDP objectives and strategies:

Priority Issue	Objectives	Outcome	Strategy
Electricity	To have a reliable electricity distribution system throughout the region for both rural and urban areas.	Equal electricity for all.	Lead municipalities to adopt a uniform approach to deal with electricity through the energy forum.
			Encourage municipalities to make use of different sources of energy that is cost effective and environmentally friendly.
			Encourage service providers to get involved in the integrated planning of the district.
			Encourage local municipalities to address the needs of farming communities, especially farm workers, farmers, and provide funding thereof.

4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level e.g. development is a national priority, but within a specific local context it could be inappropriate.)	**YES**		**Please explain**

Both communities of Warden and Vrede will benefit from this project. The challenge is that it takes long for the Standerton line (which supplies Vrede) to be fixed, repaired, or attended to and leaves customers at Warden and Vrede without electricity for extended periods of time. The proposed 88kV line connecting Warden and Vrede will serve as a backup/emergency in the event of power breakdown. Should supply be lost from the Standerton line, Vrede can be fed from Warden and should supply to Warden be lost from its source (an 88kV line from Ras) then Warden can be fed/supplied through Vrede. This would therefore ensure the reliability and continuity of supply for both towns.

5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	**YES**		**Please explain**
The development does not require services from the municipality. Confirmation will be attached in the Final Basic Assessment Report.			
6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	**YES**		**Please explain**
It is already stated in the municipality's 2012-2016 that electricity reticulation is one of the objective of IDP at Phumelela Municipality. Proofs of comment to be attached in the final BAR.			

Priority	Objectives	Outcomes
Electricity Reticulation	To ensure that 100% of households in the Phumelela municipal area have access to electricity by 2014	100% of households in formal areas with access to electricity

7. Is this project part of a national programme to address an issue of national concern or importance?		**NO**	**Please explain**
The project only runs from Warden to Vrede to address a localised problem in these towns. The project will not have any consequence to any of the SIPs or to the National Development Plan. It is just a strategic project for Eskom to allow interconnection between 2 networks that are not connected.			
8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	**YES**	**NO**	**Please explain**
The location factors favour the proposed land use; it is relatively flat, characterised by grasslands and fewer trees. The area has relatively less trees along the proposed lines reducing the ecological impact on trees and shrubs. The flat topography enables for ease of work during construction phases, operational and maintenance phases. It also enables minimisation of erosion because of its flat slope enabling better drainage to occur which is unlikely with steep slopes.			
9. Is the development the best practicable environmental option for this land/site?	**YES**		**Please explain**
Detailed specialists studies were conducted on the following aspects: Visual, Heritage, Wetland, Ecological, and Bird Impact studies to ensure the best environmental option for site location. The alternative routes highlighted by the specialist reports indicate least damage to the environment and the most beneficial option from an environmental perspective is Alternative 1.See attached specialists studies for details.			

10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	**YES**		
The proposed line will only be used in emergency situations, i.e. if Vrede loses the Standerton line supply, and will not be connected permanently. The great benefit will be supply of adequate electricity to both Warden and Vrede towns. This will ensure increase in business opportunities, increasing in farming, eradication the use of candles within the Warden and Vrede communities as this is, and a better life for all. The negative impacts can be greatly reduced by strictly adhering to the specialist mitigation measures for all specialist studies conducted. See attached, **Appendix D Specialist Reports**, for detailed mitigation measures.			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	**YES**		
Each project is unique and requires a separate assessment relevant to its needs. However lessons learnt from this project will be highlighted to similar projects. This will ensure that negative impacts are highly minimised and predicated. The project will also inform more on potential cumulative impacts related with powerline construction; impacts which result from the incremental impacts of individual events, when added to the past, present and foreseeable future events.			
12. Will any person's rights be negatively affected by the proposed activity/ies?		**NO**	
A public meeting was held in both Warden and Vrede to engage the public concerning the construction of the power line. Consultation with landowners by Eskom will have to be conducted in order to get servitude rights for the power line route over individual properties. Eskom's Land and Rights Department will carry out this process and see to it that the landowners' interests are protected.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?		**NO**	
It is a linear activity from Warden to Vrede and predominantly falls outside of the urban edge of both towns.			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	**Yes**		
SIPS 10: Electricity Transmission and Distribution for all. Expand the transmission and distribution network to address historical imbalances, provide access to electricity for all and support economic development.			
15. What will the benefits be to society in general and to the local communities?			
Provision of efficient, reliable electricity supply is part of Eskom's mandate and therefore, constructing an alternative back-up power line for Warden and Vrede is vital in the event Standerton and Ras 88kV powerlines (which supply Vrede and Warden respectively) fails and this will ensure that residents and business in those areas have continuous electricity supply. Society will benefit in this regard.			
16. Any other need and desirability considerations related to the proposed activity?			**Please explain**
Not Applicable			
17. How does the project fit into the National Development Plan for 2030?			
Providing electricity is meant to support sustainable livelihood, to improve living standards and to ensure dignified existence to all people in South Africa. To have a sustainable livelihood requires that every family has an acceptable standard of living within their reach. To provide electricity to the people of South Africa is a supportive service that supports human rights.			

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) *Section 23 stipulates the promotion of the application of appropriate environmental management tools in order to ensure the integrated environmental management activities. The general objective of integrated environmental management is to: 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*.

- The applicant took appropriate steps in appointing an independent environmental practitioner to carry out the process of applying for an environmental authorisation in terms of the EIA Regulation through which all the integrated logistics and methodologies are monitored. The application to carry out the investigative/assessment processes was accepted by the Department of Environmental Affairs which oversees the appropriate management of environmental resources. This amounts to a series of processes which are currently being rolled out by the environmental practitioner and the engaged specialists. The findings of all the investigations and analysis to be conducted will determine the decision to be taken by the competent authority in issuing an environmental authorization or rejecting the envisaged activity.

(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 minimizing negative impacts and promoting compliance with the principles of environmental management set out in section 2.*

- The purpose of this Basic Assessment Report and accompanying specialist's studies reports, which is currently at the stage of a draft, is to serve the purpose of filtering and making sure that potential impacts and associated undesired consequences in the environment (both living and non-living), heritage and community are kept at bay or minimized through mitigation or taking appropriate measures against. Positive impacts are also investigated and valued. Specialist's investigations and ultimate development of an Environmental Management Program report (EMPr) showcase the prudent steps being taken in compliance with section 2.

(c) *Ensure that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them.*

- The investigations and assessments conducted by both specialists and the environmental practitioner through legislative guidance regulate decisions taken towards the rolling out of the activity and such measures are put in place to halt or avoid/deviate from any intended undesired course of action. Activities may not be undertaken if investigations are not in agreement with the end results of such development.

(d) *Ensure adequate and appropriate opportunity for public participation in decisions that may affect the environment*.

- Land owners, local authorities and other affected parties are part of the process. They were involved from the commencement of the EIA process in accordance with Chapter 6 the NEMA, 107 of 1998 (amended) and the Environmental Impact Assessment Regulations of 2010, and consulted through the media, notices, individually and meetings.

(e) *Ensure the consideration of environmental attributes in management and decision making which may have significant effect on the environment.*

- The endorsements of the EMP and directives to come with the Environmental Authorization are the key instruments in making sure that the environment is not compromised during the activity (development) and commissioning.

(f) *Identify and employ the modes of environmental management best suited to ensuring that the particular activity is pursued in accordance with the principles of environmental management set out in section 2*.

- Procedures for the investigation, assessment and communication of the potential impact of activities must be effective according to NEMA. For instance a public meeting was held procedures were detailed and communicated and independent specialists were appointed for the Warden – Vrede project.

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

a) *Development must be socially, environmentally and economically sustainable.*

Socially- the public was informed and involved during various public participation methods such as public meetings, advertisements in local newspapers, site notices placed throughout study area and through various correspondence channels.

Economical-affordable and cost effective options were investigated.

Environmental- the best environmentally sound alternatives were investigated supported by mitigation measures included in the Environmental Management Plan.

This implies that the following be considered before there is any development:

- Disturbance of ecosystems with resulting loss of biological diversity;
- Pollution and degradation of the environment;
- Disturbance of landscapes and sites of the nation's cultural heritage;
- Production of waste avoided, minimized, re-used, recycled, or disposed of in a responsible manner;
- Non-renewable natural resources must be used responsibly and equitably and must take into account the consequences of the depletion of the resource;
- The development, use and exploitation of renewable resources and the ecosystems of which they are part must not exceed the level beyond which their integrity is jeopardized;
- A risk-averse and cautious approach, which takes into account the limits of current knowledge about the consequences of decisions and actions, be applied;
- Negative impacts on the environment and on people's environmental rights must be anticipated and prevented, and where they cannot be prevented, minimized and remedied.

b) *Environmental management must be integrated. It must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the best practical environmental option.*

- Stake holders and authorities were invited to participate and involved in the activity in order that a holistic decision can be taken in all aspects of environmental management to guard against future liabilities.

c) *Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human well-being be pursued.*

- The end product of this activity is the supply of power which is meant for public consumption and therefore of benefit to consumers as a basic need.

d) *The environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage.*

- The specialist investigations in collaboration with mitigation measures that are being pursued implies a means of reassuring benefits for the people and ultimate conservation and sustainable development which does not compromise benefits and history for the future generations.

e) *The polluter must pay for the cost of remedying pollution, environmental degradation and adverse health effects*

- The activity does not pose any threat related to pollution, environmental degradation or adverse health effects. An EMP to remedy the possible impacts is in place and negative impacts were investigated with mitigation measures in place.

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
Constitution of the Republic of South Africa (No. 108, 1996)	Rights of all persons involved.	Parliament	1996
Environmental Impact Assessment Regulations, 2010	Consider all possible environmental impacts as construction takes place	Department Environmental Affairs	2010
National Water Act (No. 36, 1998)	Consider possible impacts in water resources and water usage in general.	Department of Water Affairs and Forestry	1998
National Environmental Management: Biodiversity Act(No. 10, 2004)	Consider possible impacts on biodiversity of the area where construction will take place.	Department of Environment	2004
Labour Relations Act 66-1995	Labour disputes.	Dept of Labour	1995
National Environment Conservation Act (No 73, 1989)	Consider possible impacts on conservation for the specific area where development will take place.	Department of Environmental Affairs	1989
National Roads Act (No. 7, 1998)	Impacts on the N3, R714, R103 and other associated roads.	Department of Public works	1998
National Heritage Resources Act (No. 25, 1999)	Six sites of cultural significance were found.	Department of Arts and Culture	1999
Occupational Health and Safety Act (No. 85, 1993)	Worker's Health issues during construction of the power line.	Department of Labour	1993
Promotion of Access to Information Act (No. 2, 2000)	All documents have to be available for consideration by any I&AP.	All Departments	2000
National Environment Management: Waste Act, 2008 (No 59 of 2008)	Waste will be generated during construction	Department of Environmental Affairs	2008
Electricity Regulation Act (No. 4, 2006) National Environment Management: Waste Act, 2008 (No 59 of 2008)	Ensure reliability of Electricity supply for Vrede and Warden	Department of Environmental Affairs	2006
EIA regulations as listed in Government Notices R543 and R544 (20 June 2010)	Activities that trigger listed activities have to be registered at DEA and authorisation granted	Department of Environment	2010

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?	YES	
If YES, what estimated quantity will be produced per month?	Uncertain	

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

It will be collected and be disposed off at a registered landfill site. The client will determine and upon a contractual agreement with contractor decide upon days when the collection can be done.

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

It will be disposed of at a permitted landfill site.

Will the activity produce solid waste during its operational phase?		NO
If YES, what estimated quantity will be produced per month?	N/A	

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

The proposed development will not produce any waste during its operation.

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?		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?		NO

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

b) Liquid effluent

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

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

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

If YES, provide the particulars of the facility:

Facility name:	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

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	

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?	NO	
If YES, is it controlled by any legislation of any sphere of government?	N/A	

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

If NO, describe the noise in terms of type and level:

Noise will be generated by moving vehicles in and out of the line route and will only affect the surrounding properties within the route in short term basis. There is also potential of construction machinery noise during construction phase. The noise generated will generally be classified as low impact.

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	

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
Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?		NO
If YES, please provide proof that the application has been submitted to the Department of Water Affairs.		

14. ENERGY EFFICIENCY

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

N/A

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

N/A

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? [ ] NO

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

Property description/physical address:

Province	Free State
District Municipality	Thabo Mofutsanyane District
Local Municipality	Phumelela Municipality
Ward Number(s)	8
Farm name and number	Refer to list of Farms Attached in Appendix E.
Portion number	Attached
SG Code	Attached

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

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

Agriculture

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

Is a change of land-use or a consent use application required? [ ] NO

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

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

Alternative S2 (if any):

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

Alternative S3 (if any):

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

2. LOCATION IN LANDSCAPE

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

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

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

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

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

4. GROUNDCOVER

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

Natural veld - good condition[E]	Natural veld with scattered aliens[E]	Natural veld with heavy alien infestation[E]	Veld dominated by alien species[E]	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

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

5. SURFACE WATER

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

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

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

Perennial Rivers - Four, medium to large perennial rivers occur, they are: Cornelius, Holspruit, Grootspruit and Venterspruit rivers.
Non-Perennial River – besides the water courses, a number of small, seasonal streams and drainage lines occur.

6. LAND USE CHARACTER OF SURROUNDING AREA

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

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

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

N/A

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

N/A

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

N/A

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

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

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

7. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:	YES	
The heritage assessment noted that there is a grave yard (Warden Municipal Graveyard) with a number of graves along **Alternative 1**. Most of these graves might be younger than 60 years. This grave yard is located at GPS co-ordinates: 27º51.882'S, 28º57.368'E respectively. There are more graves along the study area but will not be affected by the activity. There are 4 dilapidated houses along **Alternative 2** at the Vrede Station which might age between the late 19th and early 20th century. These houses are built of sandstone and are most likely older than 60 years. They are located at GPS co-ordinates: 27º26.163S, 29º08.984'E. Basically, six sites of cultural significance were found of which one (1) is located along Alternative 1 and five (5) are along Alternative 2. As they are of high cultural significance, they are worth mentioned in this report but will not be affected by the activity especially along Alternative 1. For more details, please refer to Heritage Impact Report.		

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:

Please refer to summary above.

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

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

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

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

Level of unemployment:

Unemployment rate is 25.30%

Economic profile of local municipality:

Competitive advantage of Phumelela lies in tourism and Agricultural Development; Commitment by the municipality on SMME development (formal and informal) in the area; Acceleration, exploration and expansion of the tourism potential of the area; and Comprehensive partnership for the job creation and expansion of the local economy. Tourism is the main focus area for expanded economic growth. Job creation is a central theme in the Municipality's local economic development initiatives. The Council supports national government's focus on SMME and BBBEE development. There is also an understanding of the importance of promoting local industries, but due to the rural nature of the area, it is not always possible to obtain the required skills and resources required by the Municipality from local sources.

Level of education:

The vision of the municipality is to create a culture of learning and facilitate educational activities within the local municipality. **Core Values of Education Phumelela Municipality.** To maintain and improve sports and recreational facilities to allow our communities access to good quality relaxation, sporting, recreational, educational and cultural opportunities for expression and sound recreation.

b) Socio-economic value of the activity N/A

What is the expected capital value of the activity on completion?	R	
What is the expected yearly income that will be generated by or as a result of the activity?	R	
Will the activity contribute to service infrastructure?	YES	NO
Is the activity a public amenity?	YES	NO

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

Eskom will go on open-tender for the appointment of a contractor to carry out the construction. These contractors often subcontract. Eskom requires that contractors employ local unskilled labourers to perform non-specialised work.

What is the expected value of the employment opportunities during the development and construction phase?	R (Unknown)
What percentage of this will accrue to previously disadvantaged individuals?	>90%
How many permanent new employment opportunities will be created during the operational phase of the activity?	N/A
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?	N/A

9. BIODIVERSITY

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

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

Systematic Biodiversity Planning Category				**If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan**
Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	From Warden – Vrede Power line. According to BGIS, Warden consist of vulnerable (areas where no natural habitant remains and least threatened areas).

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	0%	N/A
Near Natural (includes areas with low to moderate level of alien invasive plants)	2%	
Degraded (includes areas heavily invaded by alien plants)	3%	
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	95%	Well managed land for grazing purposes.

c) Complete the table to indicate:

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

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

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

The general vegetation types (or veldtypes) of the region in which the study area falls are Eastern Free State Clay Grassland, Eastern Free State Sandy Grassland and Frankfort Highveld Grassland. Pockets of Northen Free State Shrubland and Eastern Temperate Freshwater Wetlands are found scattered throughout the region.

No floral or faunal species of preservation concern where encountered during field surveys. No floral species of conservation concern are known to occur in the study area. The study area does fall within areas of fish and reptile species of conservation concern.

Conservation status of veldtypes in the study area

Veld Type	Status	% Transformed	Conservation Status
Eastern Free State Clay Grassland	Endangered (EN)	>50%	Only statutorily in the Willem Pretorius N.R.
Eastern Free State Sandy Grassland	Endangered (EN)	>50%	QwaQwa and Golden Gate Highlands National Parks; Sterkfontein Dam N.R.
Frankfort Highveld Grassland	Vulnerable (VU)	>33%	No state protection

Ecological sensitivity of the ecological communities in the study area

Ecological Community	Floristic Sensitivity	Faunal Sensitivity	Ecological Sensitivity	Development Go-Ahead
Grassland	Medium/Low	Medium/Low	Medium/Low	Go
Watercourses	Medium	Medium/High	Medium/High	Go-But
Rocky ridges	Medium/High	Medium/High	Medium/High	Go-But
Grazing lands	Low	Low	Low	Go
Cultivated lands	Low	Low	Low	Go

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Vrede News/Nuus	
Date published	18 0ctober 2013	
Site notice position	**Latitude**	**Longitude**
	27°25'44.84"S 27°26'34.53"S 27°26'14.44"S 27°26'22.27"S 27°26'35.71"S 27°26'45.36"S 27°32'55.90"S 27°52'45.16"S	29° 9' 19.98"E 29° 08'37.51"E 29° 06'27.61"E 29° 04'46.57"E 29° 03'49.43"E 28° 59'52.64"E 29° 00'24.77"E 28° 58'10.37"E
Date placed	18 October 2013	

Include proof of the placement of the relevant advertisements and notices in Appendix E1. (See attached Comments and Response Report as Appendix E).

2. DETERMINATION OF APPROPRIATE MEASURES

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

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

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
Mnr. M.J. Ungerer	Farmers Union	0827852000 mjungerer@mweb.co.za
Mnr. A.C. Viljoen	Farmers Union	0823771870 acrette@xsinet.co.za
Mnr. J.A. Dreyer	Farmers Union	0823784452 nandreyer@vodamail.co.za
Mnr. A.T Kruger (Chairperson)	Farmers Union	082 785 2000
Mr. S Selepe	Phumelela Municipal (Technical Department)	058 913 8300
Hon.I.J. Motaung (Mayor)	Phumelela Local Municipality	tjmotaung@phumelela.gov.za
Mr.D.M. Nkabinde (Cllr)	Phumelela Local Municipality	nkabinde.david@yahoo.com/ Cell:073 604 6542
Ms. J.M. Mofokeng (Ward 2 Cllr)	Phumelela Local Municipality	Cell:073 826 793 josinamofokeng@gmail.com

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E4. This proof may include any of the following:

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

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

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

4. COMMENTS AND RESPONSE REPORT

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

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address

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

See attached Comments and Response Report as Appendix E for a list of all Authorities/Organ of State to comment on the Draft Basic Assessment Report.

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

6. CONSULTATION WITH OTHER STAKEHOLDERS

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

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

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

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

SECTION D: IMPACT ASSESSMENT

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

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

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

CONSTRUCTION IMPACTS – ALTERNATIVE 1

Table 1.

Potential impact on physical aspects:	
Nature of the impact: Soil erosion	The proposed project will have a potential to encourage avenues for erosion in the footprint during the construction and post construction phases. Intensive utilisation of service and access roads by construction machinery may cause loss of stability of road surfaces which will result in soil erosion through wind and surface water run-off. Occasional deviation from the access and service roads by heavy machinery might result in most of the road-side vegetation being trampled thereby disabling the roots in their binding effect on the soil. This will enable surface run-off to cut the edges of the roads into undesired and uneven slopes. Newly created access roads might encourage erosion if not properly designed especially if located on steep slopes.
Extent	Site (limited to the site boundaries)
Duration	Medium term (limited to the lifespan of the project and reversible over time if mitigated)
Intensity / Severity	Low (will have small negative impacts)
Probability / Certainty	Probable
Significance	Medium
Proposed mitigation: It is imperative that movement of equipment and machinery be restricted to designated roads to access the site. Newly established access roads during the construction phase should be designed in such a way that steep slopes are avoided. If unavoidable, surface run-off humps should be made to direct the flow into vegetated surfaces in mitigation against soil erosion. Unused/abandoned roads or disturbed terrains should be tilled and reseeded with local vegetation during rehabilitation. Excavated areas should be backfilled to avoid unnecessary accumulation of surface water and high velocity overflow. Excavations might pose a hazard to livestock and people that will be working in the farms. Disturbed steep slopes should be supported with surface rock gladding or vegetation. Stipulations of the Environmental Management Programme (EMP) should be adhered to during the construction phase of the project till decommissioning.	
Cumulative impacts post mitigation:	Low
Significance rating of impact after mitigation:	Low

Table 2

Potential impacts on biodiversity	
Nature of impact Disturbance of fauna and flora	Vegetation removal will be required throughout the route for the construction of the power line. Impacts on both fauna and flora will be inevitable and this will result in habitat fragmentation and ultimate loss of a fair amount of vegetation and displacement of faunal species surviving in that particular habitat. As the route is located not very far from wetlands, a variety of bird species, reptiles and mammals are nomadic in the area and incidents of electrocution and displacement of terrestrial animals, insects and reptiles might occur. Although power lines do not have a major impact on grassland vegetation due to the low structure of the grassland, deviation of heavy machinery from designated access roads might account for most of the grassland vegetation being trampled thereby destroying the habitat of smaller faunal species. Crossing of power lines over wetlands will obviously interfere with aquatic life and wader bird species.
Extent	Site
Duration	Short term/ once off
Intensity / Severity	Low
Probability / Certainty	Probable
Significance	Low
Proposed mitigation: Eskom and/or the contractor should stick to the preferred route and recommendations by the consultant. Although the grassland structure is low, there is a variety of reptiles, amphibians, insects, mammals and birds that occur in this type of habitat. Care should be taken during the planning and construction phases to restrict the development to areas of lower biodiversity sensitivity. These will be along existing power lines as they were already disturbed, along service roads and farm boundaries. Vegetation removal should be restricted to areas where the development is to take place and undesired tree felling or grass cutting should be avoided at all costs. Construction workers should be discouraged from killing of animals and birds for relish as this might interfere with livelihood of the ecosystem and will encourage poaching. Activities associated with the construction should have an element of conservation through avoiding undesired destruction of wildlife within the site.	
Cumulative impacts post mitigation:	Low
Significance rating of impact after mitigation:	Low

Table 3

Potential impacts on the atmosphere	
Nature of impact Generation of dust and noise	As much as access roads are mostly gravel, dust emissions will be experienced during the movement of construction material and machinery onto site. Dust can also be generated during excavation due to possible hard rock encounters along the route. With the movement of these equipment, there will be noise stemming from the roar of engines and loose items on the trucks. Noise from the workers can also be experienced by locals as they travel to and from site.
Extent	Site
Duration	Short term/ once off
Intensity / Severity	Low
Probability / Certainty	Probable
Significance	Low
Proposed mitigation: Access roads should be provided with a water tanker lorry, equipped with a mounted water pump engine that will be used to sprinkle water on the road surface and suppress dust. Loading of equipment should be done in such a manner that items are placed tightly against each other so that they do not collide against each other as the truck rocks through unstable surfaces of the access roads. High speeding should be discouraged at all times as dust is generated the most with high speed. Construction vehicles should be kept in good condition at all times. Vehicles in good condition are not likely to generate high pitched roars especially if operated properly. Loading bins of vehicles should be rubberised as that reduces rattling sounds. Construction workers should be alerted not to scream at the public especially as they pass by residential areas. The same applies to unnecessary hooting of construction vehicles.	
Cumulative impacts post mitigation:	Low
Significance rating of impact after mitigation:	Low

Table 4

Potential impact on residents and road infrastructure	
Nature of impact Traffic and neighbourhood disruption	The power lines will be crossing over the **N3 national road at two points**, the **R714 and R34** provincial roads at one point each. Temporary closure of some lanes along the **N3** will occur during the overhead construction of the power lines and this will disrupt traffic flow on the highway. Both the **R714 and R34** provincial roads are constantly used by heavy trucks that convey goods and farm feeds to and from Durban and local farming communities. The two roads are narrower and may not have alternative lanes that can be temporarily utilised during such overhead construction of power lines and this might result in temporary total closure of the road. This state of affairs will interfere with the supply of goods to the various points and ultimate loss of man hours and production for the transport companies, the mines and the farms. Local domestic and business day-to-day transits will be affected. Occasional power interruptions will occur during connections of the new lines to substations and during construction as some of the existing lines either share the same servitudes or crossways with the proposed ones as live power lines can be dangerous to contractors. This will affect business, industries and domestic consumers.
Extent	Local (Warden and Vrede consumers)
Duration	Short term/ once off
Intensity / Severity	Low
Probability / Certainty	Probable
Significance	Low
Proposed mitigation: Signage and notifications through media should be considered so that road users and commuters are alerted of the intended temporary closure of the roads. This can also be done through the identification of regular road users especially the transport companies using the two provincial roads to Durban, farms and the substation. Consumers should have access to schedules of the activity which will indicate dates and times of power interruptions. Pamphlets can also be utilised to alert those that are likely to be affected.	
Cumulative impacts post mitigation:	Low
Significance rating of impact after mitigation:	Low

Table 5

Potential impact on skyline and immediate environs	
Nature of impact Visual impacts	The terrain in the Warden/Vrede area is mostly flat and undulating in most of localities. The skylines in this locality are clear with the prominent harvest silos visible in most directions of the footprint. The construction of the power lines will add to the visual impacts already eminent in the area. This will impact more in some pieces of cultivated lands where there is no vegetation in the form of trees with only the power lines sticking out. However, this will only add to the existing power lines which are running all over the area.
Extent	Site (Warden and Vrede)
Duration	Permanent
Intensity / Severity	Low
Probability / Certainty	Definite
Significance	Low
Proposed mitigation: The use of monopole structures in this project will reduce the crowded visibility of the already existing power line network. Construction of these power lines should be restricted to the already existing infrastructure as recommended by both specialists and the consultant so that little change is visible. Four legged structures should only be used where there is river crossing or difficult terrains requiring well supported lines to avoid possible collapse.	
Cumulative impacts post mitigation:	Low
Significance rating of impact after mitigation:	Low

Table 6

Potential impacts on soil and water quality	
Nature of impact	The use of heavy construction machinery is associated with possible leaks, spillages of hydraulic oils, diesel fuels and grease. Such spillages can contaminate the soil, surface and underground water if in larger quantities. Such spillages are detrimental to biodiversity as they strange elements with the ecosystem and obviously poisonous. Signs of the impact can be seen as grass starts dying and drying. With this, all life forms depending on the grass material for food and shelter will be affected. In this case, the soil is regarded as dead. Smaller insects that survive on the water surface will be affected as diesel and oil create a layer on the water surface thereby disturbing them as they swim and suffocating as they get covered with in a layer of oil. Disinfectants used in mobile toilets can also be detrimental to surface water and soil if not handled with care. Careless handling of full toilets during loading and transportation to sewerage treatment plant can result in spillages which might contaminate the ground and obviously surface water. Obnoxious smell of such spillage can attract flies which are capable spreading diseases.
Pollution and spillages of hazardous waste	
Extent	Site
Duration	Medium term
Intensity / Severity	Low
Probability / Certainty	Unsure
Significance	Low
Proposed mitigation: Machinery with hydraulic equipments like hydraulic jacks and lifts should be inspected and maintained on a daily basis to guard against possible leakages and malfunctioning of such equipments. Refuelling of machinery and trucks should be done at a designated site and such site should be paved with a concrete slab to avoid soaking of oils into the ground in the event of accidental spillages. Storage facilities fuels and related liquids should be located away from the vicinity of surface water. A concrete slab will be easy to clean prior to overflow further contamination. Fuel container should be inspected for possible leaks at all times. Used and empty drums that contained grease, diesel, hydraulic oil and petrol should be disposed of at a registered and licensed facility to avoid pollution and contamination of soil and water. Mobile toilets on site should be handled by experienced people during loading and transportation. Toilets should be inspected for leaks routinely. Antiseptic liquids should be handled and stored in a safe place in sealed containers.	
Cumulative impacts post mitigation:	Low
Significance rating of impact after mitigation:	Low

Table 7

Potential impact on neighbourhood (social) and site	
Nature of impact Undisciplined contract workers	Experience has proven that undisciplined contract workers pose a serious problem with the surroundings where they travel, work and live. Littering is one of the major challenges experienced in and around construction sites. Food packaging material is normally discarded wherever construction workers might be having their lunch and left lying all over. Possible consumption of plastic material by livestock can lead to death of the animal. As they travel along access roads, smokers will discard cigarette buds which would still be on fire which normally ignites veld fires, hence the grassland environment along the site. Screaming and insulting of community members by undisciplined contract workers is very common as they pass by residential areas to and from site. Interference with families located along construction sites where construction workers start relationships with married women is very common. Disputes between construction workers and families erupt in this instances resulting in social instability in individual families. Prostitution comes along with such relationships where construction workers spend their monies for such services and deprive their own families of the benefits from their work which impacts on families at remote distances. The result of this state of affairs has serious impacts on work performance on the part of the workers themselves.
Extent	Local
Duration	Short term
Intensity / Severity	Low
Probability / Certainty	Unsure
Significance	Low
Proposed mitigation: The contractor should have a code of conduct documented to address the required standards in terms of team member's behaviour. Workers should be allocated a site where they can have their lunch. It should be strictly noted that smokers should not discard life cigarette buds anywhere else other than a designated smoking area where the risk of veld fire is not eminent or such be placed in ashtrays. Workers should be warned not to insult the public and respect whoever they come across. Befriending locals especially women should be prohibited at all costs. In the event where a camp site is allocated, resident security guard should be deployed for the purpose of access control and monitoring. This will help in protecting property and equipment from theft and possible damage. Through the employee wellness programme, workers should be advised to take care of their benefits in order to see growth in their socio-economic conditions of their respective families. This will encourage them to perform better in their workplace.	
Cumulative impacts post mitigation:	Low
Significance rating of impact after mitigation:	Low

Table 8

Potential impacts on regional environment and downstream	
Nature of impact Pollution and littering	Spillages of diesel, hydraulic oil, grease and other volatile fuels can be carried away with surface water run-off into rivers and neighbouring properties. This can result in water bodies being contaminated and aquatic life threatened downstream. Spillages can soak into ground water and into wetlands thereby impacting on the wetland ecosystem which might be eminent over time especially downstream. If in access, this can pollute underground water and render it unusable for boreholes therefore not suitable for consumption. Litter can be carried away through wind and surface run-off to neighbouring properties away from the site. This might end up in storm water drainage lines and causing blockages. Some litter might be deposited along the banks of water courses due to overflow and reduction in velocity the flow. Litter deposited on drainage sites and scattered all over is unsightly and have a serious visual impact. Livestock the likes of cattle has a tendency of swallowing plastic bags and related material which normally result into digestion complications and sudden loss of weight and sudden death.
Extent	Local
Duration	Medium term
Intensity / Severity	Medium
Probability / Certainty	Unsure
Significance	Low
Proposed mitigation: Storage facilities of fuels and related liquids should be locked and containers tightly closed to avoid accidental spillages in the event the container falls over. All surfaces where these liquids are stored should be paved with reinforced concrete slab to avoid cracks through which spillages can leak into the ground. Inspections should be conducted at all times to guard against hidden impacts occurring due to leaks. Routine litter picking should be conducted and litter bins are supplied to specific sites.	
Cumulative impacts post mitigation:	Low
Significance rating of impact after mitigation:	Low

OPERATIONAL IMPACTS – ALTERNATIVE 1

Table 1

Potential impacts on immediate environment	
Nature of impact Visual impacts	Although the locals are already familiar with the existing power lines but additional 88kV power line within already existing infrastructure will increase visual impacts in the area to another level. This will be more prominent in areas where power lines are new.
Extent	Local
Duration	Permanent
Intensity / Severity	Low
Probability / Certainty	Definite
Significance	Medium
Proposed mitigation: Efforts have been made to construct the power lines in areas that are more obscure to proposed residential development and existing residential sites. The structures to be utilised are monopoles which are much vertically compact as compared to the regular four legged structures.	
Cumulative impacts post mitigation:	Low
Significance rating of impact after mitigation:	Low

Table 2

Potential impacts on avi-fauna	
Nature of impact Negative impacts on bird species	As the power lines are going through water bodies at some points, the likelihood of birds being electrocuted is large. Removal of vegetation that serves as roosting, shelter and breeding place will definitely impact on the birds' breeding habits. The natural flight routes of birds will to a certain degree be changed as the lines might be in their usual flight directions. Bird species that forage on farms for insects and other food items might fly into the lines and ultimately electrocuted. Water loving birds are very common in the area and the power lines are at some points located near the water bodies and wetlands where these birds normally search for food and water.
Extent	Local
Duration	Permanent
Intensity / Severity	Low
Probability / Certainty	Definite
Significance	Medium
Proposed mitigation: Power lines should be equipped with bird flappers in areas where they cross over water bodies or are in the vicinity of wetlands. This will be visible from a distance to flying birds especially those with broad wing span. Power line route should follow recommended directions as outlined in the consultant and specialist's reports. The stipulations of the Environmental Management Programme should be adhered to during the construction phase of the project to avoid future liabilities.	
Cumulative impacts post mitigation:	Low
Significance rating of impact after mitigation:	Low

CONSTRUCTION IMPACTS – ALTERNATIVE 2

Table 1.

Potential impact on physical aspects:	
Nature of the impact: Soil erosion	The proposed project will have a potential to encourage avenues for erosion in the footprint during the construction and post construction phases. Intensive utilisation of service and access roads by construction machinery may cause loss of stability of road surfaces which will result in soil erosion through wind and surface water run-off. Occasional deviation from the access and service roads by heavy machinery might result in most of the road-side vegetation being trampled thereby disabling the roots in their binding effect on the soil. This will enable surface run-off to cut the edges of the roads into undesired and uneven slopes. Newly created access roads might encourage erosion if not properly designed especially if located on steep slopes.
Extent	Site (limited to the site boundaries)
Duration	Medium term (limited to the lifespan of the project and reversible over time if mitigated)
Intensity / Severity	Low (will have small negative impacts)
Probability / Certainty	Probable
Significance	Medium
Proposed mitigation: It is imperative that movement of equipment and machinery be restricted to designated roads to access the site. Newly established access roads during the construction phase should be designed in such a way that steep slopes are avoided. If unavoidable, surface run-off humps should be made to direct the flow into vegetated surfaces in mitigation against soil erosion. Unused/abandoned roads or disturbed terrains should be tilled and reseeded with local vegetation during rehabilitation. Excavated areas should be backfilled to avoid unnecessary accumulation of surface water and high velocity overflow. Excavations might pose a hazard to livestock and people that will be working in the farms. Disturbed steep slopes should be supported with surface rock gladding or vegetation. Stipulations of the Environmental Management Programme (EMP) should be adhered to during the construction phase of the project till decommissioning.	
Cumulative impacts post mitigation:	Low
Significance rating of impact after mitigation:	Low

Table 2

Potential impacts on biodiversity	
Nature of impact Disturbance of fauna and flora	Vegetation removal will be required throughout the route for the construction of the power line. Impacts on both fauna and flora will be inevitable and this will result in habitat fragmentation and ultimate loss of a fair amount of vegetation and displacement of faunal species surviving in that particular habitat. Game farming is common along this route. The disturbance of the wildlife on game ranches during the construction of the powerline will impact on the recovery ecosystem of the area. As the route is located not very far from wetlands, a variety of bird species, reptiles and mammals are nomadic in the area and incidents of electrocution and displacement of terrestrial animals, insects and reptiles might occur. Although power lines do not have a major impact on grassland vegetation due to the low structure of the grassland, deviation of heavy machinery from designated access roads might account for most of the grassland vegetation being trampled thereby destroying the habitat of smaller faunal species. Crossing of power lines over wetlands will obviously interfere with aquatic life and wader bird species.
Extent	Site
Duration	Short term/ once off
Intensity / Severity	Low
Probability / Certainty	Probable
Significance	Low
Proposed mitigation: Eskom and/or the contractor should stick to the preferred route and recommendations by the consultant. Although the grassland structure is low, there is a variety of reptiles, amphibians, insects, mammals and birds that occur in this type of habitat. Care should be taken during the planning and construction phases to restrict the development to areas of lower biodiversity sensitivity. These will be along existing power lines as they were already disturbed, along service roads and farm boundaries. Vegetation removal should be restricted to areas where the development is to take place and undesired tree felling or grass cutting should be avoided at all costs. Construction workers should be discouraged from killing of animals and birds for relish as this might interfere with livelihood of the ecosystem and will encourage poaching. Activities associated with the construction should have an element of conservation through avoiding undesired destruction of wildlife within the site.	
Cumulative impacts post mitigation:	Low
Significance rating of impact after mitigation:	Low

Table 3

Potential impacts on the atmosphere	
Nature of impact Generation of dust and noise	As much as access roads are mostly gravel, dust emissions will be experienced during the movement of construction material and machinery onto site. Dust can also be generated during excavation due to possible hard rock encounters along the route. With the movement of these equipment, there will be noise stemming from the roar of engines and loose items on the trucks. Noise from the workers can also be experienced by locals as they travel to and from site.
Extent	Site
Duration	Short term/ once off
Intensity / Severity	Low
Probability / Certainty	Probable
Significance	Low
Proposed mitigation: Access roads should be provided with a water tanker lorry, equipped with a mounted water pump engine that will be used to sprinkle water on the road surface and suppress dust. Loading of equipment should be done in such a manner that items are placed tightly against each other so that they do not collide against each other as the truck rocks through unstable surfaces of the access roads. High speeding should be discouraged at all times as dust is generated the most with high speed. Construction vehicles should be kept in good condition at all times. Vehicles in good condition are not likely to generate high pitched roars especially if operated properly. Loading bins of vehicles should be rubberised as that reduces rattling sounds. Construction workers should be alerted not to scream at the public especially as they pass by residential areas. The same applies to unnecessary hooting of construction vehicles.	
Cumulative impacts post mitigation:	Low
Significance rating of impact after mitigation:	Low

Table 4

Potential impact on residents and road infrastructure	
Nature of impact Traffic and neighbourhood disruption	The power lines will be crossing over the **N3 national road at two points**, the **R103** provincial road at one point where Alternative 2 meets with Alternative 1 and along the farm gravel road. Temporary closure of some lanes along the **N3** will occur during the overhead construction of the power lines and this will disrupt traffic flow on the highway. The **R103** provincial road is constantly used by heavy trucks that convey goods and farm feeds to and from Durban and local farming communities. The two roads are narrower and may not have alternative lanes that can be temporarily utilised during such overhead construction of power lines and this might result in temporary total closure of the road. This state of affairs will interfere with the supply of goods to the various points and ultimate loss of man hours and production for the transport companies, the mines and the farms. Local domestic and business day-to-day transits will be affected. Occasional power interruptions will occur during connections of the new lines to substations and during construction as some of the existing lines either share the same servitudes or crossways with the proposed ones as life power lines can be dangerous to contractors. This will affect business, industries and domestic consumers.
Extent	Local (Warden and Vrede consumers)
Duration	Short term/ once off
Intensity / Severity	Low
Probability / Certainty	Probable
Significance	Low
Proposed mitigation: Signage and notifications through media should be considered so that road users and commuters are alerted of the intended temporary closure of the roads. This can also be done through the identification of regular road users especially the transport companies using the R103 provincial road to Durban, farms and the substation. Consumers should have access to schedules of the activity which will indicate dates and times of power interruptions. Pamphlets can also be utilised to alert those that are likely to be affected.	
Cumulative impacts post mitigation:	Low
Significance rating of impact after mitigation:	Low

Table 5

Potential impact on skyline and immediate environs	
Nature of impact Visual impacts	The terrain in the Warden/Vrede area is mostly flat and undulating in most of localities. The skylines in this locality are clear with the prominent harvest silos visible in most directions of the footprint. The construction of the power lines will add to the visual impacts already eminent in the area. This will impact more in some pieces of cultivated lands where there is no vegetation in the form of trees with only the power lines sticking out. However, this will only add to the existing congested power line networks which are running all over the area.
Extent	Site (Warden and Vrede)
Duration	Permanent
Intensity / Severity	Low
Probability / Certainty	Definite
Significance	Low
Proposed mitigation: The use of monopole structures in this project will reduce the crowded visibility of the already existing power line network. Construction of these power lines should be restricted to the already existing infrastructure as recommended by both specialists and the consultant so that little change is visible. Four legged structures should only be used where there is river crossing or difficult terrains requiring well supported lines to avoid possible collapse.	
Cumulative impacts post mitigation:	Low
Significance rating of impact after mitigation:	Low

Table 6

Potential impacts on soil and water quality	
Nature of impact Pollution and spillages of hazardous waste	The use of heavy construction machinery is associated with possible leaks, spillages of hydraulic oils, diesel fuels and grease. Such spillages can contaminate the soil, surface and underground water if in larger quantities. Such spillages are detrimental to biodiversity as they strange elements with the ecosystem and obviously poisonous. Signs of the impact can be seen as grass starts dying and drying. With this, all life forms depending on the grass material for food and shelter will be affected. In this case, the soil is regarded as dead. Smaller insects that survive on the water surface will be affected as diesel and oil create a layer on the water surface thereby disturbing them as they swim and suffocating as they get covered with in a layer of oil. Disinfectants used in mobile toilets can also be detrimental to surface water and soil if not handled with care. Careless handling of full toilets during loading and transportation to sewerage treatment plant can result in spillages which might contaminate the ground and obviously surface water. Obnoxious smell of such spillage can attract flies which are capable spreading diseases.
Extent	Site
Duration	Medium term
Intensity / Severity	Low
Probability / Certainty	Unsure
Significance	Low
Proposed mitigation: Machinery with hydraulic equipments like hydraulic jacks and lifts should be inspected and maintained on a daily basis to guard against possible leakages and malfunctioning of such equipments. Refuelling of machinery and trucks should be done at a designated site and such site should be paved with a concrete slab to avoid soaking of oils into the ground in the event of accidental spillages. Storage facilities fuels and related liquids should be located away from the vicinity of surface water. A concrete slab will be easy to clean prior to overflow further contamination. Fuel container should be inspected for possible leaks at all times. Used and empty drums that contained grease, diesel, hydraulic oil and petrol should be disposed of at a registered and licensed facility to avoid pollution and contamination of soil and water. Mobile toilets on site should be handled by experienced people during loading and transportation. Toilets should be inspected for leaks routinely. Antiseptic liquids should be handled and stored in a safe place in sealed containers.	
Cumulative impacts post mitigation:	Low
Significance rating of impact after mitigation:	Low

Table 7

Potential impact on neighbourhood (social) and site	
Nature of impact Undisciplined contract workers	Experience has proven that undisciplined contract workers pose a serious problem with the surroundings where they travel, work and live. Littering is one of the major challenges experienced in and around construction sites. Food packaging material is normally discarded wherever construction workers might be having their lunch and left lying all over. Possible consumption of plastic material by livestock can lead to death of the animal. As they travel along access roads, smokers will discard cigarette buds which would still be on fire which normally ignites veld fires, hence the grassland environment along the site. Screaming and insulting of community members by undisciplined contract workers is very common as they pass by residential areas to and from site. Interference with families located along construction sites where construction workers start relationships with married women is very common. Disputes between construction workers and families erupt in this instances resulting in social instability in individual families. Prostitution comes along with such relationships where construction workers spend their monies for such services and deprive their own families of the benefits from their work which impacts on families at remote distances. The result of this state of affairs has serious impacts on work performance on the part of the workers themselves.
Extent	Local
Duration	Short term
Intensity / Severity	Low
Probability / Certainty	Unsure
Significance	Low
Proposed mitigation: The contractor should have a code of conduct documented to address the required standards in terms of team member's behaviour. Workers should be allocated a site where they can have their lunch. It should be strictly noted that smokers should not discard life cigarette buds anywhere else other than a designated smoking area where the risk of veld fire is not eminent or such be placed in ashtrays. Workers should be warned not to insult the public and respect whoever they come across. Befriending locals especially women should be prohibited at all costs. In the event where a camp site is allocated, resident security guard should be deployed for the purpose of access control and monitoring. This will help in protecting property and equipment from theft and possible damage. Through the employee wellness programme, workers should be advised to take care of their benefits in order to see growth in their socio-economic conditions of their respective families. This will encourage them to perform better in their workplace.	
Cumulative impacts post mitigation:	Low
Significance rating of impact after mitigation:	Low

Table 8

Potential impacts on regional environment and downstream	
Nature of impact Pollution and littering	Spillages of diesel, hydraulic oil, grease and other volatile fuels can be carried away with surface water run-off into rivers and neighbouring properties. This can result in water bodies being contaminated and aquatic life threatened downstream and on the man-made farm dams. Spillages can soak into ground water and into wetlands thereby impacting on the wetland ecosystem which might be eminent over time especially downstream. If in access, this can pollute underground water and render it unusable for boreholes therefore not suitable for consumption. Litter can be carried away through wind and surface run-off to neighbouring properties away from the site. This might end up in storm water drainage lines and causing blockages. Some litter might be deposited along the banks of water courses due to overflow and reduction in velocity the flow. Litter deposited on drainage sites and scattered all over is unsightly and have a serious visual impact. Livestock the likes of cattle has a tendency of swallowing plastic bags and related material which normally result into digestion complications and sudden loss of weight and sudden death.
Extent	Local
Duration	Medium term
Intensity / Severity	Medium
Probability / Certainty	Unsure
Significance	Low
Proposed mitigation: Storage facilities of fuels and related liquids should be locked and containers tightly closed to avoid accidental spillages in the event the container falls over. All surfaces where these liquids are stored should be paved with reinforced concrete slab to avoid cracks through which spillages can leak into the ground. Inspections should be conducted at all times to guard against hidden impacts occurring due to leaks. Routine litter picking should be conducted and litter bins are supplied to specific sites.	
Cumulative impacts post mitigation:	Low
Significance rating of impact after mitigation:	Low

OPERATIONAL IMPACTS – ALTERNATIVE 2

Table 1

Potential impacts on immediate environment	
Nature of impact Visual impacts	Although the locals are already familiar with the existing power lines but additional 88kV power line within already existing infrastructure will increase visual impacts in the area to another level. This will be more prominent in areas where power lines are new.
Extent	Local
Duration	Permanent
Intensity / Severity	Low
Probability / Certainty	Definite
Significance	Medium
Proposed mitigation: Efforts have been made to construct the power lines in areas that are more obscure to proposed residential development and existing residential sites. The structures to be utilised are monopoles which are much vertically compact as compared to the regular four legged structures.	
Cumulative impacts post mitigation:	Low
Significance rating of impact after mitigation:	Low

Table 2

Potential impacts on avi-fauna	
Nature of impact Negative impacts on bird species	As the power lines are going through water bodies at some points, the likelihood of birds being electrocuted is large. Removal of vegetation that serves as roosting, shelter and breeding place will definitely impact on the birds' breeding habits. The natural flight routes of birds will to a certain degree be changed as the lines might be in their usual flight directions. Bird species that forage on farms for insects and other food items might fly into the lines and ultimately electrocuted. Water loving birds are very common in the area and the power lines are at some points located near the water bodies and wetlands where these birds normally search for food and water.
Extent	Local
Duration	Permanent
Intensity / Severity	Low
Probability / Certainty	Definite
Significance	Medium
Proposed mitigation: Power lines should be equipped with bird flappers in areas where they cross over water bodies or are in the vicinity of wetlands. This will be visible from a distance to flying birds especially those with broad wing span. Power line route should follow recommended directions as outlined in the consultant and specialist's reports. The stipulations of the Environmental Management Programme should be adhered to during the construction phase of the project to avoid future liabilities.	
Cumulative impacts post mitigation:	Low
Significance rating of impact after mitigation:	Low

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
GN R544 11(xi)	***Direct impacts:*** Disturbance of fauna and flora • Fragmentation of habitat • Destruction of protected floral species • Encounter and disturbance of protected faunal species	High	Fragmentation of habitat resulting from the activity is inevitable however; sensitive areas and buffer zones around water courses including protected plant species should be avoided. Protected faunal (RDL) species should be translocated and released in a safe and similar environment should they be encountered.
	Indirect impacts: Pollution of substrate • Contamination of soil and water due to volatile fuels seepages from storage facilities and refuelling pumps • Pollution and spillages of hazardous waste	Medium	Soil and water contamination due to spillages might result. Therefore, storage and refuelling area should be designated to a specific concrete floor site and berns/ bunding walls should be built around such facilities. Refuelling site has to be more than 200m from a stream, drainage line or wetland.
	Cumulative impacts: Saturation of topsoil and long term contamination of water with fuels leaking from used containers resulting in "dead soil and water".	High	Empty grease, diesel, hydraulic oil and petrol should be disposed of at a licensed hazardous facility.
GN R544 23(ii)	***Direct impacts:*** • Visual impacts.	Medium	Structures of lower visibility should be utilised in the power line construction. Unnecessary earthmoving should be avoided.
	Indirect impacts: • Transformation of landscape	Low	The use of existing access roads, disturbed areas, existing power line servitudes, farm boundaries and service roads will alleviate unanticipated impacts resulting from the activity.
	Cumulative impacts: Over-trampled vegetation and resultant soil erosion	Low	Only designated roads should be utilised to access the activity area. Temporary roads should be rehabilitated and re-vegetated. Existing service roads should be maintained during and after completion of activity. Measures to combat possible soil erosion should be implemented.

Activity	Impact summary	Significance	Proposed mitigation
Alternative 2			
GN R544 10 (i)	***Direct impacts:*** Pollution of substrate • Contamination of soil and water due to volatile fuels seepages from storage facilities and refuelling pumps • Pollution and spillages of hazardous waste	High	Inspect machinery and equipment for possible leaks and malfunction.
	Indirect impacts: Pollution and spillages of hazardous waste	Low	Experienced people should empty or remove mobile toilets.
	Cumulative impacts: Impact on Avifauna (Electrocution)	Low	Spans that cross major drainage line and skirt water bodies should be marked with "Bird Flight Diverters" on the earth wire of the line, 5m apart, altering white and black.
Alternative 3 N/A			
	Direct impacts:		
	Indirect impacts:		
	Cumulative impacts:		
	Direct impacts:		
	Indirect impacts:		
	Cumulative impacts:		

Activity	Impact summary	Significance	Proposed mitigation
No-go option			
	Direct impacts:	High	The construction of the power line is important for reliable and continued electrical supply in Vrede and Warden town and reduces load shedding and improves the quality of life of the Phumelela Local Municipality.
	Indirect impacts:	high	
	Cumulative impacts:	Medium	

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

2. ENVIRONMENTAL IMPACT STATEMENT

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

Alternative A (preferred alternative)

According to the Heritage Impact Assessment, one site of note was identified along Alternative 1 and five sites of cultural significance were identified along Alternative 2. The site noted along alternative 1 is a large graveyard. It is the Warden Municipal Graveyard and is very large, and therefore the graves were not counted or dates determined. It is however assumed that most of the graves will be younger than 60 years, but there will likely be a few older than 60 years. Due to the sensitivity of this issue, graves are always regarded as having a **high** cultural significance.

The Visual Impact Assessment has recommended Alternative 1 as the most preferred alternative. Its alignment along the existing Power lines and servitudes is considered to cause the least impact on the landscape character due to the reduced sensitivity of the landscape along the roads and servitudes. The impact of Alternative 1 on visual receptors varies between residents, tourists and motorists. Alternative 1's great advantage lies in the less significant landscape and visual impact on tourists and residents as compared to the other alternative. The public association with transmission lines and major public roads is a common perception which makes the co-existence of these two features more acceptable.

According to the Ecological Study, few sensitive areas are found within the study area. These include watercourses and rocky ridges. Proper mitigating measures and recommendations have been put in place to either totally avoid these areas, or reduced impacts. No highly sensitive areas (no-go zones) or habitats were encountered. It must also be kept in mind that the grassland types found in the study area are endangered and vulnerable. From an ecological point of view no fatal flaw (or flaws) were found with regards to the go-ahead (go, no-go option) of the project. In other words, if all recommendations and mitigating measures are put in place the project can go ahead in terms of the ecological component of the project. The Ecological recommended power line route alternative for the proposed project is **Alternative Route 1**

Alternative B

Only the Bird Impact Assessment favours Alternative 2. Below is a summary of recommendations by the Avifaunal Specialist:

Collisions with the earthwire - The sections of line that need to be marked with Bird Flight Diverters (BFDs) need to be identified once the final alignment has been pegged and the tower positions finalised. At that stage, an avifaunal specialist must investigate the line on a structure by structure basis to indicate where BFDs must be fitted. The proposed BFD is the Double Loop Bird Flight Diverter. BFDs should be placed on the earthwire, alternating black and white, 5 metres apart.

Displacement due to habitat destruction and disturbance - The construction of new access roads in sensitive wetland and grassland habitat should be minimised. Maximum use should be made of existing roads. The recommendations of the ecological specialist report must be strictly adhered to.

Alternative C

No-go alternative (compulsory)

THIS ALTERNATIVE MEANS THAT THE PROPOSED PROJECT WILL NOT BE IMPLEMENTED AND NO ELECTRICITY WILL BE AVAILABLE FOR PEOPLE IN REMOTE RURAL RESIDENTIAL AND BUSINESS AREAS OF PHUMELELA LOCAL MUNICIPALITY. THUS THIS ALTERNATIVE IS NOT RECOMMENDED AS THE PRESENT PROBLEM WILL PERSIST.

SECTION E. RECOMMENDATION OF PRACTITIONER

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

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

N/A

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

From the analysis given and proposed mitigations in the specialist reports and other site impact assessments, the construction of the power line will have minimal negative impacts and therefore, it is recommended. It is however recommended that the mitigation measures presented in the Environmental Management Programme (EMP) be fully implemented. If there is vagueness in the wording and actions to be undertaken, clarifications must be sought from the environmental consultant and specialists involved in the completion of this reports.

Is an EMPr attached?	YES	NO

The EMPr must be attached as Appendix G.

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

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

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

_____

NAME OF EAP

_____ _____

SIGNATURE OF EAP DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information