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FINAL BASIC ASSESSMENT REPORT

for

RE CAPITAL 2 GRID CONNECTION

on

Portion 14 of the Farm Kruisrivier 270

In terms of the

National Environmental Management Act (Act No. 107 of 1998, as amended) & 2014 Environmental Impact Regulations

Prepared for Applicant: RE Capital 2 (Pty) Ltd
By: *Cape EAPrac*
Report Reference: RAM332/05
Department Reference: 14/12/16/3/3/1/1306
Case Officer: Lesego Rabothata
Date: 22 April 2016

APPOINTED ENVIRONMENTAL ASSESSMENT PRACTITIONER:

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Report reviewed by: **Louise-Mari van Zyl** (MA Geography & Environmental Science [US]; Registered Environmental Assessment Practitioner with the Interim Certification Board for Environmental Assessment Practitioners of South Africa, EAPSA); Commiittee Member of the Southern Cape International Association for Impact Assessments (IAIA). Ms van Zyl has over ten years' experience as an environmental practitioner.

PURPOSE OF THIS REPORT:

Stakeholder Review and Comment

APPLICANT:

RE Capital 2 (Pty) Ltd

CAPE EAPRAC REFERENCE NO:

RAM332/05

DEPARTMENT REFERENCE:

14/12/16/3/3/1/1306

SUBMISSION DATE

22 April 2016

FINAL BASIC ASSESSMENT REPORT

in terms of the
National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended &
Environmental Impact Regulations 2014

RE Capital 2 Grid Connection

Submitted for:
Departmental Review

Report Issued by:
Cape Environmental Assessment Practitioners

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PO Box 2070
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SUMMARY

1 INTRODUCTION

Cape EAPrac was appointed by RE Capital 2 (Pty) Ltd, as independent environmental practitioner (EAP), to facilitate the Basic Assessment (BA) process required in terms of the National Environmental Management Act (NEMA, Act 107 of 1998) for this project.

The purpose of this **Final Basic Assessment Report** is to describe the environment to be affected, the proposed project, the process followed to date (focussing on the outcome of the Draft Basic Assessment public participation process), to present specialist findings and recommendations to avoid or minimise impacts, and provide a description of how the development concept has been adjusted to consider the above.

NOTE: The RE Capital 2 Solar development was selected as a preferred Bidder under the Renewable Energy Independent Power Producers Procurement Programme (REIPPP). It is the intention of this project to strategically establish a single powerline to connect the Authorised RE Capital 2 Solar development to the National Grid via the existing Zeerust Substation.

The Draft Basic Assessment Report was available for a **30 day review and comment** period extending from **22 January to 29 February 2016**. All comments received during this period have been included in this Final Basic Assessment report that is made available for a further 21 day comment period extending from **04 March 2016 – 29 March 2016** and herewith submitted to the competent authority for decision making[1]

Should you have any further comments on the Final Basic Assessment report, please provide this to the Cape EAPrac in writing by no later than 29 March 2016. Should you have any final comments on the Final BAR, these should also be copied to the Case Officer at the details below:

Ms Nonhlahla Mkhwanazi
Private Bag X447
Pretoria
0001
Email nmkhwanazi@environment.gov.za

[1] During the stakeholder engagement process for this environmental process, the SIP coordinator of SIP10 confirmed this project to be a Strategic Infrastructure Project in terms of the National Infrastructure Plan, 2012.

NOTE: The proposed powerline alignment alternatives and substation positions were assessed in this environmental process as corridors (300m wide) to allow for minor adjustments / flexibility during the final design / micro-siting phase post environmental decision, and to avoid protracted administrative amendment processes as a result of these potential minor adjustments.

1.1 OVERVIEW OF PROJECT PROPOSAL

The proposed project entails the construction of an on-site substation (for the RE Capital 2 Solar Development as well as an overhead 132 KV powerline from the on-site substation to the Zeerust Substation.

1.2 LOCATION OF PROJECT COMPONENTS.

The project components consist of an on-site substation and a 132kv overhead line to the Zeerust Substation. A number of alternatives were considered in the environmental process.

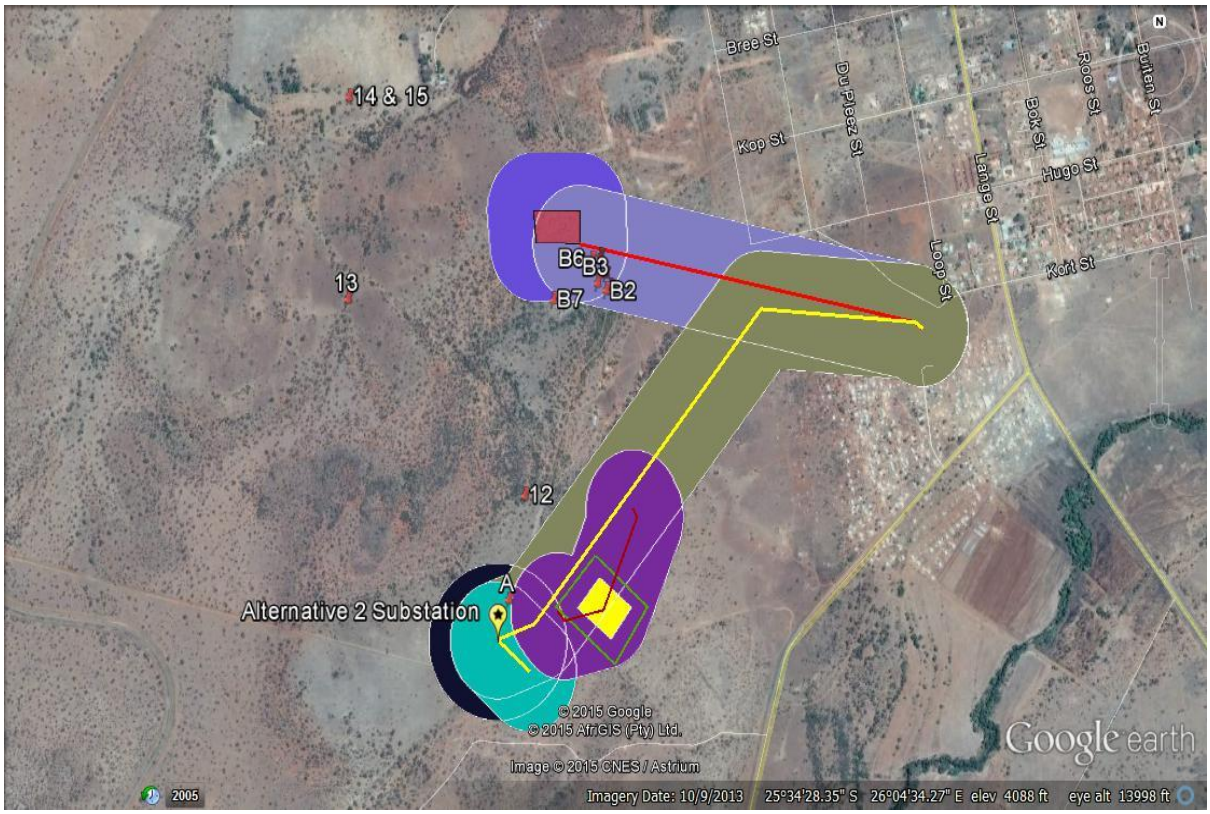

Figure 1: Location of project component alternatives.

2 CONSIDERATION OF ALTERNATIVES

The following alternatives have been considered and assessed as part of this environmental process.

PLEASE NOTE: For the purposes of this environmental Assessment, the powerline alignments as well as the sub-station positions have been considered and assessed as 300m wide corridors and have been depicted as such on relevant plans. Authorisation of a particular alternative will therefore be deemed as the authorisation of the corridor, allowing the substation and powerline to be constructed anywhere within this corridor. On maps where specific alignments and substation positions are shown, these are depicted as the centreline/point of the corridor.

The determination of reasonable and feasible alternatives took into account, inter alia, the position and available capacity of Eskom's existing infrastructure, namely 1 x 132kV powerline, 2 x 88kv powerlines and the Eskom Zeerust substation as depicted in the Figure below.

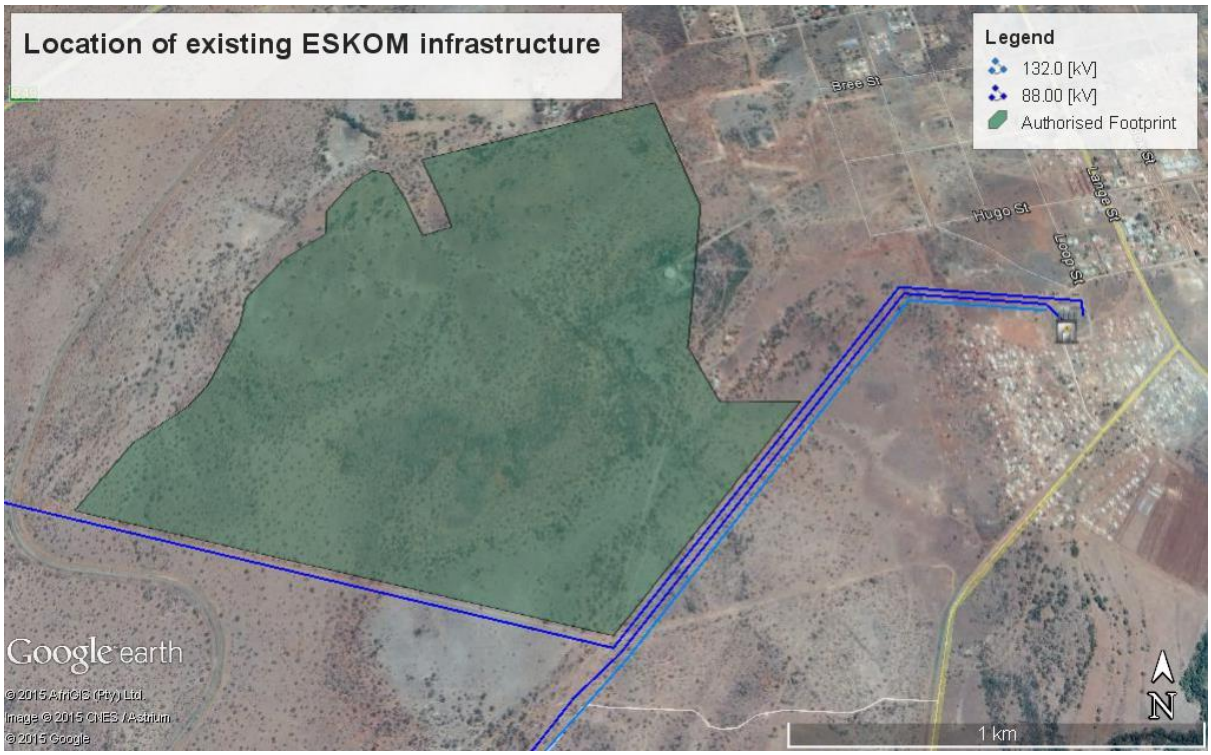

Figure 2: Existing Eskom Infrastructure in the vicinity of the approved RE Capital 2 Solar Development.

Three layout alternatives were investigated as part of the environmental process. Alternatives 1 and 2 have been eliminated from this environmental process(See Appendix J1 for a letter from the developer motivating the elimination of alternatives 1 and 2).

ALTERNATIVE 3 as described below has been submitted to the DEA for Decision making and has been selected as the preferred alternative for the following reasons:

- It is more cost effective as a result of the type of connection it allows for with the existing Zeerust substation.
- It follows an existing Eskom servitude and prevents complicated line crossings

- The route also eliminates the need for an outage that would arise from crossing the existing lines
- It allows for the most technically feasible connection with Eskom's existing substation

2.1 ALTERNATIVE 1

The Alternative 1 substation is proposed to be positioned North of the Reservoir on the approved RE Capital 2 footprint. The alternative 1 powerline will then run in an East-Southeast direction directly to the Zeerust Substation. This powerline will run adjacent to the existing powerline that serves the cell phone communication tower near this position.

The table below depicts the total estimated footprint of this alternative

Table 1: Approximate footprint of the Alternative 1 Grid Connection.

Description	Approximate Footprint
Alternative 1 Powerline	±1100m
Alternative 1 Substation	±9600m^2 (Total fenced off area)

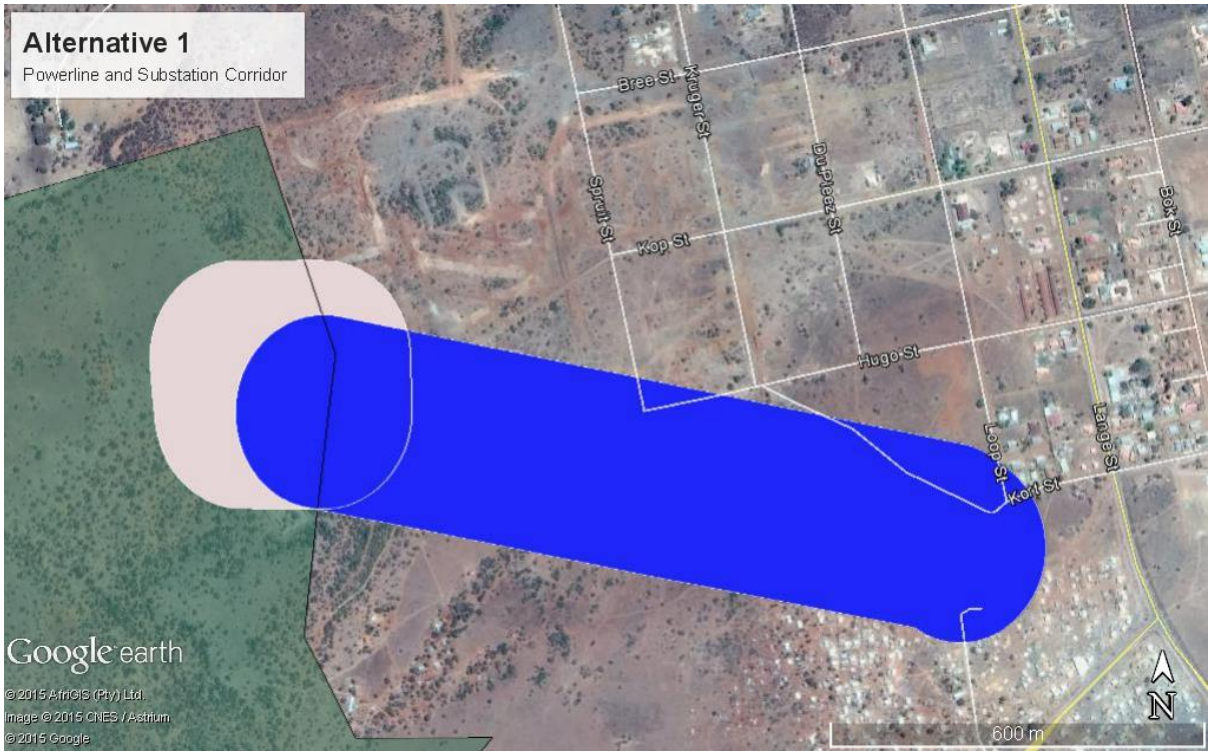

Figure 3: Alternative 1 substation and powerline corridor.

Alternative 1 has been eliminated in this environmental process and should not be considered for authorisation.

2.2 ALTERNATIVE 2

The Alternative 2 substation is situated in the South Eastern Corner of the approved PV site. The powerline will either loop in and loop out (LILO) of the existing Eskom 132 kV powerline or a new line will be constructed parallel to the existing powerlines as shown in the figure below.

The table below depicts the total estimated footprint of this alternative

Table 2: Approximate footprint of the Alternative 2 Grid Connection.

Description	Approximate Footprint
Alternative 2 Substation	±9600m^2 (Total fenced off area)
Alternative 2 Powerline – LILO option	±125m
Alternative 2 Powerline – Self Build option	±1650m

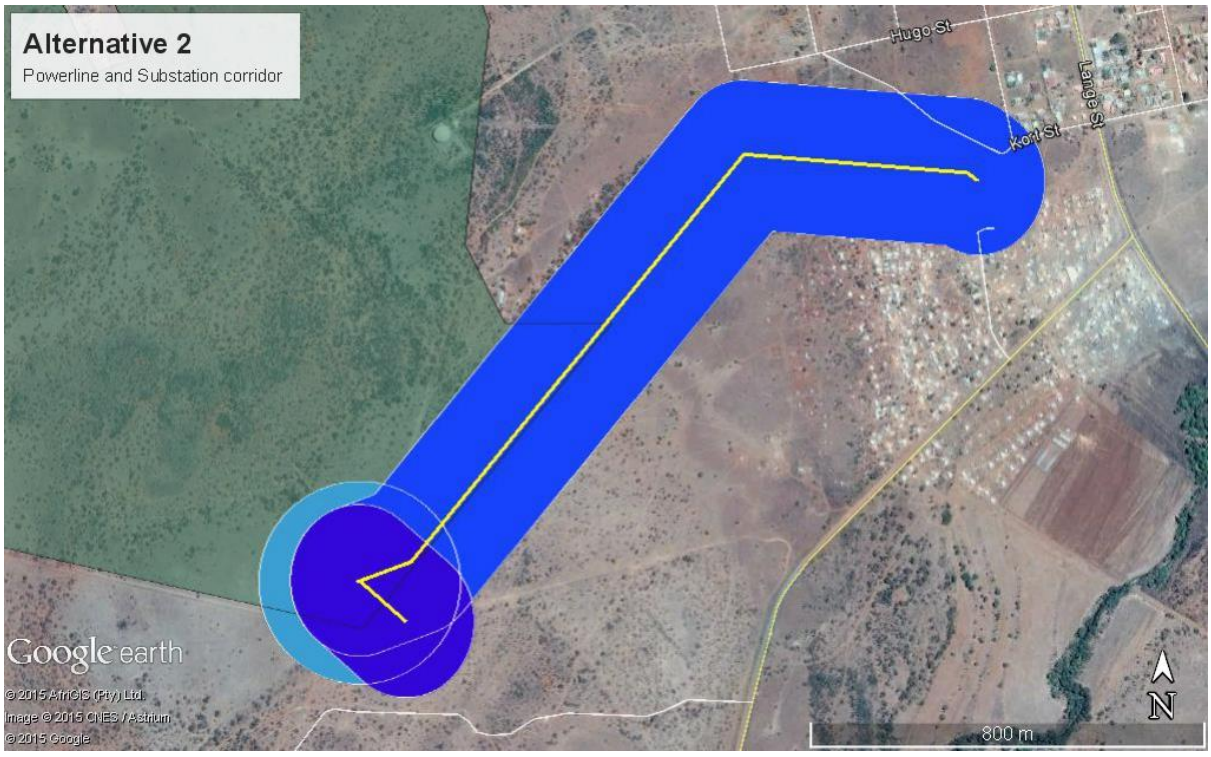

Figure 4: Alternative 2 substation and powerline corridor.

Alternative 2 has been eliminated from this environmental process and should not be considered for authorisation.

2.3 ALTERNATIVE 3 - PREFERRED ALTERNATIVE

The Alternative 3 substation position is proposed adjacent (outside) of the PV footprint along the south eastern boundary. The powerline will run in the same corridor as alternative 2 and will be constructed parallel to the existing powerlines as shown in the figure below.

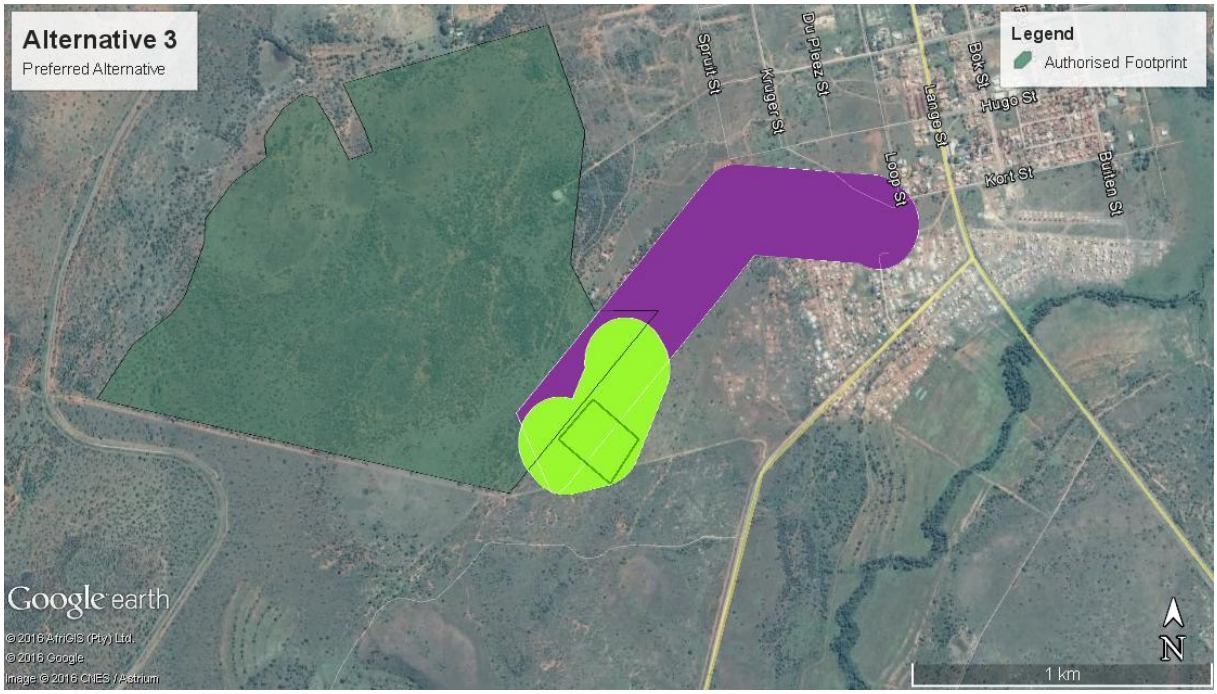

Figure 5: Showing Powerline Alternative 3 - Preferred Alternative

The table below depicts the total estimated footprint of this alternative

Table 2: Approximate footprint of the Alternative 3 Grid Connection.

Description	Approximate Footprint
Alternative 3 Substation	±9600m^2 (Total fenced off area)
Alternative 3 Powerline – Self Build option	±1350m

Layout Alternative 3 has been selected as the preferred layout for authorisation.

2.4 ALTERNATIVE 4

Alternative 4 is a variation of Alternative 1 and was proposed to mitigate a concern raised by the ecology specialist that the substation 1 position should be shifted out of the thicket

vegetation surrounding the Koppie as far as possible. In order to achieve this, substation alternative 4 is proposed to be constructed within the North Western corner of the approved development footprint. The powerline corridor runs from this position directly to the Zeerust substation as shown in the figure below (Depending where the line enters the Zeerust substation, it may be required to cross the existing Eskom Lines).

The table below depicts the total estimated footprint of this alternative

Table 4: Approximate footprint of the Alternative 4 Grid Connection.

Description	Approximate Footprint
Alternative 3 Substation	±9600m^2 (Total fenced off area)
Alternative 3 Powerline	±1300m

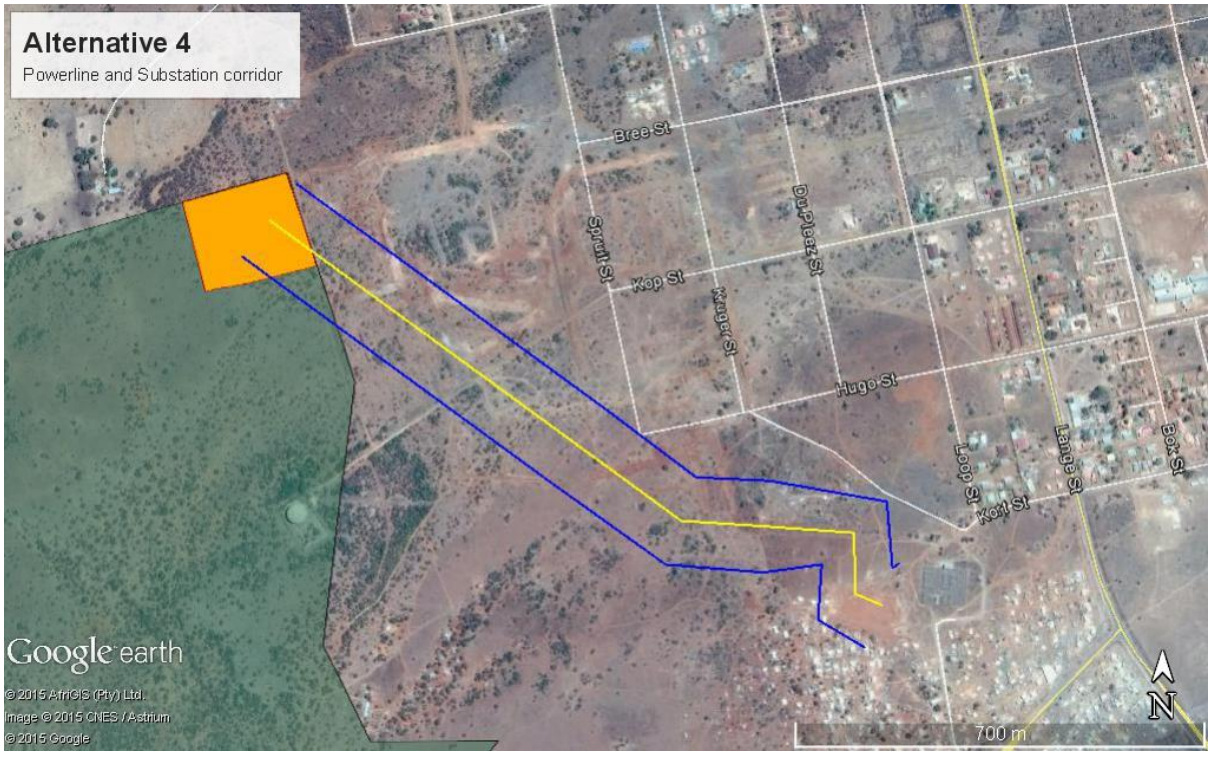

Figure 5: Alternative 4 substation and powerline corridor.

Alternative 4 has been eliminated from this environmental process and should not be considered for approval.

3 SITE DESCRIPTION AND ATTRIBUTES

3.1 REGIONAL SETTING

The approved solar site is located adjacent to the southern edge of the town of Zeerust in North West Province. It is also south and east of the N4 Pretoria-Skilpadshek motorway and the Pretoria-Mahikeng railway line. The particular study site addressed in this report is however relatively small, comprising of three alternative small sites on the eastern boundary of the solar site, for the construction of a substation, and the associated power line from the The nearest reserves to the site of avifaunal importance are the internationally-recognised Important Bird Areas (IBAs) of Pilansberg Game Reserve (SA023) to the east, Botsalano Nature Reserve (S024) to the west and Barbers- and Leeupans (SA026) to the south. Topologically, the Dwarsberg-Swartruggens ranges north of Zeerust, and their foothills where the site resides, are also linked to the Magalies- and Witwatersberg IBA (SA025) to the east. Closer by to the east is the Marico Nature Reserve near Groot Marico, and further north the Madikwe Game Reserve near Dwaalboom (Barnes 1998).

(**http://www.birdlife.org.za/conservation/iba/iba-directory).**

3.2 REGIONAL CLIMATE

Summer rainfall has a mean annual precipitation of about 550 mm and very dry winters with fairly frequent frost. For the last 2-3 years the annual rainfall around the site has been <400 mm. Mean monthly temperatures range from -0.4^{o}C in June to 36.7^{o}C in January.

3.3 GEOLOGY AND SOILS

Mainly shale and sediments on the site, presumably of the Pretoria Group within the Transvaal Supergroup, but with some dolerite boulders indicative of intrusive rocks from the Rustenburg Layered Suite of the Bushveld Igneous Complex in the northeast. The soils are mostly deep sandy loam, but shallow rocky soils also occur on the site.

3.4 TOPOGRAPHY AND DRAINAGE

The site is on undulating plains, at an altitude of 1200-1250 m a.s.l. The highest point close to the site is marked by a large concrete water reservoir and cell phone tower on the peak, but the majority of the site has gentle slopes.

3.5 LAND USE

The area was evidently been used historically for farming, mainly as grazing of livestock, especially cattle. Developments from the town now extend to the northern edge of the site, such as recently laid water, drainage, sewage and power lines, and informal settlements extend onto the site around the northeast corner.

3.6 VEGETATION TYPES

The site is in the Sourish Mixed Bushveld veld type, as described by Acocks (1988). According to Low & Rebelo (1996) the site is within Mixed Bushveld. According to the vegetation map and descriptions of Mucina and Rutherford (2006) the site is located in the Moot Plains Bushveld (SVcb8)(Figure 3). The woody plant composition of of the site is typical Moot Plains Bushveld (SVcb8).

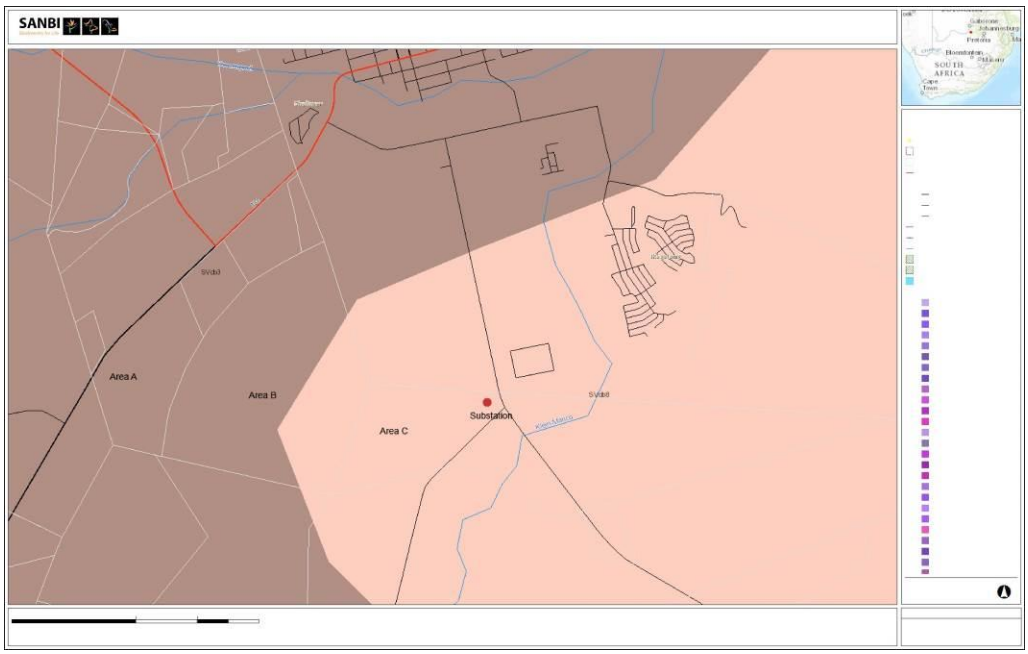

Figure 6: According to the vegetation map and descriptions of Mucina and Rutherford (2006) the site is located in the Moot Plains Bushveld (SVcb8).

3.7 CONSERVATION STATUS

Moot Plains Bushveld is classified as a Vulnerable vegetation unit, best preserved within the Magalies/Witwatersberg Nature Reserves (Mucina & Rutherford 2006) though the Ecosystem status is Least Concern (Figure 4)(SANBI & DEAT 2009) . The vegetation is often largely transformed from Pretoria to the Hartebeespoort Dam-Rustenburg area, though is largely primary bushveld towards the west. The primary land use on the site was livestock grazing, which means that the veld and the surrounding areas still support extensive tracts of bushveld. Extensive power lines already occur on the site, and most of the site is quite disturbed, Some of the habitats on site show evidence of overgrazing and neglect, exacerbated by the pressures of wood collection, burning, grazing and use from the adjacent settlements.

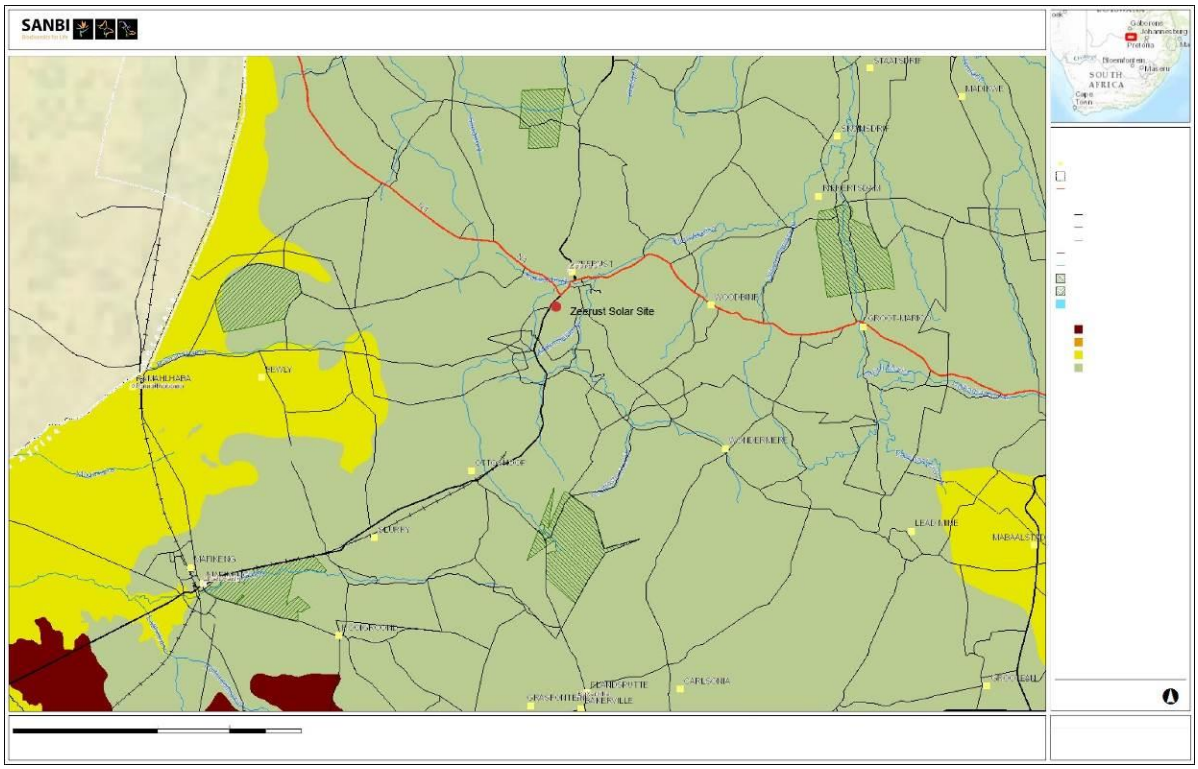

Figure 7: The ecosystem status is least concern (light green) (The yellow areas is vulnerable) (

4 ASSESSMENT OF ECOLOGICAL IMPACTS

Professor George Bredenkamp of Eco Agent was appointed to undertake an ecological (encompassing Fauna and Flora, including Avifauna). The Ecological Impact Assessment is attached in Appendix D1 with the findings summarised below.

4.1 METHODS

The following generic criteria drawn from published literature and general South African practise will be used to describe magnitude and significance of impacts in an objective, systematic manner.

These criteria are:

- Extent or scale of the impact (what size of the area will be affected?)
- Duration (how long will the impact last?)
- Intensity (the intensity of the impact is considered by examining whether the impact is destructive or benign, whether it destroys the impacted environment, alters its functioning, or slightly alters the environment itself.
- Probability (how likely is it that the impact will occur?)
- Significance (how severe will the impact be?)
- Mitigatory potential and mitigation measures

Impacts should be identified for the construction and operational phases of the proposed development. Proposed mitigation measures should be practical and feasible such that they can be realistically implemented by the applicant.

The impacts are given in table form. Conventions and definitions used in these tables are described below:

Extent of impact

Site: Effect confined to the development area

Local: Effect limited to within 3-5km of the development area

Regional: Effect extends beyond the borders of the development area to influence the area as a whole.

Duration of impact

Short: Effect last for a period up to five years

Medium: Effect continues for a period of between five and ten years

Long: Effect continues for a period in excess of 10 years

Permanent: Effect lasts permanently

Intensity

Low: Will have no or little effect on the vegetation and fauna

Medium: Will have some effect but parts of vegetation will remain in tact

High: Will destroy the vegetation or habitat for fauna completely

Probability of occurrence

Low: Less than 33% chance of occurrence

Medium: Between 33 and 66% chance of occurrence

High: Greater than 66% chance of occurrence

Significance

Low: Where the impact will have a relatively small effect on the vegetation which does not need to be accommodated

Medium: Where the impact can have an influence on the vegetation that might require mitigation

High: Where the impact definitely has an impact on the vegetation and may need modification of the project

Status

Positive: Impact will be beneficial to the environment

Negative: Impact will not be beneficial to the environment

Neutral: No positive or negative impact

Confidence

Low: It is uncertain whether the impact will occur

Medium: It is likely that the impact will occur

High: It is relatively certain that the impact will occur

4.2 RESULTS

Table 3: Impact Table 1: Alternative 1 substation

Impact on Vegetation	Extent	Duration	Intensity	Probability	Significance	Status	Confidence
Plant Communities 1	Site	Permanent	High	High	Medium	Negative	High
Plant Community 2	Site	Permanent	High	Low	Medium	Negative	High
Plant Community 3	Site	Permanent	Low	Low	Low	Negative	Medium
Plant Community 4	Site	Permanent	High	High	Low	Negative	High
Impact on plant species							
Indigenous species	Site	Permanent	High	High	Medium	Negative	High
Alien plant species	Site	Permanent	Low	High	High	Positive	High
Impact on fauna							
Mammals	Site	Permanent	Low	Low	Low	Neutral	High
Birds	Site	Permanent	Low	Low	Low	Neutral	High
Herpetofauna	Site	Permanent	Low	Low	Low	Neutral	High

4.2.1 Discussion

Plant Communities 2: This plant community has a Medium-High ecological sensitivity. Although the species richness is generally high, no plant species of conservation importance,

red data or protected status occur here. The rocky outcrops form a specific type of habitat with a specific plant species composition, especially forbs and also specialised habitat for fauna, especially herpetofauna, The species richness is high (39 indigenous plant species recorded), though none of these species is considered to be rare, threatened or protected, causing its sensitivity to be Medium-High.

The Alternative 1 substation will possibly be partly located on this habitat. The footprint of the substation is very small, and here the vegetation will have to be destroyed. A location slightly more northwards, but still within the footprint area, will avoid this rocky terrain, and will be further away from the dense sensitive vegetation surrounding the water reservoir. This is only a "small" suggestion, should not be interpreted as a necessity. (However see Plant Community 3 below). The impact of fauna will be low.

Plant Community 3: This plant community has High ecological sensitivity. It occupies very small surface area on the reservoir hill. These rocky outcrops form a specific type of habitat with a specific plant species composition, especially trees, The species richness is high (38 indigenous plant species recorded), though none of these species is considered to be rare, threatened or protected, causing its sensitivity to be Medium-High. No development should occur on the hill, this area should be protected and conserved (Figure 6).

For the current study It seems, from the maps provided to EcoAgent, as if the Alternative 1 substation may infringe somewhat into this ecosystem. It was noted that the main project's Environmental Authorisation includes a condition that a 100 m buffer be kept around the reservoir at the top of the ridge. This buffer is required in order to reduce impact on the denser / more sensitive vegetation as well as to reduce visual scarring. The positioning of the substation would thus still have to satisfy two criteria as per the existing environmental authorisation, namely:

- The 100m buffer from the reservoir would still be applicable.
- The substation would still be have to be situated in the approved footprint of the facility.

It is suggested that the footprint of the substation be moved somewhat to the north to avoid any constraints or sensitive areas, but remain within the buffer to avoid having to amend the authorisation.

Plant Community 4: This plant community is the least ecologically sensitive. The proposed substation development on this vegetation can be supported.

Table 4: Impact Table 2: Alternative 2 substation

Impact on Vegetation	Extent	Duration	Intensity	Probability	Significance	Status	Confidence

Plant Communities 2	Site	Permanent	High	High	Medium	Negative	High
Plant Community 4	Site	Permanent	High	High	Low	Negative	High
Impact on plant species							
Indigenous species	Site	Permanent	High	High	Medium	Negative	High
Alien plant species	Site	Permanent	Low	High	High	Positive	High
Impact on fauna							
Mammals	Site	Permanent	Low	Low	Low	Neutral	High
Birds	Site	Permanent	Low	Low	Low	Neutral	High
Herpetofauna	Site	Permanent	Low	Low	Low	Neutral	High

4.2.2 Discussion

Plant Communities 2: On this locality Plant Community 2 is poorly developed, and not very rocky, though the soil is quite shallow. However, this plant community has a Medium-High ecological sensitivity. The impact of the development on the vegetation will be low. . Although the species richness is generally high, no plant species of conservation importance, red data or protected status occur here. The proposed alternative substation can be supported on this site.

It is suggested that the footprint of the substation be moved somewhat to the north to avoid any constraints or sensitive areas, but remain within the buffer to avoid having to amend the authorisation.

Plant Community 4: This plant community is the least ecologically sensitive. The proposed substation development on this vegetation can be supported.

Table 5: Impact Table 3: Alternative 3 substation

Impact on Vegetation	Extent	Duration	Intensity	Probability	Significance	Status	Confidence
Plant Community 4	Site	Permanent	High	High	Low	Negative	High
Impact on plant species							

Indigenous species	Site	Permanent	High	High	Medium	Negative	High
Alien plant species	Site	Permanent	Low	High	High	Positive	High
Impact on fauna							
Mammals	Site	Permanent	Low	Low	Low	Neutral	High
Birds	Site	Permanent	Low	Low	Low	Neutral	High
Herpetofauna	Site	Permanent	Low	Low	Low	Neutral	High

4.2.3 Discussion

Plant Community 4: This plant community is the least ecologically sensitive. The proposed Alternative 3 substation is is restricted to this vegetation and development can be supported.

Conclusion: Substations

From a biodiversity point of view, especially flora, the Alternative 3 Substation is preferred, with Alternative 2 can also be supported. Alternative substation 1 is the least preferred.

Table 6: Impact Table 4: Alternative 1 Power line

Impact on Vegetation	**Extent**	**Duration**	**Intensity**	**Probability**	**Significance**	**Status**	**Confidence**
Plant Community 1	Site	Permanent	Medium	Medium	Low	Negative	Medium
Plant Communities 2	Site	Permanent	High	High	Medium	Negative	High
Plant Community 4	Site	Permanent	High	High	Low	Negative	High
Impact on plant species							
Indigenous species	Site	Permanent	High	High	Medium	Negative	High
Alien plant species	Site	Permanent	Low	High	High	Positive	High
Impact on fauna							
Mammals	Site	Permanent	Low	Low	Low	Neutral	High
Birds	Site	Permanent	Low	Low	Low	Neutral	High
Herpetofauna	Site	Permanent	Low	Low	Low	Neutral	High

4.2.4 Discussion

Plant Community 1 has very limited cover in this area, and should not be affected much

Plant Community 2: The proposed Alternative 1 power line will cross rocky area west of the existing Eskom substation. Although this plant community has a Medium-High ecological sensitivity, a high species richness, no plant species of conservation importance, red data or protected status occur here. The existing power line servitude is very close to this proposed alignment. It is suggested the this area is quite disturbed, due to close-by residential area with many people walking on several footpaths, and the closeness of the existing power lines. The proposed power line can be supported.

Plant Community 4: This plant community is the least ecologically sensitive. Large parts of the proposed Alternative 1 power line alignment is furthermore very disturbed. The proposed power line development on this vegetation can be supported.

Table 7: Impact Table 5: Alternative 2 power line

Impact on Vegetation	**Extent**	**Duration**	**Intensity**	**Probability**	**Significance**	**Status**	**Confidence**
Plant Communities 2	Site	Permanent	High	High	Low	Negative	High
Plant Community 4	Site	Permanent	High	High	Low	Negative	High
Impact on plant species							
Indigenous species	Site	Permanent	High	High	Medium	Negative	High
Alien plant species	Site	Permanent	Low	High	High	Positive	High
Impact on fauna							
Mammals	Site	Permanent	Low	Low	Low	Neutral	High
Birds	Site	Permanent	Low	Low	Low	Neutral	High
Herpetofauna	Site	Permanent	Low	Low	Low	Neutral	High

4.2.5 Discussion

The proposed preferred power line will cross rocky area west of the existing Eskom substation. Although this plant community has a Medium-High ecological sensitivity, a high species richness, no plant species of conservation importance, red data or protected status occur here. The existing power line servitude is very close to this proposed alignment. It is

suggested the this area is quite disturbed, due to close-by residential area with many people walking on several footpaths, and the closeness of the existing power lines. The proposed power line can be supported.

Plant Community 4: This plant community is the least ecologically sensitive. Large parts of the proposed preferred power line alignment is furthermore very disturbed. The proposed power line development on this vegetation can be supported.

Table 8: Impact Table 6: Alternative 3 power line

Impact on Vegetation	Extent	Duration	Intensity	Probability	Significance	Status	Confidence
Plant Community 4	Site	Permanent	High	High	Low	Negative	High
Impact on plant species							
Indigenous species	Site	Permanent	High	High	Medium	Negative	High
Alien plant species	Site	Permanent	Low	High	High	Positive	High
Impact on fauna							
Mammals	Site	Permanent	Low	Low	Low	Neutral	High
Birds	Site	Permanent	Low	Low	Low	Neutral	High
Herpetofauna	Site	Permanent	Low	Low	Low	Neutral	High

4.2.6 Discussion

Plant Community 4: This plant community is the least ecologically sensitive. The proposed power line development on this vegetation can be supported.

Conclusion: Power lines

- From a biodiversity point of view, the short loop in-loop out at the alternative substation 3 and close-by power line is preferred, as this will cause the least disturbance.
- The short loop in-loop out at the alternative substation 2 and close-by power line is also suitable, as this will also cause little disturbance. It is, however, understood that this option has technical problems.
- If the above is not possible then all-in-all the Eskom Alternative 1 substation and power line can be used, as this is a shorter distance, and large part of this transect is already disturbed. In this case it is suggested that the substation be moved slightly to

the north, to avoid disturbance of more sensitive ecosystems. This is, however, not imperative.

- In general bird collisions are the most serious impact on birds. Eskom has standard mitigation measures.
- The impact on other fauna is very small.

4.3 THE ECOLOGICAL IMPORTANCE OF THE STUDY SITE

Bushveld is a species-rich habitat for birds, so any relatively undisturbed tract has some ecological importance, especially if within a Vulnerable vegetation unit such as the Moot Plains Bushveld. Therefore any degradation or transformation of the vegetation on site will reduce its ecological and conservation importance. Some degradation has already occurred on site, especially by existing Eskom power lines, soil excavation and dumping and residential area. The study site as a whole has relatively low ecological importance, being relatively small in area, has limited areas of high sensitivity and does not have red data plant species and limited faunal species. For birds, the most significant element on the site is the presence of a healthy population of Red-billed Oxpeckers.

4.4 IMPACTS ON VEGETATION, FLORA AND FAUNA

The main concern with the substations is habitat loss resulting in the displacement of vegetation, and thereby also changing or destroying faunal habitats. The footprint of the substation is, however so small that the impact will be minimum.

The impact of the proposed substation and power line development on vegetation and flora is expected to be of low significance. The Alternative 3 substation and powerline will have the least impact on biodiversity.

Concerning the impact of power lines, on general vegetation and flora, and also mammals and herpetofauna, the impact of power lines is restricted to the construction phase, acknowledging the very small footprint of the pylons, and keeping an access road for maintenance. Concerning birds, however, all that can be offered with respect to possible impacts on birds are based on the position statements and guidelines established by BirdLife South Africa (Smit 2013).

- **Effects of lines and associated structures:**

  Lines and their supporting poles/pylons intrude into previously open space. This has two new consequences for birds along their route. First it increases the risk of aerial collisions, and second it provides potential perch/roost/nest sites. The collision risks depend on a variety of factors, the biology of bird species in the area, the location of the lines in relation to normal bird flight paths, and the prominence and visibility by day/night

of the structures relative to their surroundings. Use of the structures by birds has the potential for positive and negative consequences, positive in providing new perch/roost/nest sites safe from human and other disturbance, such as hunting perches for raptors or roost/nest sites inaccessible to predators, or negative in increasing the predation pressure on bird (and other animal) prey species living below. All these effects are most intense for the novelty they introduce into flat open treeless habitats, such as grassland and desert.

There is also a risk to birds of electrocution if birds land/perch/take-off in such a way that they touch live and earth lines. This risk exists regardless of the voltage of the lines, but many/most modern line and pole designs by Eskom have reduced this risk to a minimum, since short circuits not only kill birds but also cause power outages. Transformer boxes below lines for local distribution also cause electrocution in birds, so their numbers, placement and insulation must also be considered.

There are several power lines already on site in a disturbed/transformed area. The new lines will mostly run within the existing Eskom servitude. Effects from these power lines have presumably already been expressed in the avifauna present, with signs of use as perches but none of nesting or roosting. The steel-lattice pylons are considered most relevant in these regards, especially as perches for any of the larger raptors (falcons, eagles, vultures) visiting the area, especially for vultures arriving to investige and roost while consuming any larger carcasses.

- **Habitat destruction and disturbance of vegetation and loss of plant species by the power lines:**

  The general effect of construction on the site for the substations and power lines is that the vegetation of the construction area will be destroyed in the case of the substations, or at least disturbed by the construction of the power lines, resulting in loss of vegetation cover and plant species from the site. On this particular site no threatened, rare, endemic species or protected tree species occur. On this site the relatively small footprint of the total development (substation and power line) on the landscape is unlikely to cause widespread loss of flora and faunal taxa. This impact is mainly during the construction phase, during the operational phase the vegetation, flora and fauna habitat within the power line servitude are protected against further development.

- **Loss and degradation of natural habitat**:

  The general effect of the construction and maintenance of the area will lead to loss and alteration of the natural habitats on site. These effects can be mitigated to some extent (see below), especially bearing in mind what might be left after decommissioning, but the

impact is likely to be evident for a long time, especially on such a dry and sensitive substrate with only slow wind and water erosion.

- **Increased habitat fragmentation & loss of connectivity**

  The area to be developed is relatively small, and within a gap that does not appear to compromise either the continuity or connectivity of similar habitats in the area.

- I**ncreased anthropogenic encroachment**

The development will obviously extend the area of anthropogenic encroachment, but only in a relatively small way and maybe with positive offsets to clean power creation elsewhere in the country. Within the region, every effort to secure and conserve the integrity of the remaining natural habitats should be considered as a form of mitigation, such as ensuring a minimal footprint around the power lines, access roads and associated infrastructure that must necessarily cross this habitat.

Table 9: Impacts expected to occur on and around the proposed substation and powerline development

Activity	Nature of Impact	Severity* 0 (low) – 10 (high) +ve or -ve	Likelihood** High/Medium/Low
Substation construction	Construction activities	-10	High
Pole/ power line erection	Loss of habitat	-4	Low
Servitude maintenance	Loss of habitat	-3	Low
	Disturbance	-2	Low
	Exotic/alien plant increase	-5	Medium
Internal access roads and other site clearings	Habitat and species damage	- 10	High
	Substrate transformation	- 4	Medium
	Contamination risk	- 3	Low
Equipment construction camp and service area	Habitat and species damage	- 8	High
Water supply	Servitude disturbance	- 3	Medium
Storage and use of fuels	Habitat and species damage	- 5	High

Activity	Nature of Impact	Severity* 0 (low) – 10 (high) +ve or -ve	Likelihood** High/Medium/Low
and chemicals on site	Contamination risk local	- 3	Medium
	Contamination risk beyond site	- 1	Low
Electricity connection	Habitat and species damage	- 3	Low
Movement and presence of machinery and personnel	Contamination risk	- 3	High
	Vegetation change	- 3	Medium
	Plant harvesting and / or poaching	- 8	Medium
	Substrate transformation	- 8	Medium
Staff facilities on site	Habitat and species damage	- 5	High
	Increased fire risk	- 2	Low
	Contamination risk	- 3	Medium
Access/maintenance management	Habitat and species damage	- 3	Medium
Servitude management	Servitude disturbance	- 3	Low
Water management	Contamination risk	- 3	Low
Presence and / or use of hazardous materials	Contamination risk	- 3	Low
Top soil interference	Substrate transformation	- 5	Medium
Land use interference	Vegetation change	± 2	Low
Vegetation management	Vegetation change	± 5	Medium
Material removal/recycling	Habitat and species damage	- 5	Medium
	Contamination risk	- 5	Medium
Substrate repair	Substrate transformation	- 5	Medium

Activity	Nature of Impact	Severity* 0 (low) – 10 (high) +ve or -ve	Likelihood** High/Medium/Low
Vegetation restoration	Vegetation change	± 5	Medium
	Invasion by aliens	- 5	Medium
	Improvement of vegetated cover compared to original	+ 5	Low to Medium
Top soil interference	Substrate transformation	- 8	Medium
Facility conversion	Substrate transformation	- 5	Medium

4.5 RECOMMENDED MITIGATION MEASURES

Placement of the development at **Alternative 3** will result in the least impact on biodiversity. The mitigation measures proposed below for the construction, operation and closure phases are derived from the comprehensive set of guidelines developed by the Gauteng authorities (GDACE 2009).

The most important mitigation measure is the exclusion of highly sensitive areas from the proposed development to eliminate impacts associated with high significance on sensitive vegetation and plant species of conservation concern as far as possible.

The following mitigation measures are recommended:

- Minimize area cleared for construction and building activities, including the areas used by staff during construction. Wherever possible, any activities that can damage vegetation (e.g. tracks, unloading, storage, construction sites) should be located on the areas of lowest sensitivity and only within the footprint of the development.
- Keep the number of access routes to a minimum to decrease the land area that will be transformed, thus reducing impacts and remediation. Clearly demarcate activity-specific construction areas to control and limit movement of personnel, vehicles and materials to contain the extent of the impacts to the lowest level possible.
- Harvesting or removal – other than for rescue purposes- of any plant material is strictly prohibited. Staff shall only assist with the (necessary) removal of important plant species if requested to do so, under supervision.
- Prevent introduction of alien plant species. Be aware of the fact that seeds of invasive plants can be transported by vehicles as well as staff clothing, thus eradicate weedy and invasive species around areas where staff congregate as well to prevent the spread of

seeds. All declared aliens must be identified and managed in accordance with the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983), the implementation of a monitoring programme in this regard is suggested, being the responsibility of the ECO

- Revegetate exposed soils as soon as possible to stabilise the top soils, or apply a muh of rock fragments to reduce the exposure of top soils to events that may initiate excessive erosion. Rehabilitate plant cover as a continual process, to maximize viability of the natural seed bank and reduce loss of top soil during storage. Use only indigenous (to the area) plant material. Base rehabilitation of the site at closure on the original plant species composition of the plant community affected by the development.

4.6 DISCUSSION AND CONCLUSION

The vegetation and flora study of the site proposed for the development of a substation and power line on Portion 15 of the Farm Kameeldoorn 271 JP and on the Farm Kruisrivier 270 JP, Zeerust, Ramotshere Moiloa Local Municipality, Ngaka Modiri Molema District Municipality North-West Province, revealed the presence of four plant communities as representative ecosystems. The study showed that the entire site should be classified under the Moot Plains Bushveld (Mucina & Rutherford 2006).

According to Mucina & Rutherford (2006) the conservation status of Moot Plains Bushveld is Vulnerable, although about 13% is statutorily protected. The reason for this conservation status is that almost 30% of Moot Plains Bushveld has been transformed, but this is mainly in the Pretoria-Hartebeespoort Dam-Rustenburg area, with considerable pressure for more development. The western part of Moot Plains Bushveld is, in contrast, quite natural, with very little transformed by development, and here it could be regarded as Least Threatened.

It seems that the GIS derived, coarse scale Critical Terrestrial Biodiversity areas map (SANBI) considered the area of the Moot Plains Bushveld as a CBA1. Considering the above, and from the results of this study, it is clear that the CBA1 status should only be applied to the eastern part (Pretoria-Hartebeespoort Dam-Rustenburg area) of the Moot Plains Bushveld, where biodiversity is indeed threatened. This could surely not be applied to the western parts from Rustenburg to Zeerust.

According to the SANBI Plants of South Africa database only a single red data plant species, *Cineraria alchemilloides* DC. subsp. *alchemilloides,* was ever collected within the 2526CA grid. The current survey could not confirm the presence of this species on the site.

There are no TOPS plant species present on the site.

Although the general vegetation of the area will be destroyed, the impact on the regional vegetation, on threatened or rare plant species or on protected plant species should be minimal.

No permits to clear the vegetation on the substation development area will be needed, as the no-go areas will be excluded from the development.

It is therefore suggested that, from a vegetation, flora and fauna point of view, the proposed development of a substation and power line **can be supported on any of the proposed alternatives of the site**, though the Alternative 3 is preferred.

5 IMPACT ON HERITAGE RESOURCES

Mr Anton Pelser from Anton Pelser consulting was appointed to undertake a Heritage Impact Assessment of the proposed RE Capital 2 Grid connection.

The Heritage Impact Assessment is attached in Appendix D3 and summarised below.

5.1 METHODOLOGY

5.1.1 Survey of literature

A survey of available literature was undertaken in order to place the development area in an archaeological and historical context, while previous studies done in the larger geographical area were also consulted. The sources utilized in this regard are indicated in the bibliography.

5.1.2 Field survey

The field assessment section of the study was conducted according to generally accepted HIA practices and aimed at locating all possible objects, sites and features of archaeological significance in the area of the proposed development. The location/position of all sites, features and objects was determined by means of a Global Positioning System (GPS) where possible, while detail photographs were also taken where needed.

5.1.3 Oral histories

People from local communities are sometimes interviewed in order to obtain information relating to the surveyed area. It needs to be stated that this is not applicable under all circumstances. When applicable, the information is included in the text and referred to in the bibliography.

5.1.4 Documentation

All sites, objects, features and structures identified are documented according to the general minimum standards accepted by the archaeological profession. Co-ordinates of individual localities are determined by means of the GPS. The information is added to the description in order to facilitate the identification of each locality.

5.2 DESCRIPTION OF THE AREA

The study area is located close to the town of Zeerust in the North West Province of South Africa. It is located in the Ngaka Modiri Molema District Municipality and in the Ramotshere Moiloa Local Municipality. Portions of the farm Kameeldoorn 271JP and Kruisrivier 270JP form part of the proposed development and study area.

The topography of the area is relatively flat, although there are some hills and outcrops on portions of the area. The area has been disturbed in the recent past in certain sections by agricultural activities including ploughing and cattle grazing. Large sections are however still in pristine condition, especially on the hills and outcrops in the area. Dense vegetation made visibility difficult in some sections, although a number of archaeological sites and other find-spots were identified and recorded during the earlier and September 2015 assessment.

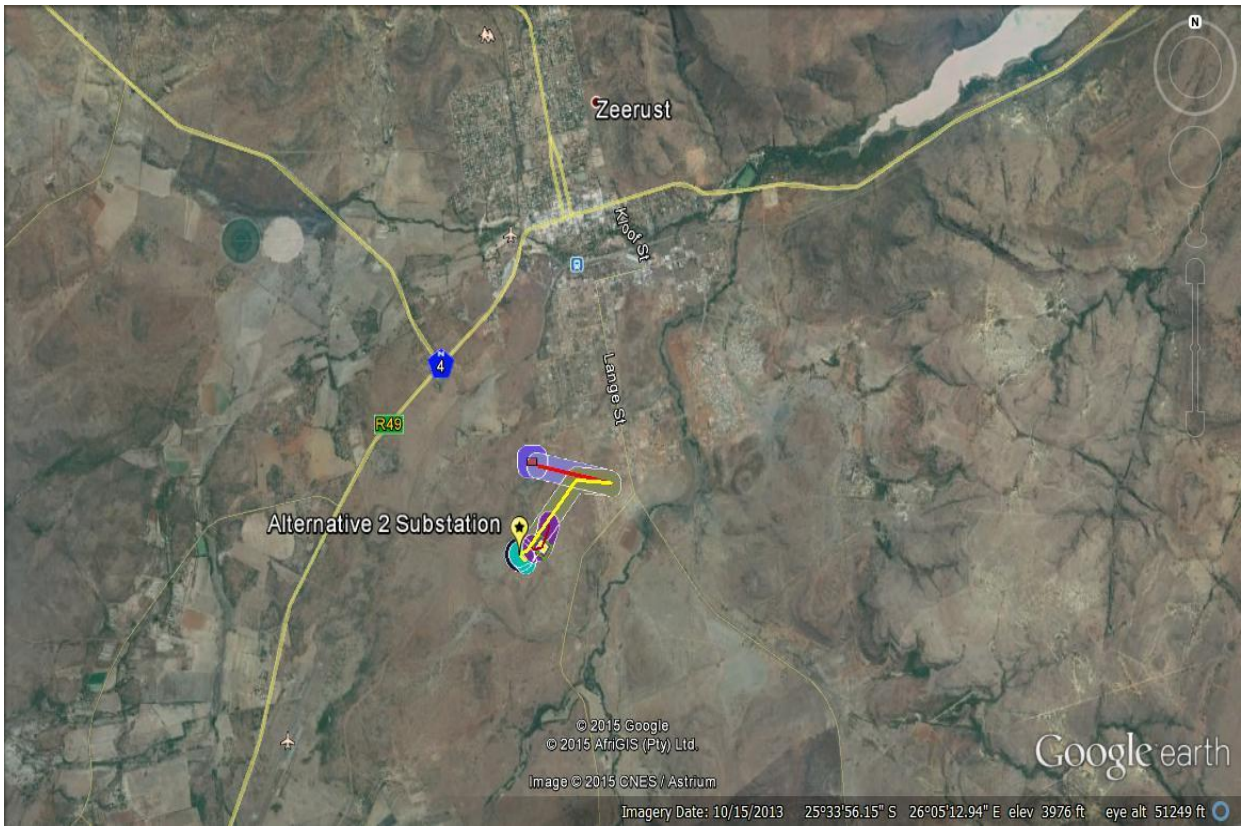

Figure 8: General location of development study area (Google Earth 2015).

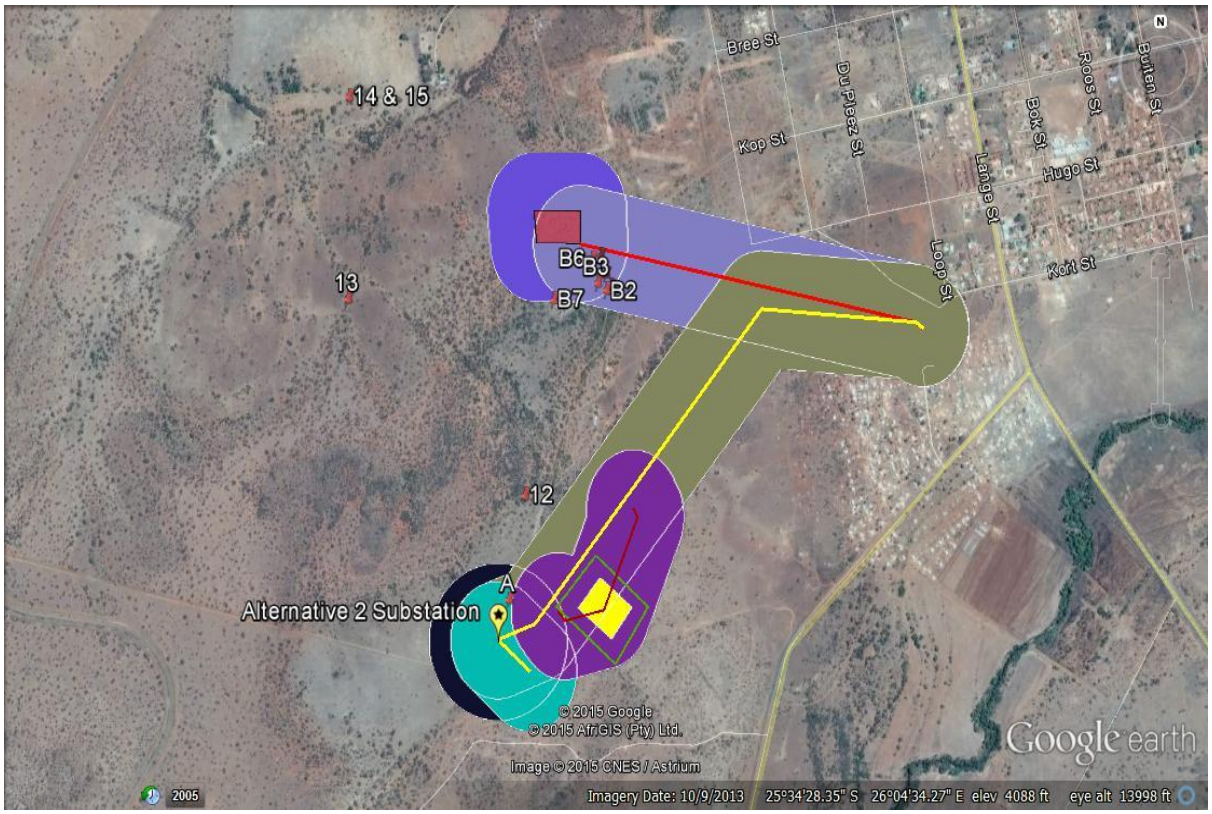

Figure 9: Closer view of development and study area showing powerline corridors

5.3 DISCUSSION

The Stone Age is the period in human history when lithic (stone) material was mainly used to produce tools. In South Africa, the Stone Age can be divided in basically into three periods. It is however important to note that dates are relative and only provide a broad framework for interpretation. A basic sequence for the South African Stone Age (Lombard et.al 2012) is as follows:

- Earlier Stone Age ("ESA") up to 2 million – more than 200 000 years ago;
- Middle Stone Age ("MSA") less than 300 000 – 20 000 years ago;
- Later Stone Age ("LSA") 40 000 years ago – 2000 years ago.

It should also be noted that these dates are not a neat fit because of variability and overlapping ages between sites (Lombard et.al 2012: 125).

Although there are no known Stone Age sites in the area, there are some rock art (engravings) sites located in the larger geographical a few kilometers west of Zeerust and near Groot Marico to the east of Zeerust (Bergh 1999: 5). A number of individual MSA/LSA stone tools were identified in the area during the assessment at different locations.

The Iron Age is the name given to the period of human history when metal was mainly used to produce artifacts. In South Africa it can be divided in two separate phases (Bergh 1999: 96-98), namely:

- Early Iron Age ("EIA") 200 – 1000 A.D;
- Late Iron Age ("LIA") 1000 – 1850 A.D.

Huffman (2007: xiii) indicates that a Middle Iron Age should be included. His dates, which are widely accepted in archaeological circles, are:

- Early Iron Age (EIA) 250 – 900 A.D.
- Middle Iron Age (MIA) 900 – 1300 A.D.
- Late Iron Age (LIA) 1300 – 1840 A.D.

In a band stretching roughly from Brits, in the east, to Zeerust, in the west, there are many known Iron Age sites (Bergh 1999: 7-8). These all belong to the LIALater Iron Age (Bergh 1999:8-9). No EIA sites are known to occur in the area (Bergh 1999: 6). By the end of the 18th century the BaHurutshe stone walled sites (capitals) were located at Kaditshwene and Tshwenyane north of Zeerust (Bergh 1999: 106). Prof. J.Boeyens of UNISA did extensive archaeological research on this and other sites in the region (Boeyens 2003). A number of Late Iron Age stone walled sites and features were located during the assessments (both the 2012 & 2013 surveys) of the area and will be discussed in more detail later on in the report.

The historical age started with the first recorded oral histories in the area. It includes the moving into the area of people that were able to read and write. Early travelers (including missionaries, hunters and adventurers) moved through this part of the Northwest Province. This included Cambell I 1820, Robert Schoon and William McLuckie in 1829, David Hume in 1830, Dr.Andrew Smith in 1835 and Cornwallis Harris in 1836 (Bergh 1999: 12, 13). They were closely followed by the Voortrekkers after that.

5.4 RESULTS OF THE FIELDWORK

A number of LIA stone walled sites and features were identified during the survey in the area. The sites are located around rocky outcrops and close to the existing Water Reservoir in the area, and fairly close to the preferred and alternative Substation locations. The sites probably form part of a large LIA settlement complex, representing individual settlement units or homesteads with features such as cattle kraals (livestock enclosures), hut bays and other related features. It possibly date to the same time period as the Hurutshe settlement complexes at Kaditshwene and other sites close to Zeerust, and around the late 18th to early 19th century. Very little cultural material was observed, and only fragments of undecorated pottery were identified during the field assessment.

Sites 12 & 13 (See Site Distribution Google Earth map) were identified during the 2013 survey, while Sites A & B (Google Map) were identified and recorded during the recent study. These sites are most likely related to a single settlement complex in the area.

5.4.1 Location 1

Cultural Significance: Medium to High

Heritage Significance: Grade III. Should be included in the heritage register and may be mitigated (high/ medium significance).

Field Ratings: Local Grade IIIB. Sites of local importance and therefore worthy of conservation.

Mitigation: No development should be allowed close to the stone walled settlement sites on and around the hills and outcrops. They should be demarcated (fenced-in) and a Heritage Management Plan for the archaeological sites in the area should be drafted and implemented. If they cannot be avoided and needs to be demolished then the sites will have to be mapped in detail under an archaeological excavation permit prior to a demolition permit being applied for.

Two other sites identified during the 2013 assessment also falls within the development boundary area. Site 14 is situated close to the Keulder farmstead, and consists of the remains of a clay-brick structure. The age could not be determined, but it could be older than 60 years of age. It is possibly related to farm laborers. Very little of the structure however remains, and its significance as a result is seriously diminished.

5.4.2 Location 2

Cultural Significance: Low

Heritage Significance: None

Field Ratings: General protection C (IV C): Phase 1 is seen as sufficient recording and it may be demolished (low significance)

Mitigation: None required.

Site 15 contains at least 6 stone cairns (heaps) of varying size. The possibility of these being graves should not be excluded, although it is more likely the result of clearance of fields during ploughing. The heaps are not in a distinct pattern (rows) as would be expected with a graveyard. The site is situated in close proximity to Site 14 as well. However, should the site be impacted on in any way by the proposed development and related activities, then it would be better to conduct social consultation in order to determine the origin and function of these

stone heaps. Should it turn out to be graves then mitigation measures will have to be implemented to minimize any negative impact. This could include fencing-in and managing the site or exhumation and relocation of the graves after all due legal processes had been followed.

5.5 LOCATION 3

Cultural Significance: High (if graves). Low (if not graves)

Heritage Significance: None

Field Ratings: Grade III: Other heritage resources of local importance and therefore worthy of conservation (**if graves**). General protection C (IV C): Phase 1 is seen as sufficient recording and it may be demolished (if not graves and low significance)

Mitigation: If these are not graves then none required. If graves and to be impacted by the development then mitigation measures will have to be implemented. This could include fencing-in and Managing, or Exhumation and Relocation after all due consultation processes have been followed and permits have been issued.

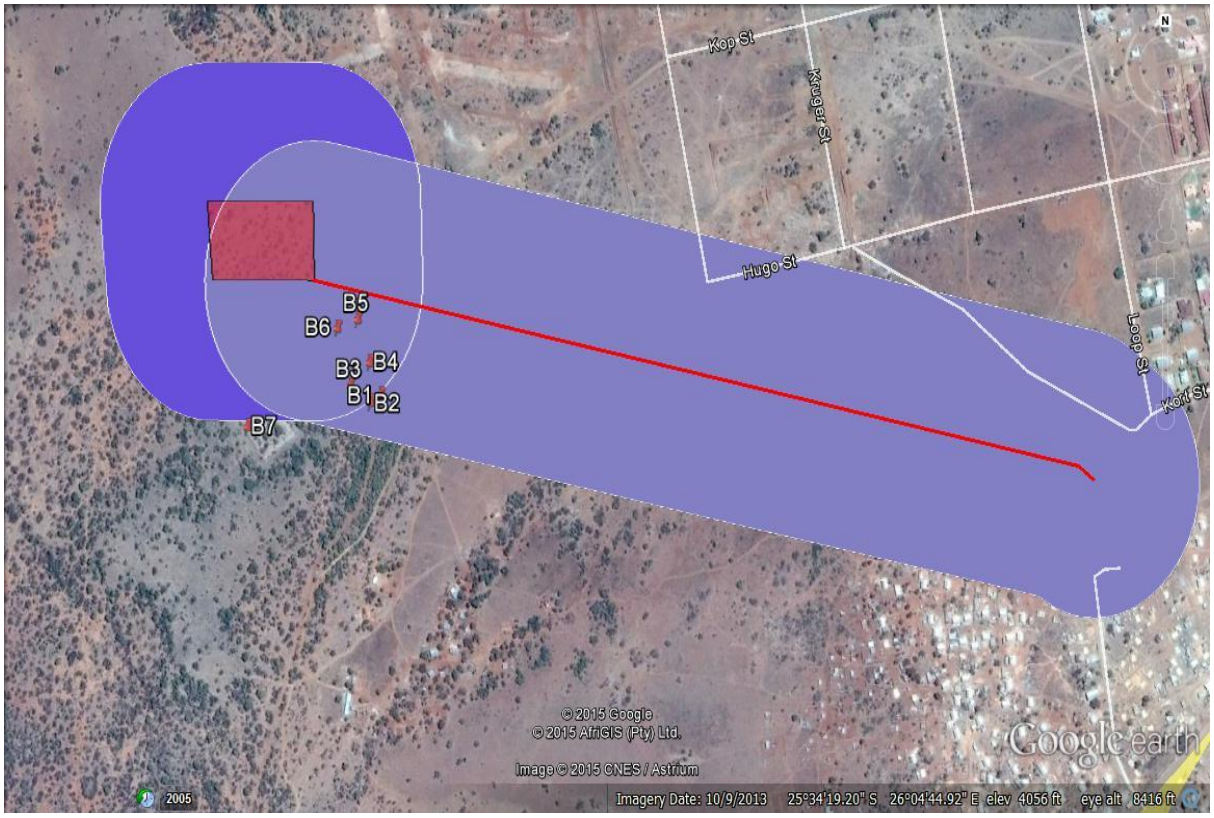

Figure 10: Aerial view of Alternative 1 study area and the sites recorded.

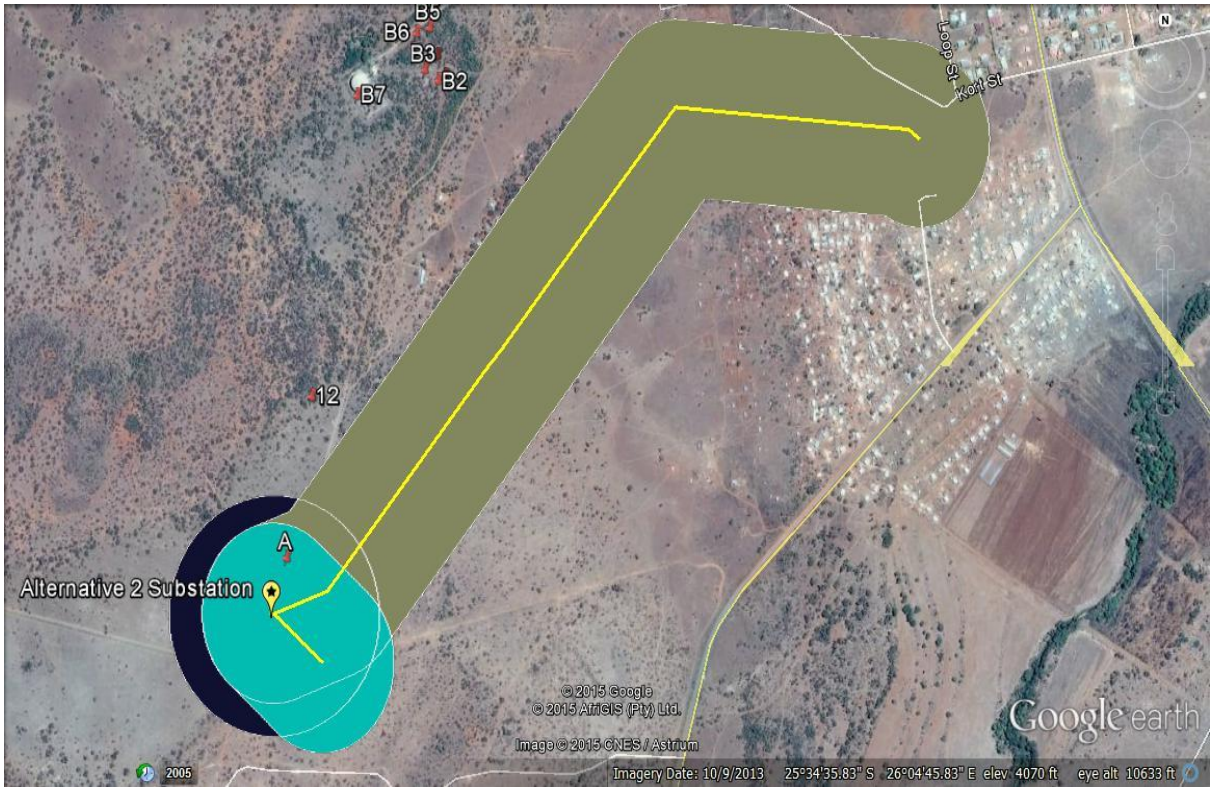

Figure 11: Aerial view of Alternative 2 study area with sites recorded

Figure 12: Aerial view showing Alternative 3 study area with sites recorded

5.6 CONCLUSIONS AND RECOMMENDATIONS

In conclusion it is possible to say that the HIA for the grid connection for the proposed development of the Solar Plant near Zeerust in the Northwest Province was completed successfully. A 2012 study by the same author (See Report AE01244P – July 2012) on Kameeldoorn 271 identified a number of Late Iron Age stone walled sites and finds. As a result of this a number of other alternative sites for the development were earmarked and a 2013 study (by Pelser) had to focus on these 3 Alternatives, as well as the original study area (See Report APAC013/64 – October 2013).

The 2015 HIA had to focus on the Solar Plant alternative sites and substation sites, as well as the powerline servitudes for the grid connection to the existing ESKOM lines and substation. The 2015 assessment did identify some new sites (LIA Stone walled sites), while a number of the sites identified in 2013 are also located within the larger boundaries/footprint of the proposed Solar Plant Area and/or close by to the some of the planned development actions. Sites 12 & 13 (also LIA sites and found in 2013) are related to the two (Sites A & B) found in September 2015), while Sites 14 & 15 are recent historical sites identified in 2013 as well, with the possible Site 14 graves being the most significant of these two site.

The following is recommended from a cultural heritage perspective:

1. All the stone walled sites in the areas should be demarcated and fenced-in to avoid accidental damage and to ensure preservation. A Cultural Heritage Management Plan for these sites should be drafted and implemented. If the sites cannot be avoided then detailed mapping and archaeological excavations needs to be conducted prior to demolition being applied for

2. If Site 15 is indeed graves then the recommended action would the fencing-in and avoiding of the site at all costs.

Finally, from a cultural heritage point of view the development should be allowed to continue taking heed of the above. The subterranean presence of archaeological or historical sites, features or objects is always a possibility. This could include unknown and unmarked burial pits. Should any be uncovered during the development process and archaeologist should be called in to investigate and recommend on the best way forward.

6 ASSESSMENT OF VISUAL IMPACTS

Mr Stephen Stead of Visual Resource Management Africa (VRMA) undertook a Visual Impact Assessment of the Proposed RE Capital 2 Grid connection.

This visual impact assessment is attached in Appendix D2 and summarised below.

6.1 BASELINE ASSESSMENT

The baseline section serves to provide understanding to the extent of the influence of the proposed landscape change, the degree of the change that will take place to the landscape, and the expected intensity by which the proposed landscape change is likely to be experienced by people around the site making use of the common landscape.

The visible extent, or viewshed, is 'the outer boundary defining a view catchment area, usually along crests and ridgelines' (Oberholzer, 2005). In order to define the extent of the possible influence of the proposed project, a viewshed analysis is undertaken from the proposed sites at a specified height above ground level as indicated in the below table making use of open source NASA ASTER Digital Elevation Model data (NASA, 2009). The extent of the viewshed analysis was restricted to a defined distance that represents the approximate zone of visual influence (ZVI) of the proposed activities, which takes the scale, and size of the proposed projects into consideration in relation to the natural visual absorption capacity of the receiving environment. The maps are informative only as visibility tends to diminish exponentially with distance, which is well recognised in visual analysis literature (Hull & Bishop, 1988).

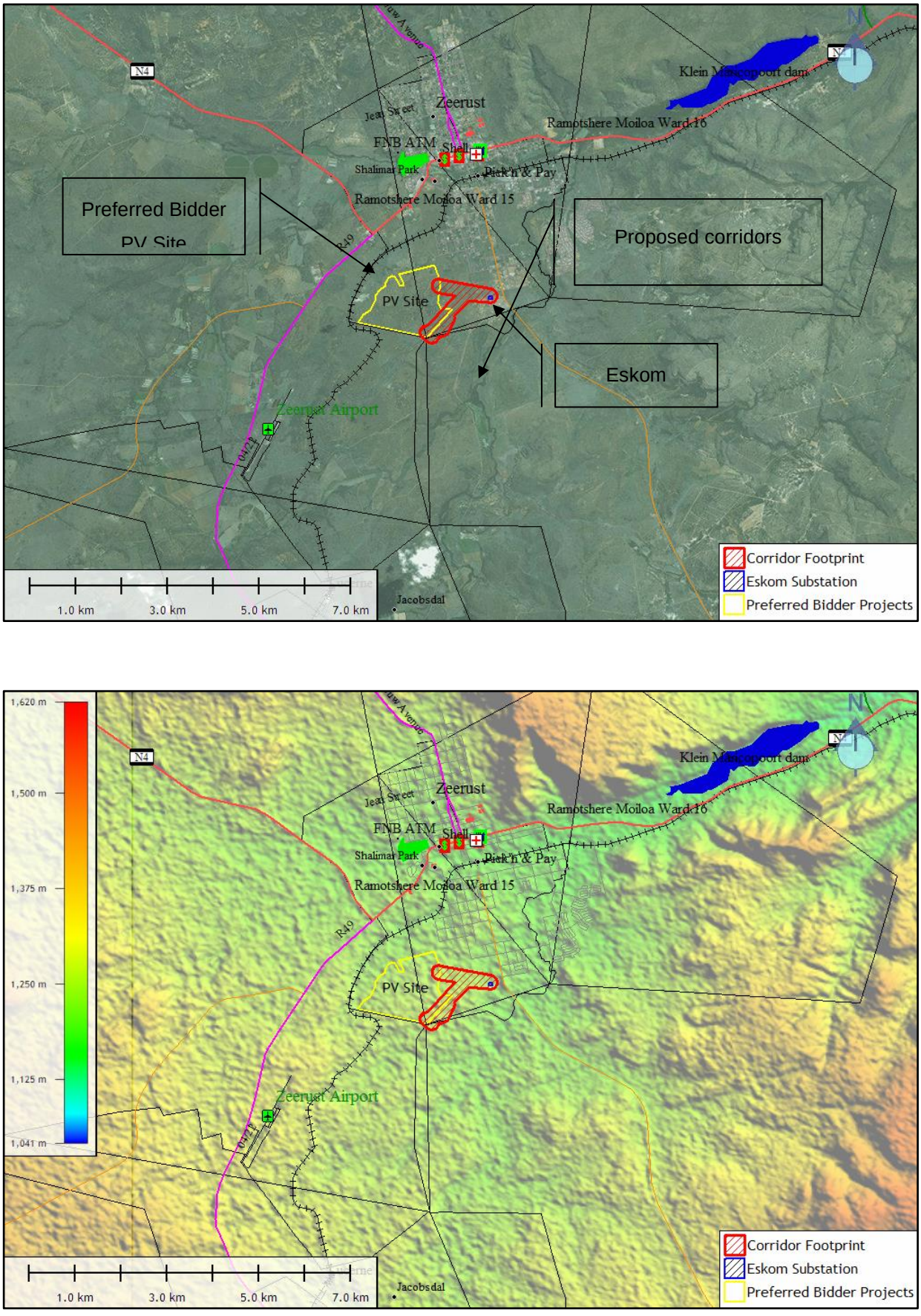

Figure 13: Comparative mapping of regional Open Source topographic and terrain maps

6.1.1 Project Visibility and Exposure

The ZVI for the proposed WEF is expected to be approximately 6km, as the visual footprint of a monopole is small, and although relatively tall in relation to the surrounding landscape, effectively dissipates in visual intensity outside of the foreground distance areas.

Table 10: Proposed Project Heights Table

Project Phase	Proposed Activity	Approx. Max. Height (m)	Approx. ZVI (km)
Construction	Crane	35	6
Operation	Monopoles	32	6

As depicted in the figure below, the viewsheds generated from both proposed routing alternatives depict a full coverage within the foreground / middle ground distance areas due to the height of the monopoles (approx. 32m) with respect to their surrounds.

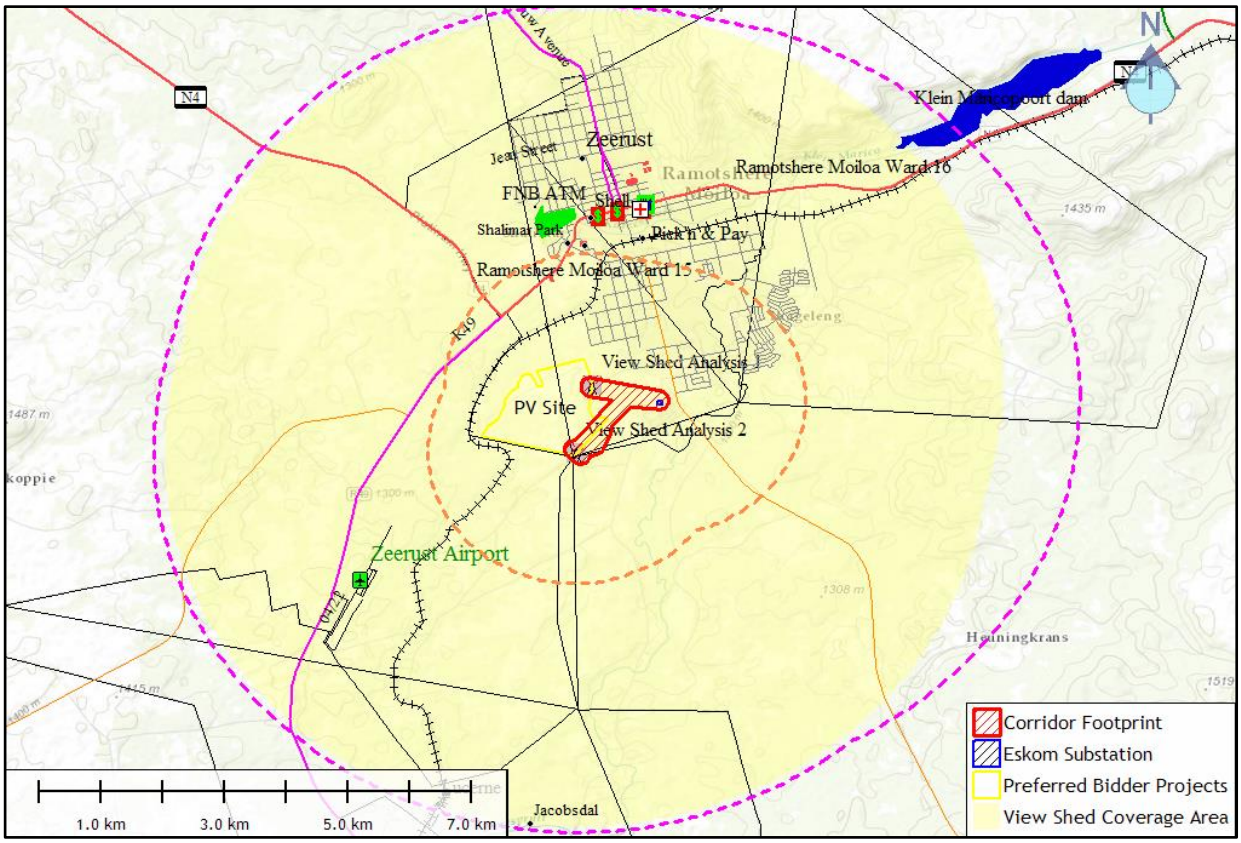

Figure 14: Viewshed for the pylon structures at the high points generated from a 32m offset overlaid onto OS Satellite Image.

Receptors and key landmarks located within the viewshed include:

<u>High Exposure</u>

- R49 Regional Road;
- Railway line;

- Zeerust south residential areas.

Medium Exposure

- Zeerust town centre;
- Zeerust north residential areas.

Due to the higher VAC levels of the town's built environment, and the northern residential treescapes, only the high exposure receptors will experience views of the proposed landscape modification.

6.1.2 Regional Landscape Character

Landscape character is defined by the U.K. Institute of Environmental Management and Assessment (IEMA) as the 'distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape, and how this is perceived by people. It reflects particular combinations of geology, landform, soils, vegetation, land use and human settlement'. It creates the specific sense of place or essential character and 'spirit of the place'. (IEMA, 2002)

Figure 15: Photograph eastwards towards the Zeerust Reservoir and cell phone tower on the low hill surrounded by bushveld vegetation.

Figure 16: Photograph of adjacent Zeerust south residential area as seen from the reservoir area.

Figure 17: Photograph of the regional Eskom Substation

Figure 18: Photograph of the existing Eskom power lines routed to the south of the proposed corridor.

Topography

The west to east terrain profile across the centre of both the proposed corridors below depicts a wide valley drained by the Klein Marico River at the lowest point. Both power line corridors are located on an east-facing slope with a moderate gradient across the length of the corridor.

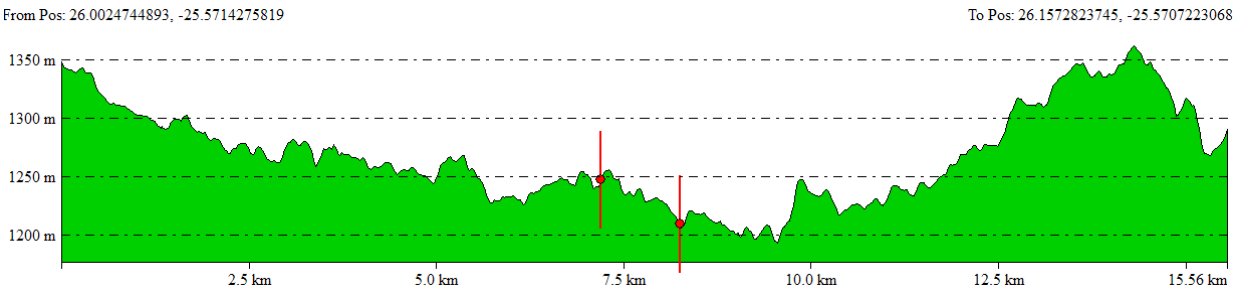

Figure 19: West to East regional terrain profile with the Preferred Power Line Corridor indicated.

The north to south terrain profile below depicts locally raised ground in the vicinity of the proposed corridors. This local height is where the Zeerust Water Reservoir is positioned adjacent to the Preferred Power Line corridor.

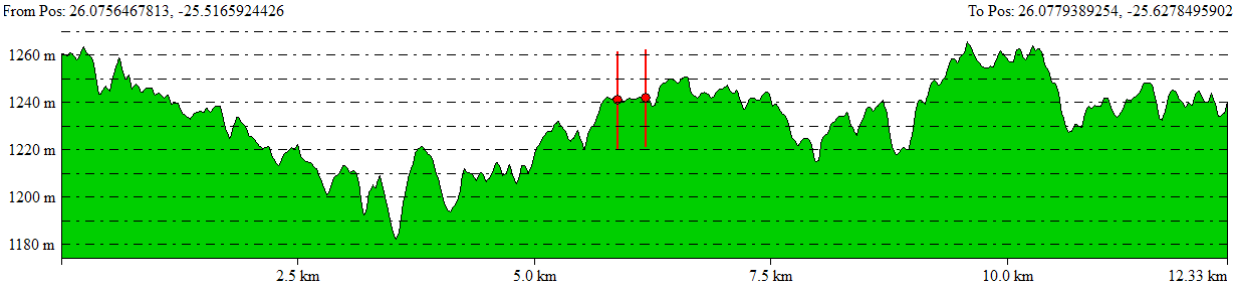

Figure 20: North to South regional terrain profile with the Preferred Power Line Corridor indicated.

Geology and Soils

Murcina and Rutherford define the geology as a combination of clastic sediments and minor carbonates and volcanics of the Pretoria Group. Soils are often stony with colluvial clay-loam but varied, including red-yellow apedal freely drained, dystrophic and eutrophic plinthic catenas, vertic and melanic clays. (Macina & Rutherford, 2006)

Vegetation

One main vegetation type is displayed on the SANBI National Vegetation Map. This is Moot Plains Bushveld, which forms part of the Central Bushveld Bioregion (SANBI, 2014). The vegetation is described as 'open to closed, low, often thorny savannah dominated by various species of Acacia in the bottomlands and plains as well as woodlands of varying height and density on the lower hillsides. Grasses dominate the herbaceous layer. Bushveld is characterised by small trees as well small to tall shrubs. (Macina & Rutherford, 2006)

Infrastructure

Infrastructure in the surrounding area includes the Zeerust street layout, the R49 Regional Road, the N4 National Road, a railway line, a large reservoir, Eskom Pylons as well as a red and white coloured lattice telecommunication mast.

Landuses

The predominant land use in the area is agriculture, with all properties zoned agricultural. To the north the landuses are associated with the town of Zeerust, which is mainly residential with a central business district.

Tourism

Along the N4 and R49, tourist accommodation centres were apparent, catering for movement of tourists along these main transport corridors.

6.1.3 Site Landscape Character

From the field survey, two main landscapes were identified. The first being the bushveld areas on the small hill surrounding the reservoir. The second being those remaining areas that are modified, mostly devoid of vegetation, in close proximity to the Eskom substation and power lines.

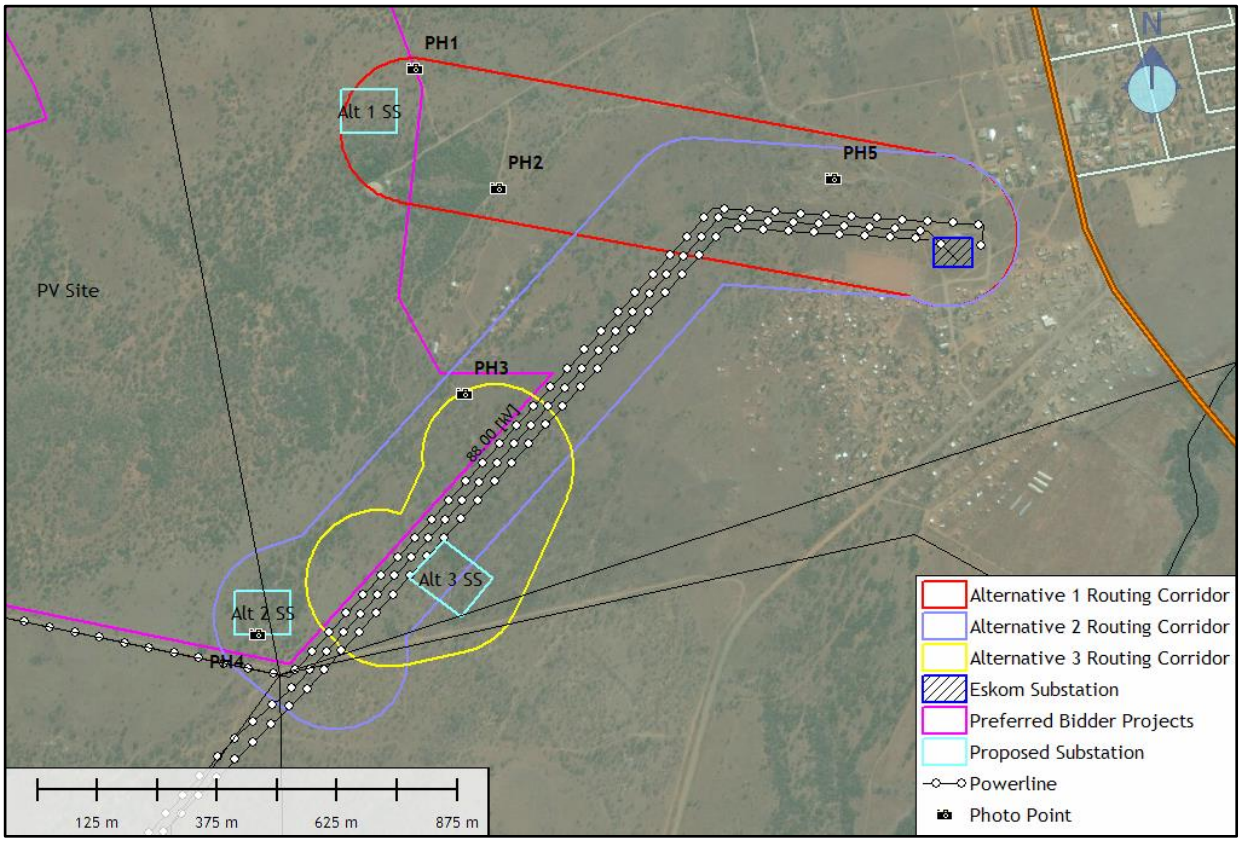

Figure 21: Site survey photograph locality map

6.2 IMPACT ASSESSMENT

Table 11: Alternative 1 Power Line Corridor Impacts Table (1km)

Impact Activity	Phase	Mitigation	Nature	Extent	Duration	Severity	Probability	Significance without	Significance with
TX Alt 1	Cons.	W/Out	-ve	Local	Short	M	P	H	
		With	-ve	Local	Short	ML	P		M
	Ops.	W/Out	-ve	Local	Long	MH	P	H	
		With	-ve	Local	Long	M	P		M
	Close	W/Out	-ve	Local	Short	M	P	ML	
		With	-ve	Local	Short	MH	P		N
	Cuml.	W/Out	-ve	Local	Long	M	P	MH	
		With	+ve	Local	Long	L	P		L

Table 12: Alternative 2 Power Line Corridor Impacts Table (LILO)

Impact Activity	Phase	Mitigation	Nature	Extent	Duration	Severity	Probability	Significance without	Significance with
TX Alt 2 LILO	Cons.	W/Out	-ve	Local	Short	VL	P	VL	
		With	-ve	Local	Short	VL	P		VL
	Ops.	W/Out	-ve	Local	Long	VL	P	VL	
		With	-ve	Local	Long	VL	P		VL
	Close	W/Out	-ve	Local	Short	VL	P	VL	
		With	-ve	Local	Short	VL	P		N
	Cuml.	W/Out	-ve	Local	Long	VL	P	VL	
		With	+ve	Local	Long	VL	P		VL

Table 13: Alternative 2 Power Line Corridor Impacts Table (Direct 1.6km)

Impact Activity	Phase	Mitigation	Nature	Extent	Duration	Severity	Probability	Significance without	Significance with
TX Alt 2 Direct	Cons.	W/Out	-ve	Local	Short	L	P	L	
		With	-ve	Local	Short	L	P		L
	Ops.	W/Out	-ve	Local	Long	L	P	L	
		With	-ve	Local	Long	L	P		L
	Close	W/Out	-ve	Local	Short	L	P	L	
		With	-ve	Local	Short	L	P		N
	Cuml.	W/Out	-ve	Local	Long	L	P	L	
		With	+ve	Local	Long	L	P		L

Table 14: Alternative 3 Power Line Corridor Impacts Table (LILO)

Impact Activity	Phase	Mitigation	Nature	Extent	Duration	Severity	Probability	Significance without	Significance with
TX Alt 2 Direct	Cons.	W/Out	-ve	Local	Short	L	P	L	
		With	-ve	Local	Short	L	P		L
	Ops.	W/Out	-ve	Local	Long	L	P	L	
		With	-ve	Local	Long	L	P		L
	Close	W/Out	-ve	Local	Short	L	P	L	
		With	-ve	Local	Short	L	P		N
	Cuml.	W/Out	-ve	Local	Long	L	P	L	
		With	+ve	Local	Long	L	P		L

6.3 FINDINGS

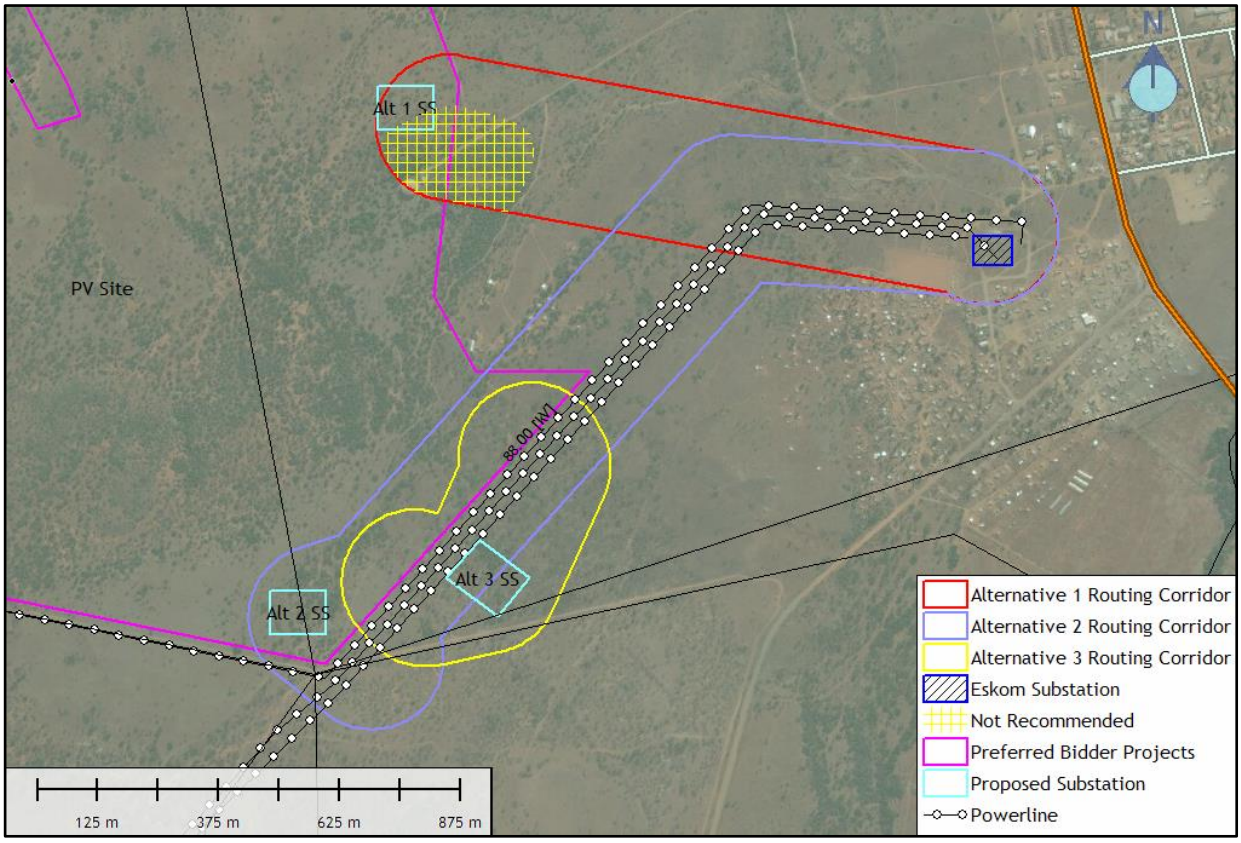

Figure 22: Mitigation Reference Point Map

6.3.1 Alternative 1 Power Line Corridor Findings

Without mitigation the Visual Significance is likely to be ***medium to high***. This is due to the increased skyline intrusion as seen from existing and future residential receptors. The adjacent area to the north is likely to be utilised as a residential area, which would place these receptor in the high exposure category. Currently, the hill feature with the curved reservoir dome is a local focal point, and if the power line is routed over the hill, the scenic quality of the hill setting will be degraded. The visual significance is moderated by the lower scenic quality of the peri-urban area surrounding the hill.

With mitigation and not routing over the hill section, the visual intrusion would be lessened to some degree, reducing the visual significance to ***medium***.

Medium negative Cumulative Effects are possible with and without mitigation. Without mitigation and the routing over the hill section would result in the bushveld covered hill setting being degraded, setting a negative precedent for further intrusive development. With mitigation and a routing around the hill, the area to the east of the hill will become visually cluttered. This is from the multiple routings, without alignment (proposed and existing 32kV Cell tower power line), from the hill to the Eskom substation.

Mitigations include:

- Route around the hill feature;
- Align with the existing Cell Tower 32kV power line as much as possible (once routed around the hill);
- Erosion and litter control during construction;
- Erosion monitoring during operation;
- Removal and rehabilitation for deconstruction.

6.3.2 Alternative 2 LILO Power Line Corridor Findings

This routing is one of the visually preferred routings as the alignment has a short LILO link to the existing Eskom power lines from the Alternative 2 Substation. Visual Significance with and without mitigation is defined as ***Very Low***. This is due to the very short length of the route, the seldom seen nature of the locality that is already degraded by the existing Eskom power line corridor.

Mitigations include:

- Erosion and litter control during construction;
- Erosion monitoring during operation;
- Removal and rehabilitation for deconstruction.

6.3.3 Alternative 2 DIRECT Power Line Corridor Findings

With and without mitigation the Visual Significance is likely to be ***low***. This is due to the close proximity of the proposed alignment to the existing Eskom power line corridor, as well as the degraded landscapes that are more associated with this routing alignment. The views of the hill would not be degraded from the northern Zeerust residential areas. Eastern residential receptors are already exposed to views of the Eskom power line corridor, where the high VAC would visually absorb the proposed routing contrast.

Low negative Cumulative Effects could take place with and without mitigation. This is due to the intensity of the multiple lines of power lines dominating the landscape. This effect is limited as the landscape is already degraded.

Mitigations include:

- Erosion and litter control during construction;
- Erosion monitoring during operation;
- Removal and rehabilitation for deconstruction.

6.3.4 Alternative 3 LILO Power Line Corridor Findings

With and without mitigation the Visual Significance is likely to be ***low***. This is due to the close proximity of the proposed alignment to the existing Eskom power line corridor, as well as the degraded landscapes that are more associated with this routing alignment. Although the proposed substation and LILO power lines would be in front of the Eskom power lines from the eastern receptors, The views of the hill would not be degraded from the northern Zeerust residential areas. Eastern residential receptors are already exposed to views of the Eskom power line corridor, but the approximately 700m distance to the settlement would assist in reducing visual exposure.

Low negative Cumulative Effects could take place with and without mitigation. This is due to the intensity of the multiple lines of power lines dominating the landscape. This effect is limited as the landscape is already degraded.

Mitigations include:

- Erosion and litter control during construction;
- Erosion monitoring during operation;
- Removal and rehabilitation for deconstruction.

6.4 CONCLUSION

It is the recommendation of this study that the Transmission Line project should be authorised, but only with mitigation. The visual preferred routing is Alternative 2 and then Alternative 3. The visually preferred substation is Alternative 2 or Alternative 3.

Without mitigation the Visual Significance for Alternative 1 power line corridor is likely to be ***medium to high***. This is due to the increased skyline intrusion as seen from existing and future residential receptors. The adjacent area to the north is likely to be utilised as a residential area, which would place these receptor in the high exposure category. Currently, the hill feature with the curved reservoir dome is a local focal point, and if the power line is routed over the hill landform, the scenic quality of the hill setting will be degraded. The visual significance is moderated by the lower scenic quality of the peri-urban area surrounding the hill. Mitigation would lesson the visual intrusion to some degree, reducing the visual significance to ***medium***. These mitigations include routing around the hill feature, and alignment with the existing Cell Tower 32kV power line as much as possible (once routed around the hill). ***Medium negative*** Cumulative Effects are possible with and without mitigation. Without mitigation and a routing over the hill section will result in the bushveld covered hill setting being degraded, setting a negative precedent for further intrusive development. With mitigation and a routing around the hill, the area to the east of the hill will

become visually cluttered. This is from the multiple routings, without alignment (proposed and existing 32kV Cell tower power line), from the hill to the Eskom substation.

For the proposed Alternative 2 and Alternative 3 power line alignments, with and without mitigation the Visual Significance is likely to be ***low***. This is due to the close proximity of the proposed alignment to the existing Eskom power line corridor, as well as the degraded landscapes that are more associated with this routing alignment. The views of the hill would not be degraded for the Zeerust residential areas located to the north of the small hill. Eastern residential receptors are already exposed to the Eskom power line corridor, where the high VAC would visually absorb the proposed routing. ***Low negative*** Cumulative Effects could take place with and without mitigation. This is due to the intensity of the multiple lines of power lines dominating the landscape. This effect is limited as the landscape is already degraded.

The Visually Preferred routing alignment are the Alternative 2 and 3 alignments, with a preference for the LILO options which link directly to the existing Eskom power lines from the Substation Alternatives 2 and 3.

7 STAKEHOLDER ENGAGEMENT PROCESS

Section 41 in Chapter 6 of regulation 982 details the public participation process that has to take place as part of an environmental process. The table below provides a quick reference to show how this environmental process has complied with these legislated requirements relating to public participation. **Appendix E** of this report contains all the information on the public participation process.

Table 15: Compliance of Public Participation with Legislated Requirements

Regulated Requirement	**Description**
(1) If the proponent is not the owner or person in control of the land on which the activity is to be undertaken, the proponent must, before applying for an environmental authorisation in respect of such activity, obtain the written consent of the landowner or person in control of the land to undertake such activity on that land. (2) Subregulation (1) does not apply in	Proof of landowner notification was in included in the application form. The proposed grid connection is deemed to constitute a linear activity and as such not required to obtain landowner consent.

Regulated Requirement	Description
respect of-. (a) linear activities;	
The person conducting a public participation process must take into account any relevant guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of an application or proposed application which is subjected to public participation by -	
(a) fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of - (i) the site where the activity to which the application or proposed application relates is or is to be undertaken; and (ii) any alternative site;	A site notice was placed the entrance to the Zeerust Substation Photographic evidence of these notices is attached in **Appendix E1.**
(b) giving written notice, in any of the manners provided for in section 47D of the Act, to -	
(i) the occupiers of the site and, if the proponent or applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;	The owner is the only current occupier of the site. Landowner notification letters were attached in the application form.
(ii) owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;	Owners of adjacent properties have been notified of this environmental process. Such owners have been requested to inform the occupiers of the land of this environmental process. Please refer to **Appendix E2** for copies of these notifications

Regulated Requirement	Description
(iii) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;	The ward councillor has been notified of this environmental process. Please refer to **Appendix E2** for copies of these notifications
(iv) the municipality which has jurisdiction in the area;	The Ramotshere Moiloa municipality has been notified of this environmental process. Please refer to **Appendix E6**for copies of these notifications.
(v) any organ of state having jurisdiction in respect of any aspect of the activity; and	Please refer to the section below showing the list of organs of state that were notified as part of this environmental process. Please refer to **Appendix E4** for copies of these notifications.
(vi) any other party as required by the competent authority;	None
(c) placing an advertisement in - (i) one local newspaper; or (ii) any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;	A notice of this public participation process was placed in the Zeerust News Please refer to **Appendix E1**for a copy of this advertisement. There is currently no official Gazette that has been published specifically for the purpose of providing public notice of applications
(d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official	Adverts were not placed in provincial or national newspapers, as the potential impacts will not extend beyond the borders of the municipal area.

Regulated Requirement	Description
Gazette referred to in paragraph (c)(ii);and	
(e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desirous of but unable to participate in the process due to - (i) illiteracy; (ii) disability; or (iii) any other disadvantage.	Notifications have included provision for alternative engagement in the event of illiteracy, disability or any other disadvantage. In such instances, Cape EAPrac will engage with such individuals in such a manner as agreed on with the competent authority.
(3) A notice, notice board or advertisement referred to in subregulation (2) must - (a) give details of the application or proposed application which is subjected to public participation; and (b) state - (i) whether basic assessment or S&EIR procedures are being applied to the application; (ii) the nature and location of the activity to which the application relates; (iii) where further information on the application or proposed application can be obtained; and (iv) the manner in which and the person to whom representations in respect of the application or proposed application may be made.	A site notice was placed at the entrance to the Zeerust Substation Photographic evidence of these notices is attached in **Appendix E1.**
(4) A notice board referred to in subregulation (2) must -	The site notices placed comply with these minimum requirements. Please refer to **Appendix E1** for details of these

Regulated Requirement	Description
(a) be of a size at least 60cm by 42cm; and (b) display the required information in lettering and in a format as may be determined by the competent authority.	
(5) Where public participation is conducted in terms of this regulation for an application or proposed application, subregulation (2)(a), (b), (c) and (d) need not be complied with again during the additional public participation process contemplated in regulations 19(1)(b) or 23(1)(b) or the public participation process contemplated in regulation 21(2)(d), on condition that - (a) such process has been preceded by a public participation process which included compliance with subregulation (2)(a), (b), (c) and (d); and (b) written notice is given to registered interested and affected parties regarding where the - (i) revised basic assessment report or, EMPr or closure plan, as contemplated in regulation 19(1)(b); (ii) revised environmental impact report or EMPr as contemplated in regulation 23(1)(b);or (iii) environmental impact report and EMPr as contemplated in regulation 21(2)(d); may be obtained, the manner in which and the person to whom representations on these reports or plans may be made and the date on which such representations are due.	Due to the fact that stakeholders or specialists have not raised significant concerns on this environmental process, it is not envisioned that this project will be required to compile a revised Basic Assessment Report.

Regulated Requirement	Description
(6) When complying with this regulation, the person conducting the public participation process must ensure that - (a) information containing all relevant facts in respect of the application or proposed application is made available to potential interested and affected parties; and (b) participation by potential or registered interested and affected parties is facilitated in such a manner that all potential or registered interested and affected parties are provided with a reasonable opportunity to comment on the application or proposed application. (7) Where an environmental authorisation is required in terms of these Regulations and an authorisation, permit or licence is required in terms of a specific environmental management Act, the public participation process contemplated in this Chapter may be combined with any public participation processes prescribed in terms of a specific environmental management Act, on condition that all relevant authorities agree to such combination of processes.	All reports that are submitted to the competent authority have been subjected to a public participation process. These include: - Basic Assessment Report; - All specialist reports - All technical and design reports - Environmental Management Plan

7.1 REGISTRATION OF KEY STAKEHOLDERS

A number of key stakeholders were automatically registered and will be given an opportunity to comment on the Basic Assessment Report. This list was agreed upon with the competent authority during the pre-application meeting. Copies and proof of these notifications are included in **Appendix E**. A list of the key stakeholders registered for this process included in the table below.

Table 16: Key Stakeholders automatically registered as part of the Environmental Process

Stakeholders Registered		
Neighbouring property owners	Provincial Conservation Department	Department of Water Affairs
Ramotshere Moiloa Municipality: Municipal Manager	Birdlife Africa.	Department of Science and Technology
Ramotshere Moiloa: Ward Councillors	South African National Roads Agency Limited	The Council for Scientific and Industrial Research
South African Heritage Resources Agency	Department of Transport and Public Works	The South African Square Kilometre Array
Endangered Wildlife Trust.	Department of Health	The South African Civil Aviation Authority
Department of Agriculture, Forestry and Fisheries	Department of Minerals and Energy	Department of Science and Technology
Provincial Department of Agriculture	Eskom	Department of Communications
SIP Co-ordinator (SIP 10)	Department of Mineral Resources	SENTECH
Department of Environmental Affairs, Biodiversity Directorate.		

7.2 AVAILABILITY OF BASIC ASSESSMENT REPORT

Registered I&AP's were notified of the availability of the Basic Assessment Report for review and comment. Copies of the report were made available at the Zeerust library. A digital copy of the report was also placed on the Cape EAPrac website.

In order to facilitate effective comment, all State Departments and key stakeholders were provided with their own digital copies of the report on CD. The Basic Assessment Report was made available for a 30 day comment period.

Proof of notifications and availability of this report is included in **Appendix E**.

The Draft Basic Assessment Report was available for a 30 day review and comment period extending from 22 January – 29 February 2016.

The Final Basic Assessment report was made available for a further 21 Days extending from 04 March 2016 – 29 March 2016.

8 CONCLUSION

Cape EAPrac is of the opinion that the information contained in the Draft Basic Assessment Report and the documentation attached was sufficient to allow the general public and key stakeholders to apply their minds to the potential negative and positive impacts associated with the development of the RE Capital 2 Grid Connection.

This Final Basic Assessment Report contains details of the Public Participation process undertaken and includes all comments received during this process.

The proposed powerline alignment alternatives and substation positions were assessed in this environmental process as **corridors** (300m wide) to allow for minor adjustments / flexibility during the final design / micro-siting phase post environmental decision, and to avoid protracted administrative amendment processes as a result of these potential minor adjustments.

SUBSTATION AND POWERLINE ALTERNATIVE 3 IS SUBMITTED FOR CONSIDERATION OF APPROVAL.

Aside from potential negative impacts, it is submitted that the proposed Grid Connection has **notable positive impacts,** in that it aligns with, and is in furtherance of, international, national, regional and local strategies to support alternative / renewable energy projects. These include the distribution of much-needed 'clean' electricity into the national grid, provision of local electrical infrastructure for use in long-term, and the provision of employment opportunities during the construction and operation phases for members of local communities.

Sufficient mitigation has been recommended to reduce potential negative impacts to an acceptable level. It is submitted that the proposed installation of the preferred overhead powerline alternatives will be sustainable in the long term and the preferred alternative can be considered to be the most feasible / viable option, from environmental and practical perspectives.

The Draft Basic Assessment Report was available for a **30 day review and comment** period extending from **22 January to 29 February 2016**. All comments received during this period

are included in this Final Basic Assessment report that will submitted to the competent authority for decision making[2]

Furthermore, the Final Basic Assessment was also made available for an additional **21 Day** comment period extending from **04 March 2016 – 29 March 2015.**

[2] During the stakeholder engagement process for this environmental process, the SIP coordinator of SIP10 confirmed this project to be a Strategic Infrastructure Project in terms of the National Infrastructure Plan, 2012.

ABBREVIATIONS

AIA	Archaeological Impact Assessment
BGIS	Biodiversity Geographic Information System
BID	Background Information Document
CBD	Central Business District
ACMP	Archaeological Conservation Management Plan
CDSM	Chief Directorate Surveys and Mapping
CEMP	Construction Environmental Management Plan
dBA	Decibel (measurement of sound)
DEA	Department of Environmental Affairs
DEA&DP	Department of Environmental Affairs and Development Planning
DEIR	Draft Environmental Impact Report
DME	Department of Minerals and Energy
DSR	Draft Scoping Report
FEIR	Final Environmental Impact Report
EAP	Environmental Impact Practitioner
EHS	Environmental, Health & Safety
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EMP	Environmental Management Programme
GPS	Global Positioning System
GWh	Giga Watt hour
HIA	Heritage Impact Assessment
HWC	Heritage Western Cape
I&APs	Interested and Affected Parties
IDP	Integrated Development Plan
IFC	International Finance Corporation
IPP	Independent Power Producer
KNP	Karoo National Park
KOP	Key Observation Point
kV	Kilo Volt
$L_{Aeq,T}$	Time interval to which an equivalent continuous A-weighted sound level
LLRC	Low Level River Crossing
LUDS	Land Use Decision Support
LUPO	Land Use Planning Ordinance
MW	Mega Watt
NEMA	National Environmental Management Act
NEMAA	National Environmental Management Amendment Act
NEMBA	National Environmental Management: Biodiversity Act
NERSA	National Energy Regulator of South Africa
NHRA	National Heritage Resources Act
NID	Notice of Intent to Develop
NSBA	National Spatial Biodiversity Assessment

NWA	National Water Act
PIA	Paleontological Impact Assessment
PM	Post Meridiem; “Afternoon”
SACAA	South African Civil Aviation Authority
SAHRA	South African National Heritage Resources Agency
SANBI	South Africa National Biodiversity Institute
SANS	South Africa National Standards
SDF	Spatial Development Framework
SMME	Small, Medium and Micro Enterprise
SAPD	South Africa Police Department
TIA	Traffic Impact Assessment
VIA	Visual Impact Assessment

SECTION 1:
BASIC ASSESSMENT REPORT

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, 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of **08 December 2014**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.

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

SECTION A: ACTIVITY INFORMATION

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

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

1 PROJECT DESCRIPTION

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

RE Capital 2 (Pty) Ltd received an authorisation for a 75 Megawatt Solar PV energy facility on portion 15 of the farm Kameeldoorn 271, portion 14 of the Farm Kruisrivier 270 near Zeerust in the Northern Cape. This project was selected as a preferred bidder under the Department of Energy (DOE) Renewable Energy Independent Power Producers Procurement programme (REIPPP) in august 2015.

This basic assessment report is been undertaken for a substation and 132kv overhead powerline to connect this approved project to the National Energy Grid via the Eskom Zeerust Substation. A number of alternative substation and powerline corridors were under investigation and are discussed in detail below.

The broad description of the project components is as follows:

- Construction of a MV powerline (overhead or underground) from the authorised PV Facility to the new substation.
- Construction of a new substation (inclusive of IPP and Eskom Components) ;
- Construction of a 132kV overhead powerline from the new substation to the existing Eskom Zeerust Substation within the 300m assessed corridor;
- Powerline and substation alternative 3 are proposed for authorisation.
- The substation and powerline must be situated within the 300m assessed corridor.

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

Listed activity as described in GN 734, 735 and 736	Description of project activity
Example: ***GN 734 Item xx xx): The construction of a bridge***	***A bridge measuring 5 m in height and 10m in***

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.	***length, no wider than 8 meters will be built over the Orange river***
GN983 Item 11(i): The development of facilities or infrastructure for the transmission and distribution of electricity (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts.	Construction of a 132Kv powerline and substation to connect the authorised RE Capital 2 Solar Development to the National Grid via the Eskom Zeerust substation. Substation and powerline alternative 3 have been selected for authorisation.

2 FEASIBLE AND REASONABLE ALTERNATIVES

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

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

Describe alternatives that are considered in this application as required by Appendix 1 (3)(h), Regulation 2014. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

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

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

a) Site alternatives

Activity is linear – Please see tables below

~~Alternative 1~~		
~~Description~~	~~Lat (DDMMSS)~~	~~Long (DDMMSS)~~
~~Alternative 2~~		
~~Description~~	~~Lat (DDMMSS)~~	~~Long (DDMMSS)~~
~~Alternative 3~~		
~~Description~~	~~Lat (DDMMSS)~~	~~Long (DDMMSS)~~

In the case of linear activities:

Alternative: **Latitude (S):** **Longitude (E):**

PLEASE NOTE: The coordinated depicted below are situated in the centre of the 300m powerline corridor. The Start co-ordinates also depict the approximate centre point of the facility substation.

Alternative S1 - **Eliminated**

• Starting point of the activity	25°34’13.55”	26°04’29.38”
• Middle/Additional point of the activity	25°34’18.73”	26°04’51.14”
• End point of the activity	25°34’22.28”	26°05’07.52”

Alternative S2 - **Eliminated**

• Starting point of the activity	25°34’49.08”	26°04’24.94”
• Middle/Additional point of the activity	25°34’30.20”	26°04’41.61”
• End point of the activity	25°34’22.28”	26°05’07.52”

Alternative S3 - **Preferred**

• Starting point of the activity	25°34’44.75”	26°04’34.60”

• Middle/Additional point of the activity	25°34'27.26"	26°04'46.99"
• End point of the activity	25°34'22.28"	26°05'07.52"

Alternative S4 - **Eliminated**

• Starting point of the activity	25°34'04.25"	26°04'26.41"
• Middle/Additional point of the activity	25°34'15.86"	26°04'47.03"
• End point of the activity	25°34'22.28"	26°05'07.52"

PLEASE NOTE POWERLINE ALTERNATIVES 1,2 & 4 have been eliminated from this environmental process and only Alternative 3 is proposed for authorisation.

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A of this form.

b) Lay-out alternatives

Please note, at this stage all the layout alternatives are considered reasonable and feasible and none of them are preferred over any of the others. The final BAR will reflect which of the alternatives are proposed for authorisation

Alternative 1		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 1 The Alternative 1 substation is proposed to be positioned North of the Reservoir on the approved RE Capital 2 footprint. The alternative 1 powerline will then run in an East-Southeast direction directly to the Zeerust Substation. This powerline will run adjacent to the existing powerline that serves the cell phone communication tower near this position. The table below depicts the total estimated footprint of this alternative **Table 17:** Approximate footprint of the Alternative 1 Grid Connection.	Linear Activity, please see below	Linear Activity, please see below

Description	**Approximate Footprint**

Alternative 1 Powerline	±1100m
Alternative 1 Substation	±9600m^2 (Total fenced off area)

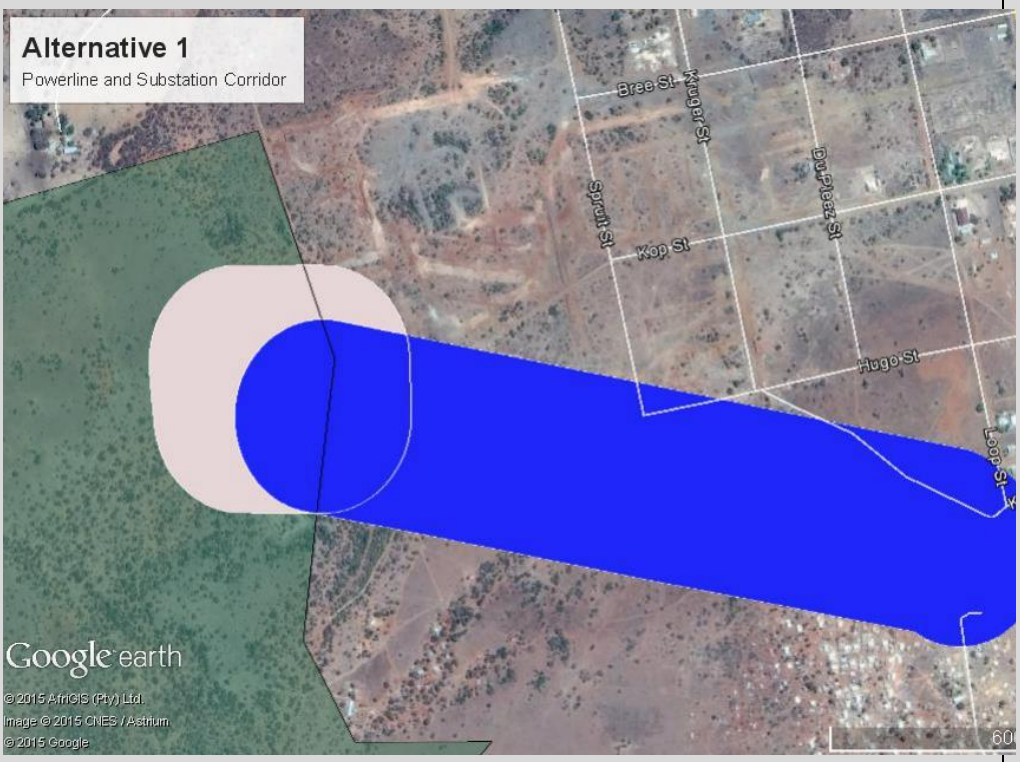

Figure 23: Alternative 1 substation and powerline corridor.

Alternative 1 has been eliminated from this environmental process.

Alternative 2

Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 2 The Alternative 2 substation is situated in the South Eastern Corner of the approved PV site. The powerline will either loop in and loop out (LILO) of the existing Eskom 132 kV powerline or a new line will be constructed parallel to the existing powerlines as shown in the figure below (This new line will run adjacent to the existing 88kV back to the Zeerust Substation. The table below depicts the total estimated footprint of this alternative	Linear Activity, please see below	Linear Activity, please see below

Table 2: Approximate footprint of the Alternative 2 Grid Connection.

Description	Approximate Footprint
Alternative 2 Substation	±9600m^2 (Total fenced off area)
Alternative 2 Powerline – LILO option	±125m
Alternative 2 Powerline – Self Build option	±1650m

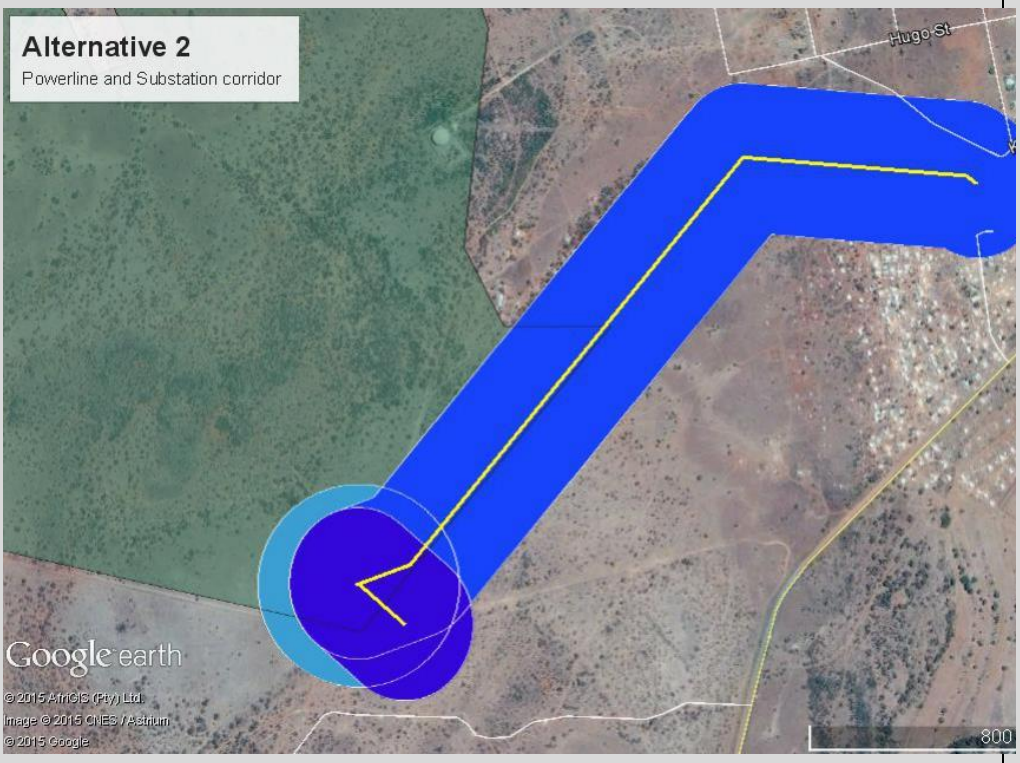

Figure 3: Alternative 2 substation and powerline corridor.

Alternative 2 has been eliminated from this environmental process.

Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3 – Preferred.		

The Alternative 3 substation position is proposed adjacent (outside) of the PV footprint along the south eastern boundary. The powerline will either loop in and loop out (LILO) of the existing Eskom 132 kV powerline or a new line (same corridor as alternative 2) will be constructed parallel to the existing powerlines as shown in the figure below (This new line will run adjacent to the existing 132kv line back to the Zeerust substation.

As far as the specialist assessments go, this has been assessed as alternative 3 along with the alignment of alternative 2 (which is identical in alignment)

The table below depicts the total estimated footprint of this alternative

Table 3: Approximate footprint of the Alternative 3 Grid Connection.

Description	Approximate Footprint
Alternative 3 Substation	±9600m^2 (Total fenced off area)
Alternative 3 Powerline – LILO option (eliminated)	±430m
Alternative 3 Powerline – Self Build option (preferred)	±1350m

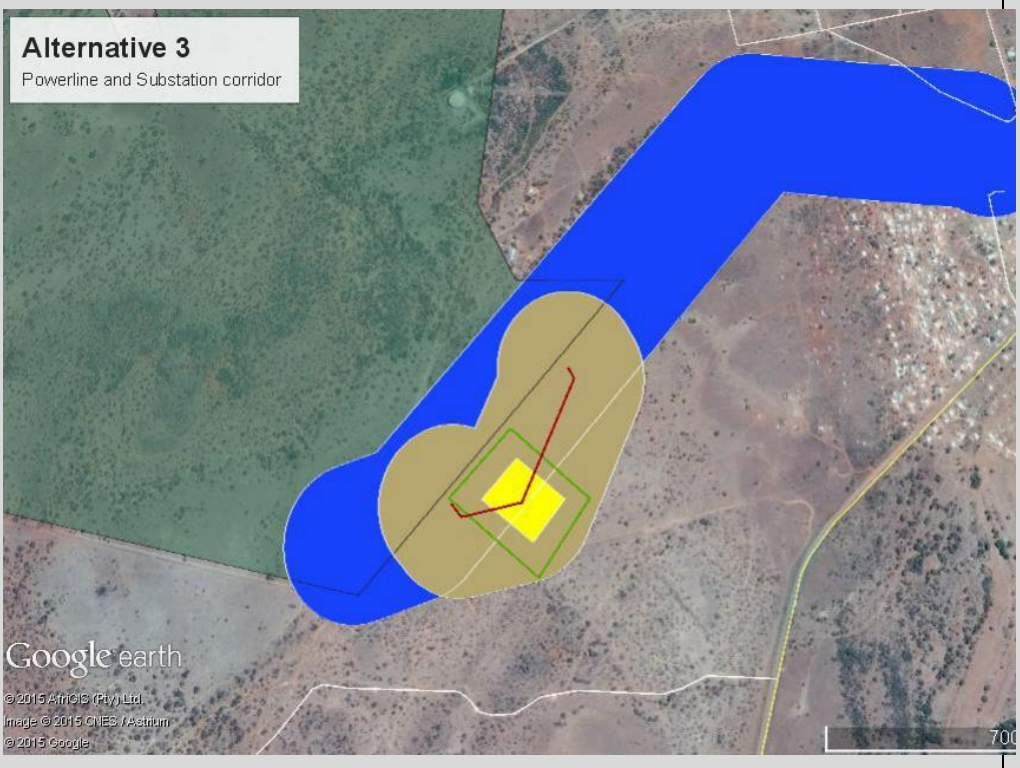

Figure 4: Alternative 3 substation and powerline corridor.

Note that the LILO option has been eliminated from this environmental process and only the self build option as depicted below is under consideration.

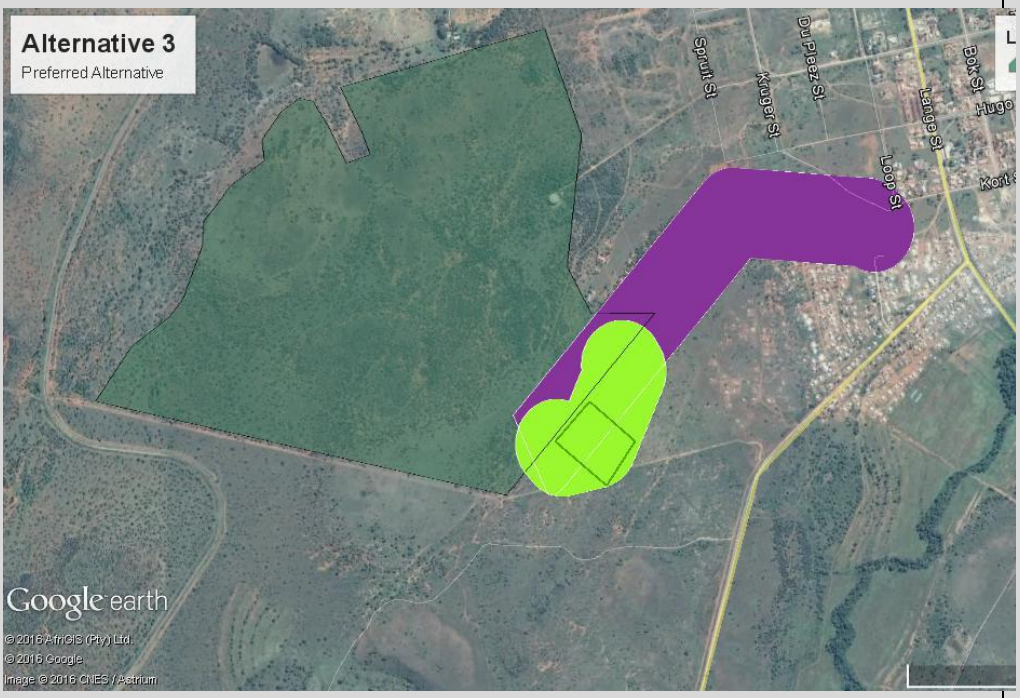

Figure 5 – Alternative 3 Preferred alternative – self build option.

Alternative 4

Alternative 4

Alternative 4 is a variation of Alternative 1 and was proposed to mitigate a concern raised by the ecology specialist that the substation 1 position should be shifted out of the thicket vegetation surrounding the Koppie as far as possible. In order to achieve this, substation alternative 4 is proposed to be constructed within the North Western corner of the approved development footprint. The powerline corridor runs from this position directly to the Zeerust substation as shown in the figure below (Depending where the line enters the Zeerust substation, it may be required to cross the existing Eskom Lines).

The table below depicts the total estimated footprint of this alternative

Table 4: Approximate footprint of the Alternative 4 Grid Connection.

Description	Approximate Footprint

Linear Activity, please see below

Linear Activity, please see below

Alternative 3 Substation	±9600m^2 (Total fenced off area)
Alternative 3 Powerline	±1300m

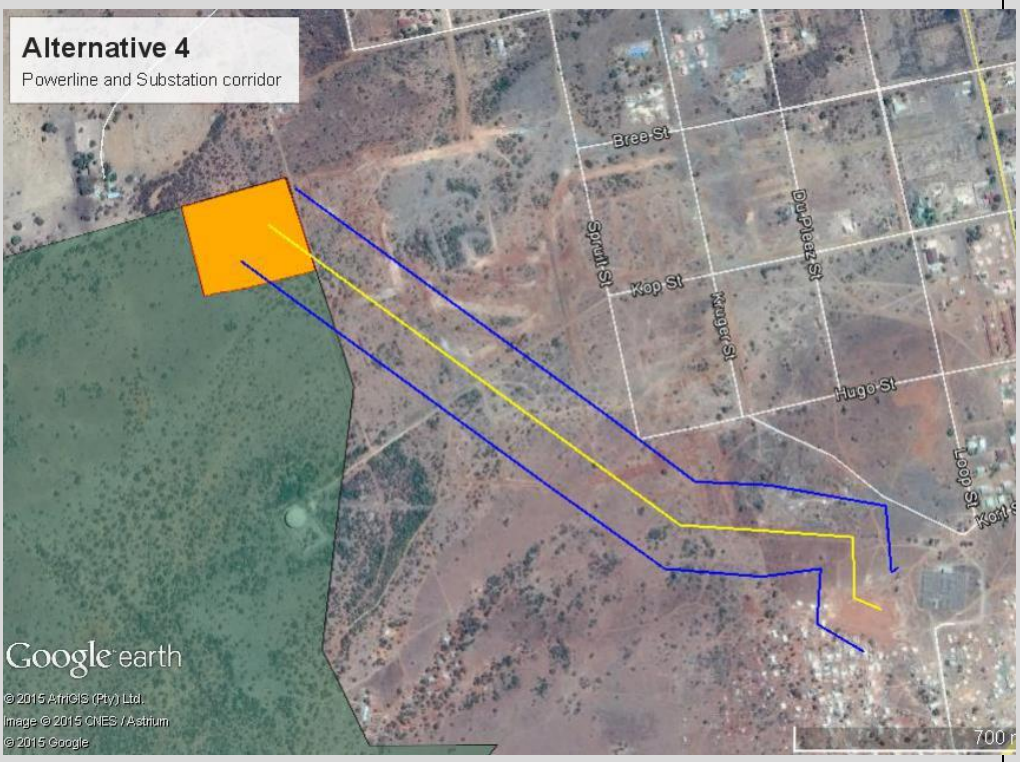

Figure 5: Alternative 4 substation and powerline corridor.

Alternative 4 has been eliminated from this environmental process.

c) Technology alternatives

Alternative 1 (preferred alternative)
Conductor: To be determined – Different conductors will not result in different environmental impacts.
Towers : Self-supporting monopoles and guyed monopoles or Lattice Structures
Foundations: Standard pad and plinth foundations for the self-supporting towers. Dead-man anchor/stay plate anchor foundations for stays and a central plinth for tower mast will be used for the guyed monopoles.
And an additional substation of approximately 9600m2 consisting of both Eskom and IPP components.

Alternative 2
No additional technology alternatives are under investigation as part of this environmental process.
Alternative 3

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

~~**Alternative 1 (preferred alternative)**~~
~~**Alternative 2**~~
~~**Alternative 3**~~

e) No-go alternative

The No Go alternative would mean that the powerline to connect the authorised RE Capital 2 project to the National Grid not be constructed. The social and environmental benefits of the RE Capital 2 solar development as a whole would not be achieved if the no-go alternative were to be implemented. The no go alternative will however be a base against which impacts are assessed.

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[3] (preferred activity alternative)~~	~~m²~~
~~Alternative A2 (if any)~~	~~m²~~
~~Alternative A3 (if any)~~	~~m²~~

or, for linear activities:

Alternative:	**Length of the activity:**
Alternative A1 (Eliminated)	±1200m
Alternative A2 (Eliminated)	±1300m
Alternative A3 (Preferred)	±1350m
Alternative A4 (Eliminated)	±1200m

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)~~	~~m²~~
~~Alternative A2 (if any)~~	~~m²~~
~~Alternative A3 (if any)~~	~~m²~~

4 SITE ACCESS

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

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

Describe the type of access road planned:

No additional access roads will need to be constructed for the purpose of this grid connection. There are existing access routes to both the solar facility as well as the substation and these existing routes will be used to access the powerline for construction. Furthermore, the internal roads authorised as part of the main solar facility can be used to access the substation.

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

5 LOCALITY MAP

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

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

Please refer to Appendix A1 for Layout and Topographical Maps

6 LAYOUT/ROUTE PLAN

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

The site or route plans must indicate the following:

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

A locality map complying to the above criteria is attached in Appendix A1.

Route Plans of the Preferred Alternative (Alternative 3) are Included in Appendix C

7 SENSITIVITY MAP

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

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

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

Please refer to Appendix A2 for a series of Biodiversity overlays.

The Ecology Specialist also developed the following site specific sensitivity plan as can be seen below. Please refer to the Ecological Impact Assessment Report in Appendix D1. As can be seen, the preferred alternative (Alternative 3) is contained entirely within the medium – low sensitivity area.

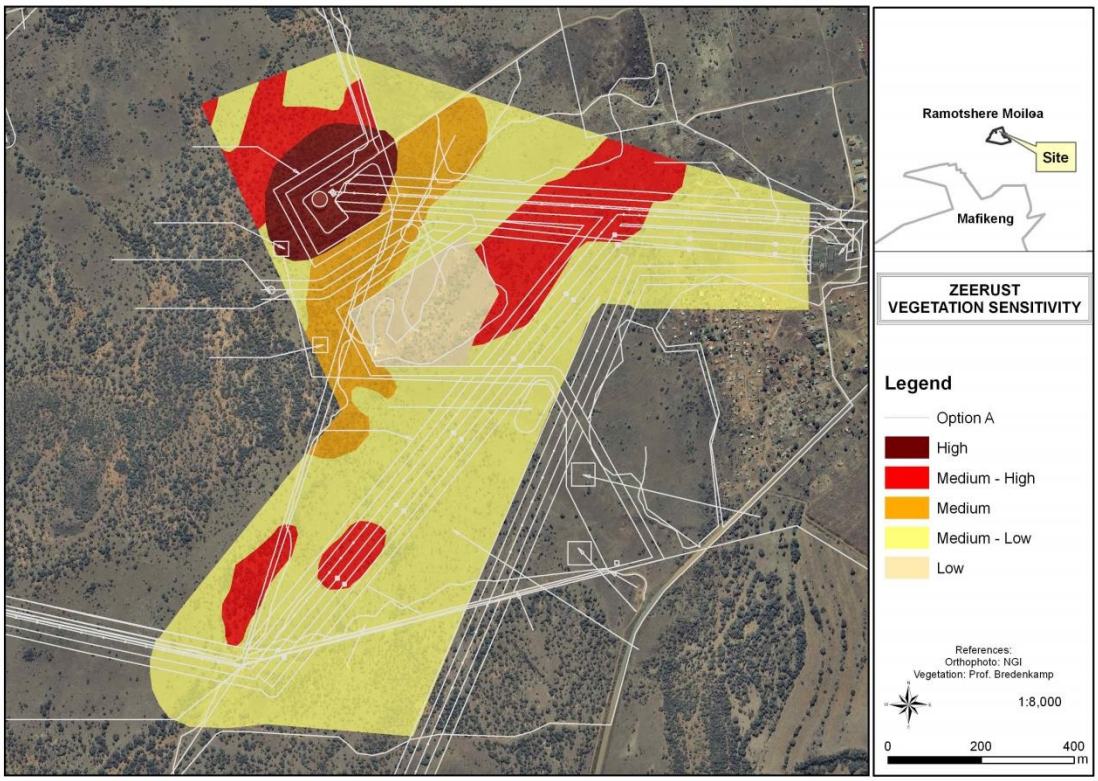

Figure 24: Sensitivity Map of the Study Site (EcoAgent, 2015)

8 SITE PHOTOGRAPHS

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

Site photographs as taken by the EAP and participating specialists are included in Appendix B.

9 FACILITY ILLUSTRATION

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

Please refer to Appendix C for illustrations and descriptions of the various alternatives under investigation. Also refer to the Technical Presentation in Appendix D4.

10 ACTIVITY MOTIVATION

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

1. Is the activity permitted in terms of the property's existing land use rights?	✓**YES**	~~NO~~	Please explain
The Applicant have engaged with landowners of the farms to be traversed by the preferred powerline alignment, as well as the alternative route considered. The applicant is engaging directly with landowners regarding the option agreements and servitudes.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	✓**YES**	~~NO~~	Please explain
In terms of Electricity infrastructure related to forms of renewable energy, the spatial distribution of supply should aim be follow clearly defined corridors, with electricity services being highly concentrated close to the major routes and high capacity electricity infrastructure (PSDF, 2011). This project aims to link to existing and approved electrical infrastructure associated with renewable energy project (Solar PV Development) and the Eskom national grid network (via the Zeerust substation). This grid connection is associated with a renewable energy projects that is a preferred bidders in term of the Department of Energy REIPPP. One of the sustainable development objectives of the PSDF is to utilize renewable resources as opposed to non-renewable resources. This grid connection is associated with the generation of electricity from a renewable resource. It also promotes the concept of Bioregionalism as enshrined in the PSDF.			
(b) Urban edge / Edge of Built environment for the area	✓**YES**	~~NO~~	Please explain
The nature of Power lines dictates that they need not be situated within an urban edge or within the edge of built up areas.			
(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 IDP defines public infrastructure development such as energy generation as a critical action within the municipal area			
(d) Approved Structure Plan of the Municipality	✓**YES**	~~NO~~	Please explain
To the best of our knowledge, there is no specific structure plan adopted for the Gamagara local municipality. The project is however compliant with other relevant planning policies.			

(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	✓**YES**	~~NO~~	Please explain
There are no specific Environmental Management Frameworks for the Gamagara Municipal area.			
(f) Any other Plans (e.g. Guide Plan)	✓**YES**	~~NO~~	Please explain
To the best of our knowledge, there is no specific guide plan adopted for the Gamagara local municipality. The project is however compliant with other relevant planning policies.			
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**	~~NO~~	Please explain
The spatial development framework defines the renewable energy sector as a focus area for this municipal district.			
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**	NO	Please explain
This grid connection is related to a renewable energy project that has been selected as a preferred bidder under the Department of Energy's Renewable Energy Independent Power Producers procurement programme. Given the context of PV farm developments in the local context, this proposed powerline can be considered to be in-line / associated with the local investment already placed in this emerging renewable energy landscape. Care has been taken to avoid impacting on the agricultural land-use in the area, as well as the scenic / cultural landscape, by aligning the preferred powerline route along existing lines and breaks i.e. existing tracks, fences and fire-breaks etc. On a strategic level, the proposed powerline aligns with the regional, national and international need for the distribution of 'green electricity' from renewable energy.			
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**	~~NO~~	Please explain
This activity is considered in support of a primary service, i.e. the provision of electricity. No additional services are required to support the activity.			
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**	✓**NO**	Please explain
Not Applicable. The activity in itself is an infrastructure development			

7. Is this project part of a national programme to address an issue of national concern or importance?	✓**YES**	~~NO~~	Please explain

The generation of 'green / clean electricity' from a renewable energy resource (Solar) forms part of a national programme to reduce reliance of coal-powered generation of electricity. The proposed powerline will serve to transmit / distribute the electricity to be generated by three renewable energy development into the national Eskom grid.

Securing renewable energy sources into the overall energy matrix has been highlighted as a priority by the Department of Energy. The Renewable Energy Independent Power Producers Procurement Programme was established as a result of this.

It has also been confirmed that this project is considered to be a Strategic Infrastructure Project. Please refer to Appendix J3 for confirmation of the SIP Status of this project.

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

This powerline a renewable energy preferred bidders to the National Grid. This projects will be generating 75MW of electricity for inclusion into the National Grid.

The proposed powerline will align as far as possible along landscape divides (i.e. existing fence lines, powerlines and fire breaks) so as to avoid impacting of the agricultural landuse and ecological sensitive areas. In addition, the pylons/towers will not be located on prominent landscape or sensitive features, and would become a smaller component of the greater Solar Energy Facility landscape emerging in the area.

9. Is the development the best practicable environmental option for this land/site?	✓**YES**	~~NO~~	Please explain

The approved PV facility needs to connect to the National Grid. Connection via the Zeerust substation is deemed to be the option of least impact.

10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	✓**YES**	~~NO~~	Please explain

The potential negative impacts associated with the preferred powerline corridor alignment were found to be medium to low (with mitigation), and thus acceptable, given the context. Aside from the employments benefits associated with the construction and operation / maintenance of the powerline, the benefit of allowing the input of 'clean electricity' into the national grid is considerable.

11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	✓**YES**	~~NO~~	Please explain

An Existing PV facility has been approved for development in this area, which will all require connection to the national grid, via overhead powerlines. The capacity of the existing substation and the availability of land, and not this power line will set the precedent as to whether there will be further such developments in the area..

Considering the manner in which the powerline has been designed to avoid impacting on the landuse and sensitive features (environmental and heritage/cultural) in the landscape, as well as combining projects to reduce cumulative impact, it can be argued that it will set a positive precedent for any future powerlines in the area.

12. Will any person's rights be negatively affected by the proposed activity/ies?	YES	✓**NO**	Please explain
As mentioned above, the preferred powerline alternative has been aligned / designed to have the least possible impact on existing landuse as it has been aligned along boundaries and existing tracks as far as possible. Furthermore, a detailed public participation process took place as part of the EIA (for the facilitiy). No major concerns nor objections were raised in this environmental process. An additional public participation process has taken part as part of this application.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	~~YES~~	✓**NO**	Please explain
Although falling outside of the developed areas of Zeerist, as a linear activity, the proposed powerline will not compromise the urban edges of the Ramotshere Moiloa Municipality.			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	✓**YES**	~~NO~~	Please explain
SIP 8: Support sustainable green energy initiatives on a national scale through a diverse range of clean energy options as envisaged in the IPR2010 The distribution of electricity generated from renewable resource (solar) by the preferred bidders that will connect to the national grid via this powerline. **SIP 9:** Electricity Generation to support socio-economic development The distribution of electricity generated from renewable resource (Solar) by the by the preferred bidders that will connect to the national grid via this powerline. **SIP 10**: Electricity Transmission and Distribution for all. As the proposed powerline is associated with renewable energy projects (preferred bidders) under the Independent Power Producer (IPP) Procurement Programme, it can be considered as a Strategically Important Development ("SID"), due to their potentially significant contribution to the regional and national economy. **The coordinator for SIP10 has confirmed that this project does indeed fall within the ambit of SIP10. A Copy of this confirmation is included in this BAR in Appendix J3**			
15. What will the benefits be to society in general and to the local communities?			Please explain
Addition of much needed electricity into the national grid. This powerline will distribute 75mw of "clean-electricity" generated by the Solar Development from a renewable resource (solar) into the national electrical grid, which is currently under enormous pressure. The national grid currently relies heavily of coal for electricity generation, has associated pollution and climate-change repercussions, thus this project indirectly contributes to minimising these impacts through its associated with renewable energy generation.			

16. Any other need and desirability considerations related to the proposed activity?	Please explain
The studies undertaken as part of this environmental process, as well as those associated with the solar facility, contribute to a greater understanding of the landscape and context and the sensitive elements within it (e.g. remnant natural vegetation and watercourses, cultural heritage areas, archaeological and palaeontological resources, avifaunal species and populations etc.), as well as the protection and rehabilitation of these elements (e.g. implementation of buffers, removal and monitoring of alien vegetation etc.).	
17. How does the project fit into the National Development Plan for 2030?	Please explain
Contribution to the provision of electricity to the nation, and investment in electrical infrastructure for its distribution (as part of the strategy to remedy the electricity crisis of 2008 and that associated with the future demands). This powerline aligns with the one of the prioritised infrastructure investments listed in the NDP: "Procuring at least 20 000MW of renewable electricity by 2030, importing electricity from the region, decommissioning 11 000MW of ageing coal-fired power stations and stepping up investments in energy-efficiency", as well as one the key proposals to "Implement the 2010 Integrated Resource Plan (procuring at least 20 000MW of electricity from renewables) to reduce carbon emissions from the electricity industry from 0.9kg per kilowatt-hour to 0.6kg per kilowatt-hour.	
18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.	
The investigation, assessment and communication of potential impacts of this proposal on the receiving environment have considered alternatives (the no-go) and cumulative impacts, and recommended mitigation and monitoring measures to ensure that potential negative impacts are kept to a minimum and potential positive impacts are enhanced. Among these is the recommendation for on-going monitoring of the access tracks to avoid erosion and removal alien plants.	

19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.
It is argued that the proposed development of this grid solution will be socially, environmentally and economically sustainable, due to the following: Further disturbance to the local ecosystems / loss of biodiversity is likely to be negligible as the powerline, and associated access tracks and switching stations, will be positioned along / on existing transformed / disturbed areas in the landscape i.e. the powerline and access tracks will align as far as possible along cadastral lines, existing farm tracks, fence lines and fire breaks, while the switching stations will be placed on disturbed areas associated with the Substations of Solar developments in the area. Mitigation and monitoring measures have been recommended to minimise and avoid potential degradation of the environment, as well as rehabilitate the current disturbed context where possible.

11 APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
National Environmental Management Act.	Basic Assessment	Department of Environmental Affairs	Act 107 of 1998 as amended
National Environmental Management: Biodiversity Act.	Endangered / Vulnerable vegetation types and Protected Species (TOPS)	DENC	Act 10 of 2004
National Spatial Biodiversity Assessment	Critical Biodiversity Areas & Ecological Support Areas across alignment	DENC	2011
Conservation of Agricultural Resources Act	Agricultural land traversed by powerline. Alien vegetation in and surrounding site	Department of Agriculture, Forestry & Fisheries	Act 43 of 1983
National Veld and Forest Fire Act	Alien infested Thicket and Fynbos in relation to fire risk.	Department of Agriculture, Forestry & Fisheries	Act 101 of 1998
Nature & Environment Conservation Ordinance	Lists Endangered & Protected animals & plants (species) in Schedules 1-4.	DENC	Ordinance 19 of 1974
National Heritage	Activity on site greater than	SAHRA	Act 25 of

Resources Act	5000m² in extent.		1999

12 WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?	✓YES	~~NO~~
If YES, what estimated quantity will be produced per month?	50m³	

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

Construction waste will be stored in a skip on site and periodically removed to a licenced landfill by a service provider. Confirmation of the capacity of the municipality to handle this construction waste was obtained as part of the three previous environmental processes.

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

Construction waste will be stored in a skip on site and periodically removed to a licenced landfill by a service provider. Confirmation of the capacity of the municipality to handle this construction waste was obtained as part of the environmental processe. The Gamagara municipality has confirmed this to be in order as long as no Medical Waste or industrial effluent is dumped.

Will the activity produce solid waste during its operational phase?	~~YES~~	**✓NO**
If YES, what estimated quantity will be produced per month?	**0m³**	

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

No Solid Waste will be generated during the operational phase of this proposal.

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

No Solid Waste will be generated during the operational phase of this proposal.

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

No Solid Waste will be generated during the operational phase of this proposal.

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

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?	~~YES~~	✓**NO**

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

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

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

b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?	~~YES~~	✓**NO**
If YES, what estimated quantity will be produced per month?	**0m^3**	
Will the activity produce any effluent that will be treated and/or disposed of on site?	~~YES~~	✓**NO**

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

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

If YES, provide the particulars of the facility:

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

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

Wastewater will not be generated during the construction nor operation phases of this activity.

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other that exhaust emissions and dust associated with construction phase activities?	~~YES~~	**✓NO**
If YES, is it controlled by any legislation of any sphere of government?	~~YES~~	**✓NO**

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

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

Atmospheric Emissions will not be generated during the construction nor operation phases of this activity.

d) Waste permit

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

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

e) Generation of noise

Will the activity generate noise?	~~YES~~	**✓NO**
If YES, is it controlled by any legislation of any sphere of government?	~~YES~~	**✓NO**

Describe the noise in terms of type and level:

The activity will not generate any noise during the operational phases. Limited noise associated with construction vehicles is expected during the construction phase. This will be of a low – very low significance.

13 WATER USE

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

~~Municipal~~	~~Water board~~	~~Groundwater~~	~~River, stream, dam or lake~~	~~Other~~	**✓The activity will not use water**

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:	**0litres**
Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?	~~YES~~ **✓NO**

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

It is unlikely that a Water Use Licence is required for this powerline, as all infrastructure is to be situated outside of the watercourses (A general authorisation, may however be relevant in this regard). Notwithstanding, a consultant has been appointed to compile the Water Use Licence Application (WULA) for the PV Facilities and Powerline and this will include engagement with the Department of Water and Sanitation (DWS) regarding this powerline. Furthermore, a Freshwater Ecological Assessment was undertaken for the PV facilities as well as the Powerline. The DWS has also been given an opportunity to comment on this Basic Assessment Process, although no comment was received from them as part of this process.

14 ENERGY EFFICIENCY

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

The activity is for the transmission of electricity generated from a renewable resource (PV) and this will be done to Eskom Standards.

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

None – this activity is for the transmission of electricity generated from a renewable resource (PV).

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.

It is not deemed necessary to complete this section for different sections of the powerline, as the powerline is only approximately 1km long and the landscape character and vegetation component remain consistent.

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

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

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

✓YES	~~NO~~

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

Property description/physical address:

Province	North West Province
District Municipality	Ngaka Modiri Molema District Municipality
Local Municipality	Ramotshere Moiloa Local Municipality
Ward Number(s)	2
Farm name and number	Portion 15 of the Farm Kameeldoorn 271 and the Farm Kruisrivier 270
Portion number	Portion 15 of the Farm Kameeldoorn 271 and the Farm Kruisrivier 270

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:	Buisiness Zone and Agriculture 1 Power distribution lines are consistent with this use. The applicant is however in the process of registering a long term lease over portions of the properties for the purpose of operating the PV facilities.

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

Is a change of land-use or a consent use application required?	~~YES~~	✓**NO**

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~~		~~2.4 Closed valley~~		~~2.7 Undulating plain / low hills~~			
~~2.2 Plateau~~		~~2.5 Open valley~~		~~2.8 Dune~~			
2.3 Side slope of hill/mountain	✓	2.6 Plain		~~2.9 Seafront~~			
~~2.10 At sea~~							

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?

The closest surface water bodies are situated approximately 400m to the north of the closest alternative.

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.

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? Specify and explain:

The proposed powerline does not cross, nor will it affect the railway line in any way.

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:

None

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:

None

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.

GIS derived, coarse scale Critical Terrestrial Biodiversity areas map (SANBI) considered the area of the Moot Plains Bushveld as a CBA1. Considering the above, and from the results of this study, it is clear that the CBA1 status should only be applied to the eastern part (Pretoria-Hartebeespoort Dam-Rustenburg area) of the Moot Plains Bushveld, where biodiversity is indeed threatened. This could surely not be applied to the western parts from Rustenburg to Zeerust. According to the SANBI Plants of South Africa database only a single red data plant species, Cineraria alchemilloides DC. subsp. Alchemilloides, was ever collected within the 2526CA grid. The current survey could not confirm the presence of this species on the site. There are no TOPS plant species present on the site.

7 CULTURAL/HISTORICAL FEATURES

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

Please refer to the Heritage Impact Assessment in Appendix D3.

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 the Heritage Impact Assessment in Appendix D3.

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

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

8 SOCIO-ECONOMIC CHARACTER

a) Local Municipality

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

Level of unemployment:

According to the IDP, The current official unemployment rate is 10.0 % (In comparison to 16.1 % in 2011)

Economic profile of local municipality:

It is important to note that new opportunities have opened up for municipal area since the need to facilitate the generation of sustainable energy was introduced in South Africa by Eskom and the South African government. Economic spin-offs are eagerly anticipated.

Level of education:

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	**~R150m**	
What is the expected yearly income that will be generated by or as a result of the activity?	**R0**	
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?	**~130**	
What is the expected value of the employment opportunities during the development and construction phase?	**~R10m**	
What percentage of this will accrue to previously disadvantaged individuals?	**~60%**	
How many permanent new employment opportunities will be created during the operational phase of the activity?	**0**	
What is the expected current value of the employment opportunities during the first 10 years?	**R0**	
What percentage of this will accrue to previously disadvantaged individuals?	**0%**	

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)~~	GIS derived, coarse scale Critical Terrestrial Biodiversity areas map (SANBI) considered the area of the Moot Plains Bushveld as a CBA1. Considering the above, and from the results of this study, it is clear that the CBA1 status should only be applied to the eastern part (Pretoria-Hartebeespoort Dam-Rustenburg area) of the Moot Plains Bushveld, where biodiversity is indeed threatened. This could surely not be applied to the western parts from Rustenburg to Zeerust. According to the SANBI Plants of South Africa database only a single red data plant species, Cineraria alchemilloides DC. subsp. Alchemilloides, was ever collected within the 2526CA grid. The current survey could not confirm the presence of this species on the site. There are no TOPS plant species present on the site.

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	%	5
Near Natural (includes areas with low to moderate level of alien invasive plants)	%	40
Degraded (includes areas heavily invaded by alien plants)	%	40
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	%	15

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			

Terrestrial Ecosystems		Aquatic Ecosystems						
	~~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 vegetation, flora and vertebrate fauna study of the site proposed for the development of three alternative substations and three alternative power lines on Portion 15 of the Farm Kameeldoorn 271 JP and on the Farm Kruisrivier 270 JP, Zeerust, Ramotshere Moiloa Local Municipality, Ngaka Modiri Molema District Municipality North-West Province, revealed the presence of four plant communities as representative ecosystems. The study showed that the entire site should be classified under the Moot Plains Bushveld (Mucina & Rutherford 2006). According to Mucina & Rutherford (2006) the conservation status of the Moot Plains Bushveld is Vulnerable, although about 13% is statutorily protected. The reason for this conservation status is that almost 30% of Moot Plains Bushveld has been transformed, but this is mainly in the Pretoria-Hartebeespoort Dam-Rustenburg area, with considerable pressure for more development. The western part of Moot Plains Bushveld is, in contrast, quite natural, with very little transformed by development, and here it could be regarded as Least Threatened.

It seems that the GIS derived, coarse scale Critical Terrestrial Biodiversity areas map (SANBI) considered the area of the Moot Plains Bushveld as a CBA1. Considering the above, and from the results of this study, it is clear that the CBA1 status should only be applied to the eastern part (Pretoria-Hartebeespoort Dam-Rustenburg area) of the Moot Plains Bushveld, where biodiversity is indeed threatened. This could surely not be applied to the western parts from Rustenburg to Zeerust. According to the SANBI Plants of South Africa database only a single red data plant species, *Cineraria alchemilloides* DC. subsp. *Alchemilloides,* was ever collected within the 2526CA grid. The current survey could not confirm the presence of this species on the site. There are no TOPS plant species present on the site.

SECTION C: PUBLIC PARTICIPATION

1 ADVERTISEMENT AND NOTICE

Publication name	Zeerust News	
Date published	26 February 2016 (Zeerust News is the only newspaper in the area and only comes out on a monthly basis)	
Site notice position	**Latitude**	**Longitude**
	25° 34' 22.04"	26° 05' 07.77"
Date placed	August 2015	

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

2 DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN 733.

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 733

Title, Name and Surname	**Affiliation/ key stakeholder status**	**Contact details (tel number or e-mail address)**
Birdlife Africa	See attached I&AP Register in Appendix E5	See attached I&AP Register in Appendix E5
Ikageng Community Trust	See attached I&AP Register in Appendix E5	See attached I&AP Register in Appendix E5
Ramotshere Moiloa Municipality	See attached I&AP Register in Appendix E5	See attached I&AP Register in Appendix E5
Department Of Agriculture, Forestry and Fisheries	See attached I&AP Register in Appendix E5	See attached I&AP Register in Appendix E5
Department of Water And Sanitation	See attached I&AP Register in Appendix E5	See attached I&AP Register in Appendix E5
Square Kilometre Array	See attached I&AP Register in Appendix E5	See attached I&AP Register in Appendix E5
Department of Economic Development, Environment, Conservation and Tourism	See attached I&AP Register in Appendix E5	See attached I&AP Register in Appendix E5
Eskom	See attached I&AP Register in Appendix E5	See attached I&AP Register in Appendix E5
Sentech	See attached I&AP Register in Appendix E5	See attached I&AP Register in Appendix E5
Department of Communications	See attached I&AP Register in Appendix E5	See attached I&AP Register in Appendix E5
Roads and Public Works	See attached I&AP Register in Appendix E5	See attached I&AP Register in Appendix E5
Department of Energy	See attached I&AP Register in Appendix E5	See attached I&AP Register in Appendix E5
Department of Rural Development and Land Reform	See attached I&AP Register in Appendix E5	See attached I&AP Register in Appendix E5

SAHRA	See attached I&AP Register in Appendix E5	See attached I&AP Register in Appendix E5

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

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

3 ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Please refer to the Issues and Response report attached in Appendix E3.

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.

Comments and response report is attached in Appendix E3.

5 AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Company	FirstName	Surname	PostalAddress1	PostalAddress2	PostalSuburb	PostalCode	City	Fax	eMail
Department of Agriculture, Forestry & Fisheries	Mashudu	Marubini	Private Bag X120			0001	Pretoria	(012) 329 - 5938	mashuduma@daff.gov.za
Department of Agriculture, Forestry & Fisheries	N	Motete	Private Bag X120			0001	Pretoria		nthabisengmo@daff.gov.za
Department of Agriculture, Forestry & Fisheries	Thoko	Buthelezi	Private Bag X120			0001	Pretoria	012 349 5938	thokob@daff.gov.za
Department of Communications	Ayanda	Mbolekwa	Private Bag X860	Pretoria		0001	Pretoria		Ayandam@doc.gov.za
Department of Environmental Affairs	Tumelo	Ratlou	Private Bag X447			0001	Pretoria		tratlou@environment.gov.za
Department of Minerals and Energy	Noma	Qase	Private Bag X 19		Arcadia	0007	Arcadia		nomawethu.qase@energy.gov.za
Endangered Wildlife Trust (EWT)	Bridget	Corrigan	Pvt Bag X11		Modderfontein	1645	Johannesburg	086 715 6140	bridgetc@ewt.org.za
South African Civil	Lizelle	Stroh	Private Bag X73		Halfway House	1685	Johannesburg	011 545	strohl@caa.co.za

Aviation Authority								1282	
ESKOM	John	Geering h	P.O. Box 1091			2000	Johannesburg	0866614064	geerinjh@eskom.co.za
ESKOM	Kevin	Leask	P.O. Box 1091			2000	Johannesburg		leaskk@eskom.co.za
Birdlife Africa	Samantha	Ralston	Private Bag X5000	Parklands	Parklands	2121	Johannesburg	+27 (0)11 789	energy@birdlife.org.za
WESSA	John	Wesson	PO Box 435			2160	Ferndale	0114625663	
Department Economic Development and Environmental Affairs (E-Cape)	Ouma	Skosana	Cnr of Provident & University Drive			2375	Mmbatho	0113895430	Oskosana@nwpg.gov.za
	Maureen	Scholts	PO Box 596			2735	Mmbatho		mscholtz@mafonline.co.za
Department of Agriculture & Rural Development (Gauteng)	Poncha	Mokaila	PO Box X2039			2735	Mmbatho	0183924377	
Department of Water & Sanitation	Wendy	Ralekoa	Private Bax X5			2735	Mmbatho	0183842095	ralekoaw@dwa.gov.za
North West Department of Public Works, Road and Transport	J	van Wyk	Private Bag X2080			2735	Mmbatho	0183884547	vanwykj@nwpg.gov.za
	Johan	Theron	PO Box 479			2865	Zeerust		
	Johannes	Kelder	PO Box 325			2865	Zeerust		
	Willem	Erasmus	PO Box 596			2865	Zeerust		werasmus@saol.com
Ramotshere Moiloa	Crosby	Maema	PO Box 92			2865	Zeerust	0186423586	crosby.maema@ramotshere.gov.za
Ramotshere Moiloa	Paddy	Mokotong	PO Box 555			2865	Zeerust	0183810561	municipalmanager@nmmdm.gov.za
SANRAL	Rene	De Kock	Private Bag X19			7535	Bellville	(021) 946-1630	dekockr@nra.co.za
ESKOM	Barbara	van Geems	P.O. Box 222			7561	Brackenfell		vgeemsb@eskom.co.za
ESKOM Distribution - Western Operating Unit	Justine	Wyngaardt	P.O. Box 222			7561	Brackenfell	(021) 9803053	wyngaajo@eskom.co.za
SAHRA	Phillip	Hine	P.O. Box 4637			8000	Cape Town		phine@sahra.org.za
Department of Agriculture	Cynthia	Fortune	P/B X5018			8301	Kimberley	0538313635	fortunec@ncpg.gov.za
Department of	Nico	Toerien	P.O. Box 52			8800	Upington	054 337	ntoerien1@gmail.com

Agriculture, Land Reform & Rural Development								8001	

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

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

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, 2014 and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

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

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

A complete impact assessment in terms of Regulation 19(3) of GN 733 must be included as Appendix F.

ECOLOGICAL IMPACTS

Table 18: Impact Table 1: Alternative 1 substation (Eliminated)

Impact on Vegetation	Extent	Duration	Intensity	Probability	Significance	Status	Confidence
Plant Communities 1	Site	Permanent	High	High	Medium	Negative	High
Plant Community 2	Site	Permanent	High	Low	Medium	Negative	High
Plant Community 3	Site	Permanent	Low	Low	Low	Negative	Medium
Plant Community 4	Site	Permanent	High	High	Low	Negative	High
Impact on plant species							
Indigenous species	Site	Permanent	High	High	Medium	Negative	High
Alien plant species	Site	Permanent	Low	High	High	Positive	High
Impact on fauna							
Mammals	Site	Permanent	Low	Low	Low	Neutral	High
Birds	Site	Permanent	Low	Low	Low	Neutral	High

Herpetofauna	Site	Permanent	Low	Low	Low	Neutral	High

Table 19: Impact Table 2: Alternative 2 substation (Eliminated)

Impact on Vegetation	**Extent**	**Duration**	**Intensity**	**Probability**	**Significance**	**Status**	**Confidence**
Plant Communities 2	Site	Permanent	High	High	Medium	Negative	High
Plant Community 4	Site	Permanent	High	High	Low	Negative	High
Impact on plant species							
Indigenous species	Site	Permanent	High	High	Medium	Negative	High
Alien plant species	Site	Permanent	Low	High	High	Positive	High
Impact on fauna							
Mammals	Site	Permanent	Low	Low	Low	Neutral	High
Birds	Site	Permanent	Low	Low	Low	Neutral	High
Herpetofauna	Site	Permanent	Low	Low	Low	Neutral	High

Table 20: Impact Table 3: Alternative 3 substation - Preferred

Impact on Vegetation	**Extent**	**Duration**	**Intensity**	**Probability**	**Significance**	**Status**	**Confidence**
Plant Community 4	Site	Permanent	High	High	Low	Negative	High
Impact on plant species							
Indigenous species	Site	Permanent	High	High	Medium	Negative	High
Alien plant species	Site	Permanent	Low	High	High	Positive	High
Impact on fauna							
Mammals	Site	Permanent	Low	Low	Low	Neutral	High
Birds	Site	Permanent	Low	Low	Low	Neutral	High

Herpetofauna	Site	Permanent	Low	Low	Low	Neutral	High

Table 21: Impact Table 4: Alternative 1 Power line - Eliminated

Impact on Vegetation	**Extent**	**Duration**	**Intensity**	**Probability**	**Significance**	**Status**	**Confidence**
Plant Community 1	Site	Permanent	Medium	Medium	Low	Negative	Medium
Plant Communities 2	Site	Permanent	High	High	Medium	Negative	High
Plant Community 4	Site	Permanent	High	High	Low	Negative	High
Impact on plant species							
Indigenous species	Site	Permanent	High	High	Medium	Negative	High
Alien plant species	Site	Permanent	Low	High	High	Positive	High
Impact on fauna							
Mammals	Site	Permanent	Low	Low	Low	Neutral	High
Birds	Site	Permanent	Low	Low	Low	Neutral	High
Herpetofauna	Site	Permanent	Low	Low	Low	Neutral	High

Table 22: Impact Table 5: Alternative 2 power line (same alignment as alternative 3 self build)

Impact on Vegetation	**Extent**	**Duration**	**Intensity**	**Probability**	**Significance**	**Status**	**Confidence**
Plant Communities 2	Site	Permanent	High	High	Low	Negative	High
Plant Community 4	Site	Permanent	High	High	Low	Negative	High
Impact on plant species							
Indigenous species	Site	Permanent	High	High	Medium	Negative	High
Alien plant species	Site	Permanent	Low	High	High	Positive	High
Impact on fauna							

Mammals	Site	Permanent	Low	Low	Low	Neutral	High
Birds	Site	Permanent	Low	Low	Low	Neutral	High
Herpetofauna	Site	Permanent	Low	Low	Low	Neutral	High

Table 23: Impact Table 6: Alternative 3 power line - Preferred

Impact on Vegetation	**Extent**	**Duration**	**Intensity**	**Probability**	**Significance**	**Status**	**Confidence**
Plant Community 4	Site	Permanent	High	High	Low	Negative	High
Impact on plant species							
Indigenous species	Site	Permanent	High	High	Medium	Negative	High
Alien plant species	Site	Permanent	Low	High	High	Positive	High
Impact on fauna							
Mammals	Site	Permanent	Low	Low	Low	Neutral	High
Birds	Site	Permanent	Low	Low	Low	Neutral	High
Herpetofauna	Site	Permanent	Low	Low	Low	Neutral	High

Table 24: Impacts expected to occur on and around the proposed substation and powerline development

Activity	**Nature of Impact**	**Severity*** **0 (low) – 10 (high)** **+ve or -ve**	**Likelihood**** **High/Medium/Low**
Substation construction	Construction activities	-10	High
Pole/ power line erection	Loss of habitat	-4	Low
Servitude maintenance	Loss of habitat	-3	Low
	Disturbance	-2	Low
	Exotic/alien plant increase	-5	Medium
Internal access roads	Habitat and species damage	- 10	High

Activity	Nature of Impact	Severity* 0 (low) – 10 (high) +ve or -ve	Likelihood** High/Medium/Low
and other site clearings	Substrate transformation	- 4	Medium
	Contamination risk	- 3	Low
Equipment construction camp and service area	Habitat and species damage	- 8	High
Water supply	Servitude disturbance	- 3	Medium
Storage and use of fuels and chemicals on site	Habitat and species damage	- 5	High
	Contamination risk local	- 3	Medium
	Contamination risk beyond site	- 1	Low
Electricity connection	Habitat and species damage	- 3	Low
Movement and presence of machinery and personnel	Contamination risk	- 3	High
	Vegetation change	- 3	Medium
	Plant harvesting and / or poaching	- 8	Medium
	Substrate transformation	- 8	Medium
Staff facilities on site	Habitat and species damage	- 5	High
	Increased fire risk	- 2	Low
	Contamination risk	- 3	Medium
Access/maintenance management	Habitat and species damage	- 3	Medium
Servitude management	Servitude disturbance	- 3	Low
Water management	Contamination risk	- 3	Low
Presence and / or use of hazardous materials	Contamination risk	- 3	Low

Activity	Nature of Impact	Severity* 0 (low) – 10 (high) +ve or -ve	Likelihood** High/Medium/Low
Top soil interference	Substrate transformation	- 5	Medium
Land use interference	Vegetation change	± 2	Low
Vegetation management	Vegetation change	± 5	Medium
Material removal/recycling	Habitat and species damage	- 5	Medium
	Contamination risk	- 5	Medium
Substrate repair	Substrate transformation	- 5	Medium
Vegetation restoration	Vegetation change	± 5	Medium
	Invasion by aliens	- 5	Medium
	Improvement of vegetated cover compared to original	+ 5	Low to Medium
Top soil interference	Substrate transformation	- 8	Medium
Facility conversion	Substrate transformation	- 5	Medium

The following mitigation measures are recommended form an ecological point of view.

- Minimize area cleared for construction and building activities, including the areas used by staff during construction. Wherever possible, any activities that can damage vegetation (e.g. tracks, unloading, storage, construction sites) should be located on the areas of lowest sensitivity and only within the footprint of the development.
- Keep the number of access routes to a minimum to decrease the land area that will be transformed, thus reducing impacts and remediation. Clearly demarcate activity-specific construction areas to control and limit movement of personnel, vehicles and materials to contain the extent of the impacts to the lowest level possible.
- Harvesting or removal – other than for rescue purposes- of any plant material is strictly prohibited. Staff shall only assist with the (necessary) removal of important plant species if requested to do so, under supervision.
- Prevent introduction of alien plant species. Be aware of the fact that seeds of invasive plants can be transported by vehicles as well as staff clothing, thus eradicate weedy and

invasive species around areas where staff congregate as well to prevent the spread of seeds. All declared aliens must be identified and managed in accordance with the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983), the implementation of a monitoring programme in this regard is suggested, being the responsibility of the ECO

- Revegetate exposed soils as soon as possible to stabilise the top soils, or apply a muh of rock fragments to reduce the exposure of top soils to events that may initiate excessive erosion. Rehabilitate plant cover as a continual process, to maximize viability of the natural seed bank and reduce loss of top soil during storage. Use only indigenous (to the area) plant material. Base rehabilitation of the site at closure on the original plant species composition of the plant community affected by the development.

Impact on Heritage Resources

The HIA for the grid connection for the proposed development of the Solar Plant near Zeerust in the Northwest Province was completed successfully. A 2012 study by the same author (See Report AE01244P – July 2012) on Kameeldoorn 271 identified a number of Late Iron Age stone walled sites and finds. As a result of this a number of other alternative sites for the development were earmarked and a 2013 study (by Pelser) had to focus on these 3 Alternatives, as well as the original study area (See Report APAC013/64 – October 2013).

The 2015 HIA had to focus on the Solar Plant alternative sites and substation sites, as well as the powerline servitudes for the grid connection to the existing ESKOM lines and substation. The 2015 assessment did identify some new sites (LIA Stone walled sites), while a number of the sites identified in 2013 are also located within the larger boundaries/footprint of the proposed Solar Plant Area and/or close by to the some of the planned development actions. Sites 12 & 13 (also LIA sites and found in 2013) are related to the two (Sites A & B) found in September 2015), while Sites 14 & 15 are recent historical sites identified in 2013 as well, with the possible Site 14 graves being the most significant of these two site.

<u>The following is recommended from a cultural heritage perspective:</u>

1. All the stone walled sites in the areas should be demarcated and fenced-in to avoid accidental damage and to ensure preservation. A Cultural Heritage Management Plan for these sites should be drafted and implemented. If the sites cannot be avoided then detailed mapping and archaeological excavations needs to be conducted prior to demolition being applied for

2. If Site 15 is indeed graves then the recommended action would the fencing-in and avoiding of the site at all costs.

Finally, from a cultural heritage point of view the development should be allowed to continue taking heed of the above. The subterranean presence of archaeological or historical sites, features or objects is always a possibility. This could include unknown and unmarked burial pits. Should any be uncovered during the development process and archaeologist should be called in to investigate and recommend on the best way forward.

Assessment of Visual Impacts

Table 25: Alternative 1 Power Line Corridor Impacts Table (1km) - Eliminated

Impact Activity	Phase	Mitigation	Nature	Extent	Duration	Severity	Probability	Significance without	Significance with
TX Alt 1	Cons.	W/Out	-ve	Local	Short	M	P	H	
		With	-ve	Local	Short	ML	P		M
	Ops.	W/Out	-ve	Local	Long	MH	P	H	
		With	-ve	Local	Long	M	P		M
	Close	W/Out	-ve	Local	Short	M	P	ML	
		With	-ve	Local	Short	MH	P		N
	Cuml.	W/Out	-ve	Local	Long	M	P	MH	
		With	+ve	Local	Long	L	P		L

Table 26: Alternative 2 Power Line Corridor Impacts Table (LILO) - Eliminated

Impact Activity	Phase	Mitigation	Nature	Extent	Duration	Severity	Probability	Significance without	Significance with
TX Alt 2 LILO	Cons.	W/Out	-ve	Local	Short	VL	P	VL	
		With	-ve	Local	Short	VL	P		VL
	Ops.	W/Out	-ve	Local	Long	VL	P	VL	
		With	-ve	Local	Long	VL	P		VL
	Close	W/Out	-ve	Local	Short	VL	P	VL	

		With	-ve	Local	Short	VL	P		N
	Cuml.	W/Out	-ve	Local	Long	VL	P	VL	
		With	+ve	Local	Long	VL	P		VL

Table 27: Alternative 2 Power Line Corridor Impacts Table (Direct 1.6km) – Same as Alternative 3 Self build

Impact Activity	Phase	Mitigation	Nature	Extent	Duration	Severity	Probability	Significance without	Significance with
TX Alt 2 Direct	Cons.	W/Out	-ve	Local	Short	L	P	L	
		With	-ve	Local	Short	L	P		L
	Ops.	W/Out	-ve	Local	Long	L	P	L	
		With	-ve	Local	Long	L	P		L
	Close	W/Out	-ve	Local	Short	L	P	L	
		With	-ve	Local	Short	L	P		N
	Cuml.	W/Out	-ve	Local	Long	L	P	L	
		With	+ve	Local	Long	L	P		L

Table 28: Alternative 3 Power Line Corridor Impacts Table (LILO)

Impact Activity	Phase	Mitigation	Nature	Extent	Duration	Severity	Probability	Significance without	Significance with
TX Alt 2 Direct	Cons.	W/Out	-ve	Local	Short	L	P	L	
		With	-ve	Local	Short	L	P		L
	Ops.	W/Out	-ve	Local	Long	L	P	L	
		With	-ve	Local	Long	L	P		L
	Close	W/Out	-ve	Local	Short	L	P	L	
		With	-ve	Local	Short	L	P		N
	Cuml.	W/Out	-ve	Local	Long	L	P	L	

		With	+ve	Local	Long	L	P		L

Table 29: Alternative 3 Direct Power Line Corridor Impacts - Preferred

Impact Activity	Phase	Mitigation	Nature	Extent	Duration	Severity	Probability	Significance without	Significance with
TX Alt 2 Direct	Cons.	W/Out	-ve	Local	Short	L	P	L	
		With	-ve	Local	Short	L	P		L
	Ops.	W/Out	-ve	Local	Long	L	P	L	
		With	-ve	Local	Long	L	P		L
	Close	W/Out	-ve	Local	Short	L	P	L	
		With	-ve	Local	Short	L	P		N
	Cuml.	W/Out	-ve	Local	Long	L	P	L	
		With	+ve	Local	Long	L	P		L

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.

Cape EAPrac is of the opinion that the information contained in the Draft Basic Assessment Report and the documentation attached was sufficient to allow the general public and key stakeholders to apply their minds to the potential negative and positive impacts associated with the development of the RE Capital 2 Grid Connection.

This Final Basic Assessment Report contains the details of the Public Participation process undertaken and includes all comments received during this process.

The proposed powerline alignment alternatives and substation positions were assessed in this environmental process as **corridors** (300m wide) to allow for minor adjustments / flexibility during the final design / micro-siting phase post environmental decision, and to avoid protracted administrative amendment processes as a result of these potential minor adjustments. The final preferred alternative (Alternative 3 – Self build) has no major

environmental constraints and potential impacts can be reduced to very low levels through management interventions.

Aside from potential negative impacts, it is submitted that the proposed Grid Connection has **notable positive impacts,** in that it aligns with, and is in furtherance of, international, national, regional and local strategies to support alternative / renewable energy projects. These include the distribution of much-needed 'clean' electricity into the national grid, provision of local electrical infrastructure for use in long-term, and the provision of employment opportunities during the construction and operation phases for members of local communities.

Sufficient mitigation has been recommended to reduce potential negative impacts to an acceptable level. It is submitted that the proposed installation of the preferred overhead powerline alternatives will be sustainable in the long term and the preferred alternative can be considered to be the most feasible / viable option, from environmental and practical perspectives.

~~**Alternative A (preferred alternative)**~~

~~**Alternative B**~~

~~**Alternative C**~~

No-go alternative (compulsory)

The impacts of the no go alternative will be mostly of an negative economic and social nature, as the positive social and economic benefits of the Solar Energy Facility will not be realised. From an ecological, heritage and visual point of view, there will be no impacts of the No Go Alternative.

SECTION E. RECOMMENDATION OF PRACTITIONER

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

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

Not Applicable

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

- All the stone walled sites in the areas should be demarcated and fenced-in to avoid accidental damage and to ensure preservation. A Cultural Heritage Management Plan for these sites should be drafted and implemented. If the sites cannot be avoided then detailed mapping and archaeological excavations needs to be conducted prior to demolition being applied for
- Heritage Site 15, as identified by the heritage specialist should be fenced off and not be disturbed by any construction or operation activities.
- Minimize area cleared for construction and building activities, including the areas used by staff during construction. Wherever possible, any activities that can damage vegetation (e.g. tracks, unloading, storage, construction sites) should be located on the areas of lowest sensitivity and only within the footprint of the development.
- Keep the number of access routes to a minimum to decrease the land area that will be transformed, thus reducing impacts and remediation. Clearly demarcate activity-specific construction areas to control and limit movement of personnel, vehicles and materials to contain the extent of the impacts to the lowest level possible.
- Harvesting or removal – other than for rescue purposes- of any plant material is strictly prohibited. Staff shall only assist with the (necessary) removal of important plant species if requested to do so, under supervision.
- Prevent introduction of alien plant species. Be aware of the fact that seeds of invasive plants can be transported by vehicles as well as staff clothing, thus eradicate weedy and invasive species around areas where staff congregate as well to prevent the spread of seeds. All declared aliens must be identified and managed in accordance with the Conservation of Agricultural Resources Act, 1983 (Act No.

43 of 1983), the implementation of a monitoring programme in this regard is suggested, being the responsibility of the ECO

- Revegetate exposed soils as soon as possible to stabilise the top soils, or apply a mulch of rock fragments to reduce the exposure of top soils to events that may initiate excessive erosion. Rehabilitate plant cover as a continual process, to maximize viability of the natural seed bank and reduce loss of top soil during storage. Use only indigenous (to the area) plant material. Base rehabilitation of the site at closure on the original plant species composition of the plant community affected by the development.

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.

Dale Holder – Cape Environmental Assessment Practitioners (Pty) Ltd

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

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