SOLARRESERVE SOUTH AFRICA (PTY) LTD

PROPOSED DECOMMISIONING OF THE EXISTING 132KV POWER LINE AND CONSTRUCTION OF LIMESTONE 1-132KV POWER LINE AND SWITCHYARDS ON PORTION 0 (REMAINING EXTENT) OF THE PLAAS 267, NORTHERN CAPE PROVINCE

Draft Basic Assessment Report

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environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

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

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
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9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.

13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.
14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included on the electronic copy of the report submitted to the competent authority.

SOLARRESERVE SOUTH AFRICA (PTY) LTD

PROPOSED DECOMMISSIONING OF THE EXISTING 132KV POWER LINE AND CONSTRUCTION OF LIMESTONE 1-132KV POWER LINE AND SWITCHYARDS

DRAFT BASIC ASSESSMENT REPORT

Executive Summary

SolarReserve South Africa (Pty) Ltd (hereafter referred to as SolarReserve) intends to decommission the existing 132kV power line and construct a new 132kV power line and associated switchyard stations on the Portion 0 (remaining extent) of the Plaas 267. The proposed development site is located approximately 32km outside of the town Daniëlskuil in the Northern Cape Province. The proposed development is required to evacuate energy generated by the approved Concentrated Solar Power (CSP) / Photovoltaic (PV) Plant facilities for the environmentally approved Solar Energy Power Plant (DEA Ref. Limestone CSP DEA Ref. 12/12/20/2646; Wilger PV DEA Ref. 12/12/20/2649; Arriesfontein PV 1 DEA Ref. 12/12/20/2648) on the same property. The proposed development is one of three (3) proposed power line developments to be undertaken to evacuate the energy generated from the greater Solar Energy Power Plant on the Project Site. The other two (2) proposed power line developments include the Wilger – 132 kV power line and switchyards (intended to evacuate the energy generated by the Photovoltaic Plant (PV) facilities on the property) and the Limestone 2 – 132kV power line and switchyards (intended to evacuate the energy generated by the Concentrated Solar Power (CSP / PV) facilities on the property). These two proposed power lines will be undertaken as separate environmental applications. The Limestone 2 – 132kV proposed power line environmental application reference number is; 14/12/16/3/3//1/971. The Wilger 132kV proposed power line application reference number is; 14/12/16/3/3//1/972.

The proposed development is located in the Kgatelopele Local Municipality that falls under the ZF Mgcawu District Municipality (formerly known as the Siyanda District Municipality) approximately 32km outside of Daniëlskuil town in the Northern Cape Province. The proposed power line will be running adjacent to the regional road R31. The land uses of the greater part of the proposed study area is encompassed by agricultural farming activities. The proposed site falls within the Ghaap Plateau Vaalbosveld Region classification and is characterized by flat plateaus with a well-developed shrub layer.

SiVEST Environmental Division has been appointed as the independent environmental consultant by SolarReserve to undertake a Basic Assessment (BA) process for the proposed development. It is understood that the proposed development will be undertaken by SolarReserve on behalf of Eskom. SiVEST is an approved Eskom vendor and the proposed development will be undertaken in line with Eskom environmental standards.

The proposed development will require environmental authorisation from the Competent Authority. The decision-making authority for this project is the Department of Environmental Affairs (DEA). However, the provincial authorities will also be consulted i.e. the Northern Cape Department of Environmental Affairs and Nature Conservation (NC DENC). The BA for the proposed development will be conducted in terms of the Environmental Impact Assessment Regulations promulgated on the 18th June 2010 in terms of section 24(2) and section 24(D) of the National Environmental Management Act (No. 107 of 1998) (NEMA), which were amended and came into effect on 2nd August 2010. In terms of these regulations, a BA process is required for the proposed development. All other applicable and relevant legislation and/or guidelines were consulted during the BA process.

The proposed development is required to evacuate electrical energy generated from the Limestone CSP / Arriesfontein PV facilities on Portion 0 (remaining extent) of the Plaas 267. The portion of the existing 132kV power line that divides Portion 0 (remaining extent) of the Plaas 267 will be decommissioned on the property only and re-routed along the south-eastern and south-western boundary of Portion 0 (remaining extent) of the Plaas 267 where it will reconnect again with the existing 132kV power line that routes west of Portion 0 (remaining extent) of the Plaas 267.

In terms of the new 132kV power line that is to be constructed, the new power line will connect with on-site switchyards and will route westwards off-site extending to Olien Substation from Portion 0 (remaining extent) of the Plaas 267. It is proposed that the new off-site power line will run adjacent to the existing 132kV power line, until it connects with Olien Substation. The proposed development will require a servitude of 31m (i.e. 15.5m from either side of the center line). The provision for a 1km corridor has been provided for assessment for the portion of the proposed power line that routes westwards off-site of Portion 0 (remaining extent) of Plaas 267 towards Olien Substation adjacent the existing 132kV power line.

The proposed development consists of:

- The decommissioning of the existing 132kV power line that divides Portion 0 (remaining extent) of the Plaas 267 – approximately 4.39km in length;
- Construction of a new 132kV power line on Portion 0 (remaining extent) of the Plaas 267 to Olien Substation – approximately 20.87km; and
- Construction of 50m x 50m switchyard stations – each switchyard will be a 5 Bay 132kV switching station.

The exact location of the towers will only be determined during the final design stages of the power line. A route map depicting the proposed power line corridor off-site as well as routing on-site, switchyards and the 132kV power line to be decommissioned are shown in **Figure i** below.

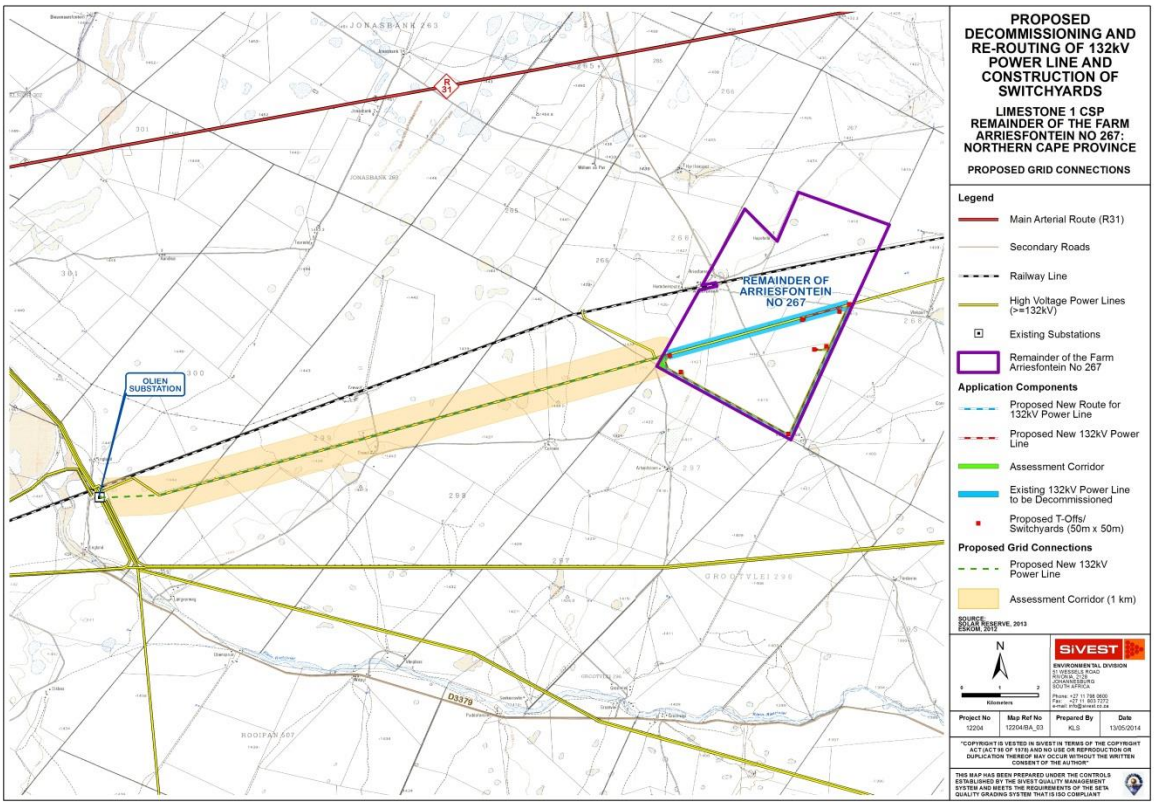

Figure i: Route Map

Due to the space constraints on Portion 0 (remaining extent) of the Plaas 267, no on-site alternatives are proposed for the development. The proposed new power line is restricted by the approved Limestone Solar Energy Plant components which occupies most of the developable land leaving little space for maneuverability. That being said, the existing 132kV power line that divides Portion 0 (remaining extent) of the Plaas 267, routes through the approved location for the CSP Plant which necessitates the decommissioning and re-routing of the power line. The re-routed power line can therefore only run along the south eastern and south western boundary of the farm (**Figure ii**). Additionally, the new proposed power line on site suffers the same space constraints and will therefore also mainly be restricted to the south eastern and south western boundary of the farm (except where routing to switchyards).

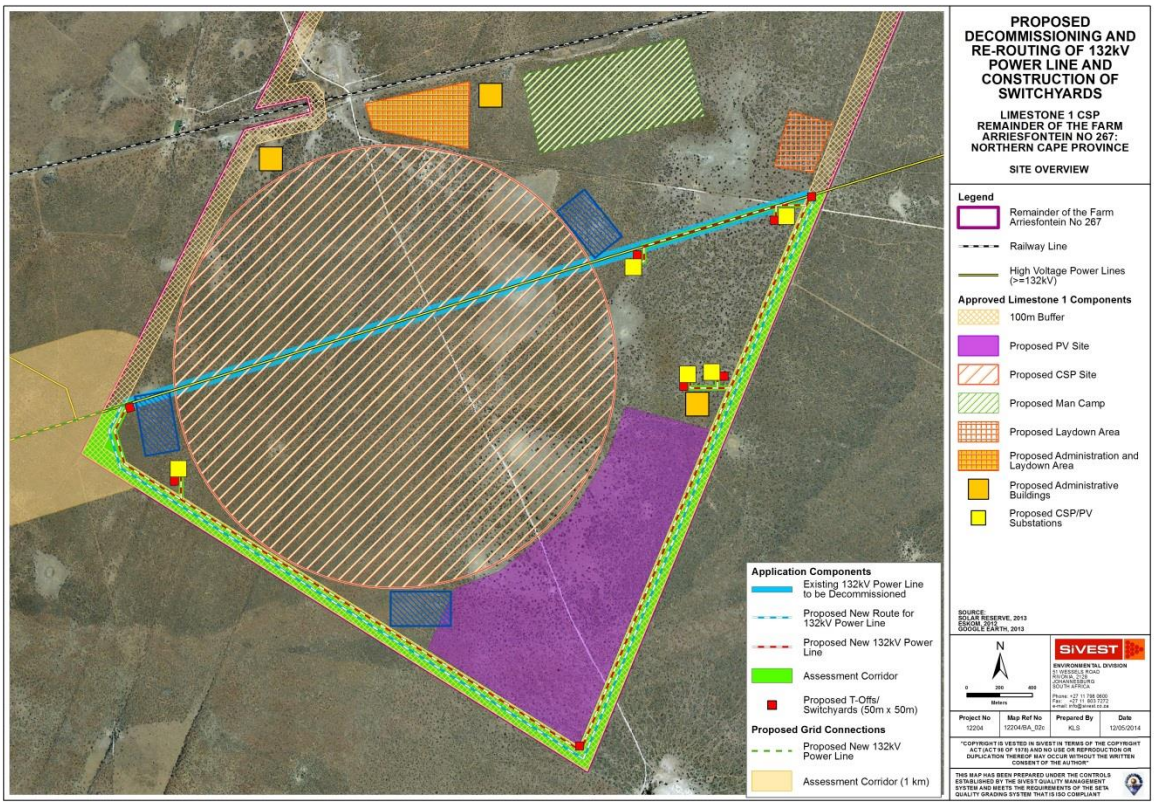

Figure ii: On-site power line route and switchyard locations

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

- Limiting adverse environmental and social impacts to surrounding areas and landowners where there are currently no impacts;
- In terms of the proposed power line exiting Portion 0 (remaining extent) of the Plaas 267 to the west towards Olien substation, an existing power line runs to the substation. It is intended that the proposed power line runs adjacent to this line to limit potential environmental impacts. Additionally, it is common practice for Eskom to route power lines where an existing network is present. This not only limits environmental impacts but also is more feasible in terms of maintenance and repairs. Additionally, positioning the proposed power line adjacent to an existing network will have a limited impact to surrounding landowners where currently there are no power lines or impacts to the environment. It must be noted that a 1km wide corridor will however still form part of the assessment of the proposed power line off-site to allow for some maneuverability where required.
- On-site, there are considerable space constraints on Portion 0 (remaining extent) of the Plaas 267 due to the approved Limestone Solar Energy Plant components that will be developed, which restricts the proposed power line to the proposed routes and switchyard locations;
- The proposed development is activity specific, in that power lines are required to transmit/distribute electricity from the approved Limestone Solar Energy Plant developments on Portion 0 (remaining extent) of the Plaas 267 to the country's electrical network. A feasible and reasonable activity alternative therefore cannot be considered;

- Various design types for the electrical towers are proposed to be used. However, the most suitable tower design for specific location (based on topographic and other factors) will dictate the tower to be used due to technical reasons. Additionally however, the different tower types are quite similar and will have very little to no variation in the environmental impacts that may be imposed;
- The proposed development is technology specific in that power lines are required for the evacuation of power, which is the primary function of the power generation facility;
- The proposed development is operationally specific in that the operation of power lines are required for the proposed development;
- Position of the proposed switchyards need to be next to the approved substation sites of the approved Limestone Solar Energy Plant developments for technical reasons; and
- Lastly, the proposed power line will be in close proximity to the Limestone Solar Energy Plant for practical and feasibility reasons.

Several specialist studies were conducted during the BA to identify the issues associated with the proposed development. These include:

- Biodiversity (fauna and flora)
- Avifauna
- Wetlands
- Agricultural potential and soil
- Heritage
- Visual
- Social-economic

A summary of the major findings and recommendation for each specialist study is shown in **Table i** below.

Table i: Specialist Findings Summary Table

Environmental Parameter	Summary of major findings	Recommendations
Biodiversity	▪ The immediate area exhibits low levels of transformation, comprising extensive areas of natural habitat, categorised as Shrubland and Bushland. ▪ Overall two (2) macro habitat types and habitat variations were found including: **Natural Woodland Habitat** (including Open Woodland (*Searsia lancea*) of Medium floristic sensitivity; Closed Shrubveld (*Tarchonanthus camphoratus*) of Medium floristic sensitivity); and	▪ Most of sensitive pan habitats are located to the south of the existing power line. It is therefore recommended that the proposed line placed directly adjacent to the north of the existing line. ▪ Once the final alignment is approved, the corridor is to be subjected to suitable count surveys in order to determine the number and relevant details pertaining to protected tree species. This information will be required for the

Environmental Parameter	Summary of major findings	Recommendations
	Open Woodland (*Olea europaea*) of Medium-high floristic sensitivity; and **Endorheic Pans** (Medium-high floristic sensitivity). ▪ A recorded diversity of 89 plant species was established during the field investigations represented by five (5) tree species and fourteen (14) shrub species. A well-developed herbaceous stratum is represented by forty five (45) forbs and twenty (20) grass species. ▪ No plant species that are included in any of the threatened conservation categories were recorded. The following protected tree species were however present in the study area and are protected under the National Forests Act of 1998; *Acacia erioloba* (occasional, < 3 individuals), and *Olea europaea* subsp. *africana* (abundant). ▪ The presence of 80 animal species was confirmed during the original field investigations by means of visual sightings, tracks, scats, burrows and species-specific calls as well as infra-red camera stations. The following results were recorded: eight (8) invertebrate species; one (1) frog species; eight (8) reptile species; forty five (45) bird species; and eighteen (18) mammal species. ▪ A total of 106 RD animals are known to occur in the Northern Cape Province (dragonflies, damselflies, butterflies, frogs, reptiles, birds and mammals). An assessment of the Probability of Occurrence (PoC) for these animals yielded the following	submission of application forms to NCDENC and DAFF prior to the disturbance of these individuals.

Environmental Parameter	Summary of major findings	Recommendations
	probabilities respectively: seventy two (72) species have a low PoC; eleven (11) species have a moderate-low PoC; nine (9) species have a moderate PoC; five (5) species have a moderate-high PoC; and nine (9) species have a high PoC. ▪ The natural woodland habitats of the study area have a medium faunal sensitivity. The Endorheic pans of the study area are regarded to have a medium-high faunal sensitivity.	
Avifauna	▪ No Red Listed species were abundant in the study area, only the resultant species for the study area were determined to be White backed Vulture, Martial Eagle etc. ▪ The major impacts in projects of this nature includes: collision of birds with overhead cables, electrocution, and destruction of habitat and disturbance of birds.	▪ It is recommended that once the final pylon positions are pegged, a walk through should be conducted so to identify the exact spans of line for marking to mitigate for potential bird collisions.
Wetlands	▪ Thirty two (32) wetlands were identified along the proposed power line corridor which varies from size. ▪ The proposed power line route may need to cross through three (3) pan wetlands along the route and it may need to enter into the buffer zone around a further three (3) delineated wetlands. ▪ The required switchyard on the eastern end of the route will also be located well within the 50m buffer zone of a small pan.	▪ Any activity which is contemplated and which will impact on the identified wetlands by either impeding or diverting flow in a watercourse, or through altering the beds, banks or characteristics of the watercourse will be subject to authorisation in terms of water uses (c) and (i) as detailed under Section 21 of the National Water Act.
Agricultural potential and soils	▪ The geology of the area comprises Tertiary and Quaternary deposits including surface limestone outcrops.	▪ It does not appear, from a soils aspect, that there are any especially sensitive areas (“fatal flaws”) that should be avoided.

Environmental Parameter	Summary of major findings	Recommendations
	▪ Three (3) types of soil type were identified on site that describes the land type at the study area. These include the Coega, Plooysburg and Hutton soil types. ▪ The major impact is the loss of potentially arable land use due to the construction of various types of infrastructure (power line and switchyard)	▪ Due mainly to the prevailing unfavourable climatic conditions for arable agriculture, as well as the prevalence of soils with limited depth, it is not envisaged that any more detailed soil investigation will be required. ▪ The main mitigation measure would be to ensure that as little pollution or other non-physical disturbance occurs.
Heritage	▪ One (1) heritage site was identified which is associated with a low density Later Stone Age material with no context. ▪ The overall impact of the development on heritage resources is seen as acceptably low and impacts can be mitigated to acceptable levels.	▪ It is recommended that an updated paleontological desktop for the Limestone1 alignment be done to determine the paleontological significance of the Precambrian limestones, dolomites and cherts of the Ghaap Group (Campbell Rand Subgroup). ▪ Further to these recommendations the general Heritage Management Guideline in Sections 6 needs to be incorporated in to the EMP for the project.
Visual	▪ Changing of the visual landscape by the clearing of vegetation and the construction of steel towers at intervals of approximately 220m, as well conductors spanning between the towers. ▪ Visibility of and exposure to views of steel towers and conductors at various locations and distances from the facility.	▪ Keep the height of the steel towers at the minimum of 18m where possible. ▪ Avoid the unnecessary removal of vegetation. ▪ Rehabilitate cleared areas after construction.
Social	▪ Landowners and farmers are in support of the power line but wishes to be engaged during the progress of the proposed development ▪ During construction phase, the total net effect on the socio-economic environment will be positive but	▪ The developer should always engage the landowners so to afford them an opportunity to raise their concerns during the construction and maintenance phase

Environmental Parameter	Summary of major findings	Recommendations
	during the maintenance phase it will be negative but of a low significance.	

An impact assessment was conducted to determine the significance of each identified impact, as well as to identify mitigation measures which may be required. The potential positive and negative impacts associated within these studies have been evaluated and rated accordingly. The results of the specialist studies have indicated that no fatal flaws are anticipated as a result of the proposed development.

A thorough public participation process (PPP) will be undertaken as part of the BA. During this process, on-going consultation is to take place with various key stakeholders and organs of state, which include provincial, district and local authorities, relevant government departments, parastatals and NGO's. All PPP documentation will be included in the Final BAR for consideration by the DEA.

It is the opinion of the EAP that the proposed development should be allowed to proceed provided that the recommended mitigation measures are implemented, and provided the following conditions are adhered to:

- All mitigation measures recommended by the various specialists should be strictly implemented.
- Final EMPr should be approved by DEA prior to the construction of the overhead line and switchyards.

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DRAFT BASIC ASSESSMENT REPORT

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Glossary of terms

Biodiversity: The variety of life in an area, including the number of different species, the genetic wealth within each species, and the natural areas where they are found.

Basic Assessment: The process of collecting, organising, analysing, interpreting and communicating information that is relevant to the consideration of the application.

Change process: A change that takes place within the receiving environment due to direct or indirect intervention (cf. Vanclay, 2002).

Demographical processes: A change processes which refer to the composition and structure of the local community.

Economic processes: A change process which refer to the movement of money between industries and between industries and consumers.

Environmental Management Programme: A legally binding working document, which stipulates environmental and socio-economic mitigation measures that must be implemented by several responsible parties throughout the duration of the proposed project.

Geographical processes: A change processes that affect the land uses of the local area.

Institution and Legal processes: A change process which refer to the processes that affect service delivery to the local area.

Red Data species: All those species included in the categories of endangered, vulnerable or rare, as defined by the International Union for the Conservation of Nature and Natural Resources.

Riparian: The area of land adjacent to a stream or river that is influence by stream induced or related processes.

Socio-cultural processes: A change process which refer to the processes that affect the local culture, i.e. the way in which the local community live (however, sometimes different cultural groups occupy the same geographical area and these groups are seldom homogenous).

List of Abbreviations

ATNS	Air Traffic Navigation Services
BA	Basic Assessment
BAR	Basic Assessment Report
C&RR	Comments and Response Report
CSP	Concentrating Solar Power
DAFF	Department of Agriculture, Forestry and Fisheries
DWA	Department of Water Affairs
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMF	Electric and Magnetic Fields
EMPr	Environmental Management Programme
EWT	Endangered Wildlife Trust
GIS	Geographic Information System
GN	Government Notice
HIA	Heritage Impact Assessment
I&AP	Interested and Affected Party
IDP	Integrated Development Plan
kV	Kilovolt
NEMA	National Environmental Management Act, 1998 (Act No.107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NFA	National Forests Act, 1998 (Act No. 84 of 1998)
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999)
NWA	National Water Act, 1998 (Act No. 36 of 1998
PPP	Public Participation Process
PV	Photovoltaic
REIPPP	Renewable Energy Independent Power Producer Programme
SACAA	SA Civil Aviation Authority
SAHRA	South African Heritage Resources Agency
SANBI	South African National Biodiversity Institute
SANRAL	South African National Roads Agency SOC Limited
SDF	Spatial Development Framework
SG	Surveyor General
SOC	State Owned Company
TBA	To be announced
VIA	Visual Impact Assessment
WESSA	Wildlife and Environmental Society of South Africa

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1. Introduction

SolarReserve South Africa (Pty) Ltd (hereafter referred to as SolarReserve) intends to decommission the existing 132kV power line and construct a new 132kV power line and associated switchyard stations on the Portion 0 (remaining extent) of the Plaas 267. The proposed development site is located approximately 32km outside of the town Daniëlskuil in the Northern Cape Province. The proposed development is required to evacuate energy generated by the approved Concentrated Solar Power (CSP) / Photovoltaic (PV) Plant facilities for the environmentally approved Solar Energy Power Plant (DEA Ref. Limestone CSP DEA Ref. 12/12/20/2646; Wilger PV DEA Ref. 12/12/20/2649; Arriesfontein PV 1 DEA Ref. 12/12/20/2648) on the same property. The proposed development is one of three (3) proposed power line developments to be undertaken to evacuate the energy generated from the greater Solar Energy Power Plant on the Project Site. The other two (2) proposed power line developments include the Wilger – 132 kV power line and switchyards (intended to evacuate the energy generated by the Photovoltaic Plant (PV) facilities on the property) and the Limestone 2 – 132kV power line and switchyards (intended to evacuate the energy generated by the Concentrated Solar Power (CSP / PV) facilities on the property). These two proposed power lines will be undertaken as separate environmental applications. The Limestone 2 – 132kV proposed power line environmental application reference number is; 14/12/16/3/3//1/971. The Wilger 132kV proposed power line application reference number is; 14/12/16/3/3//1/972.

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The proposed development will require environmental authorisation from the Competent Authority. The decision-making authority for this project is the Department of Environmental Affairs (DEA). However, the provincial authorities will also be consulted i.e. the Northern Cape Department of Environmental Affairs and Nature Conservation (NC DENC). The BA for the proposed development will be conducted in terms of the Environmental Impact Assessment Regulations promulgated on the 18th June 2010 in terms of section 24(2) and section 24(D) of the National Environmental Management Act (No. 107 of 1998) (NEMA), which were amended and came into effect on 2nd August

2010. In terms of these regulations, a BA process is required for the proposed development. All other applicable and relevant legislation and/or guidelines were consulted during the BA process.

2. Project Description

The proposed development will require environmental authorisation from the Competent Authority. The decision-making authority for this project is the Department of Environmental Affairs (DEA). However, the provincial authorities will also be consulted i.e. the Northern Cape Department of Environmental Affairs and Nature Conservation (NC DENC). The BA for the proposed development will be conducted in terms of the Environmental Impact Assessment Regulations promulgated on the 18th June 2010 in terms of section 24(2) and section 24(D) of the National Environmental Management Act (No. 107 of 1998) (NEMA), which were amended and came into effect on 2nd August 2010. In terms of these regulations, a BA process is required for the proposed development. All other applicable and relevant legislation and/or guidelines were consulted during the BA process.

The proposed development is required to evacuate electrical energy generated from the Limestone CSP / Arriesfontein PV facilities on Portion 0 (remaining extent) of the Plaas 267. The portion of the existing 132kV power line that divides Portion 0 (remaining extent) of the Plaas 267 will be decommissioned on the property only and re-routed along the south-eastern and south-western boundary of Portion 0 (remaining extent) of the Plaas 267 where it will reconnect again with the existing 132kV power line that routes west of Portion 0 (remaining extent) of the Plaas 267.

In terms of the new 132kV power line that is to be constructed, the new power line will connect with on-site switchyards and will route westwards off-site extending to Olien Substation from Portion 0 (remaining extent) of the Plaas 267. It is proposed that the new off-site power line will run adjacent to the existing 132kV power line, until it connects with Olien Substation. The proposed development will require a servitude of 31m (i.e. 15.5m from either side of the center line). The provision for a 1km corridor has been provided for assessment for the portion of the proposed power line that routes westwards off-site of Portion 0 (remaining extent) of Plaas 267 towards Olien Substation adjacent the existing 132kV power line.

The proposed development consists of:

- The decommissioning of the existing 132kV power line that divides Portion 0 (remaining extent) of the Plaas 267 – approximately 4.39km in length;
- Construction of a new 132kV power line on Portion 0 (remaining extent) of the Plaas 267 to Olien Substation – approximately 20.87km; and
- Construction of 50m x 50m switchyard stations – each switchyard will be a 5 Bay 132kV switching station.

The power line will consist of a series of towers located approximately 100-200m apart, depending on the terrain and soil conditions as well as the tower types to be used. The exact tower type to be used will be determined (based on load and other calculations) during the final design stages of the power line. It is however likely that the bird friendly Single Steel Pole tower type (e.g. ESKOM D-DT 7641, D-DT 7649) will be used in combination with the Steel Lattice towers at bend points and where greater distances need to be spanned. The Single Steel Pole tower type is between 18m and 25m in height

and the Steel Lattice tower type is between 25m and 29m in height. A photograph of the Single Steel Pole tower type is included in Error! Reference source not found. below. The proposed power line may be fitted with various types of conductors although it is most likely that a kingbird conductor will be fitted to carry a capacity of 20kVa.

Figure 1: Example of the Monopole Tower Type

The exact location of the towers will only be determined during the final design stages of the power line. A route map depicting the proposed power line corridor off-site as well as routing on-site, switchyards and the 132kV power line to be decommissioned are shown in Figure 2 below.

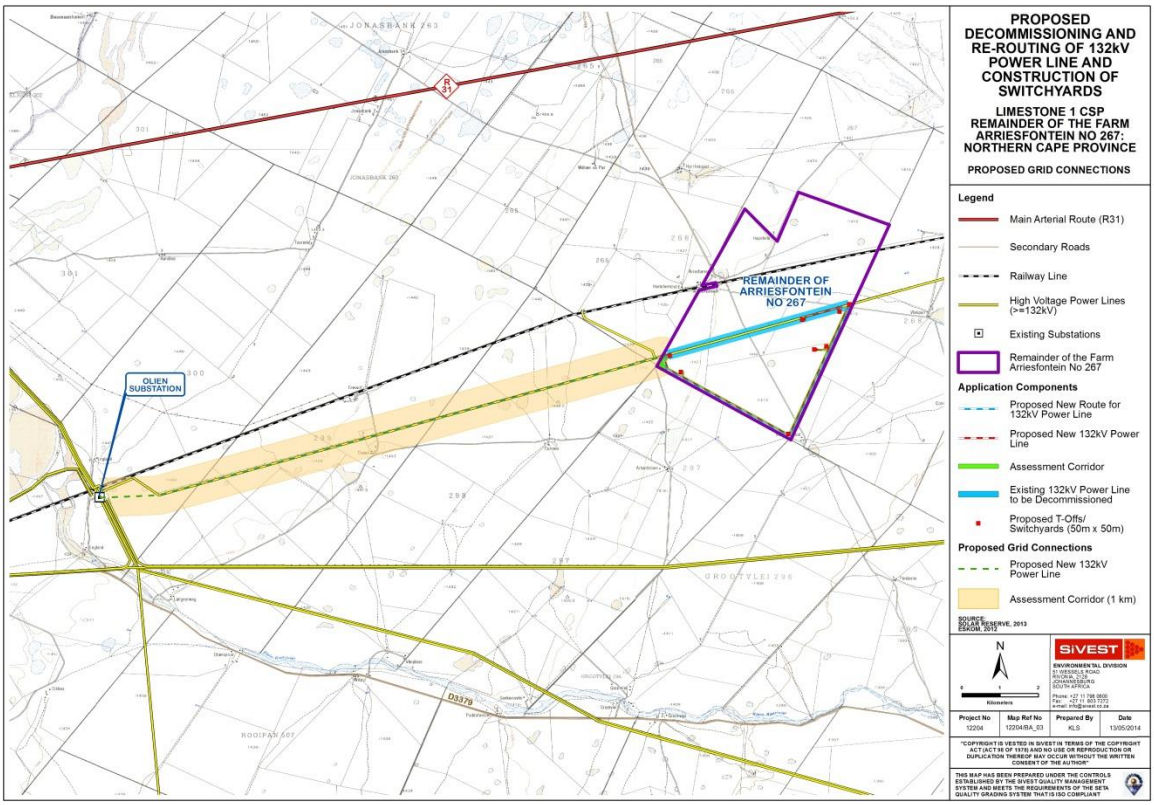

Figure 2: Route Map

Due to the space constraints on Portion 0 (remaining extent) of the Plaas 267, no on-site alternatives are proposed for the development. The proposed new power line is restricted by the approved Limestone Solar Energy Plant components which occupies most of the developable land leaving little space for maneuverability. That being said, the existing 132kV power line that divides Portion 0 (remaining extent) of the Plaas 267, routes through the approved location for the CSP Plant which necessitates the decommissioning and re-routing of the power line. The re-routed power line can therefore only run along the south eastern and south western boundary of the farm (Figure 3). Additionally, the new proposed power line on site suffers the same space constraints and will therefore also mainly be restricted to the south eastern and south western boundary of the farm (except where routing to switchyards).

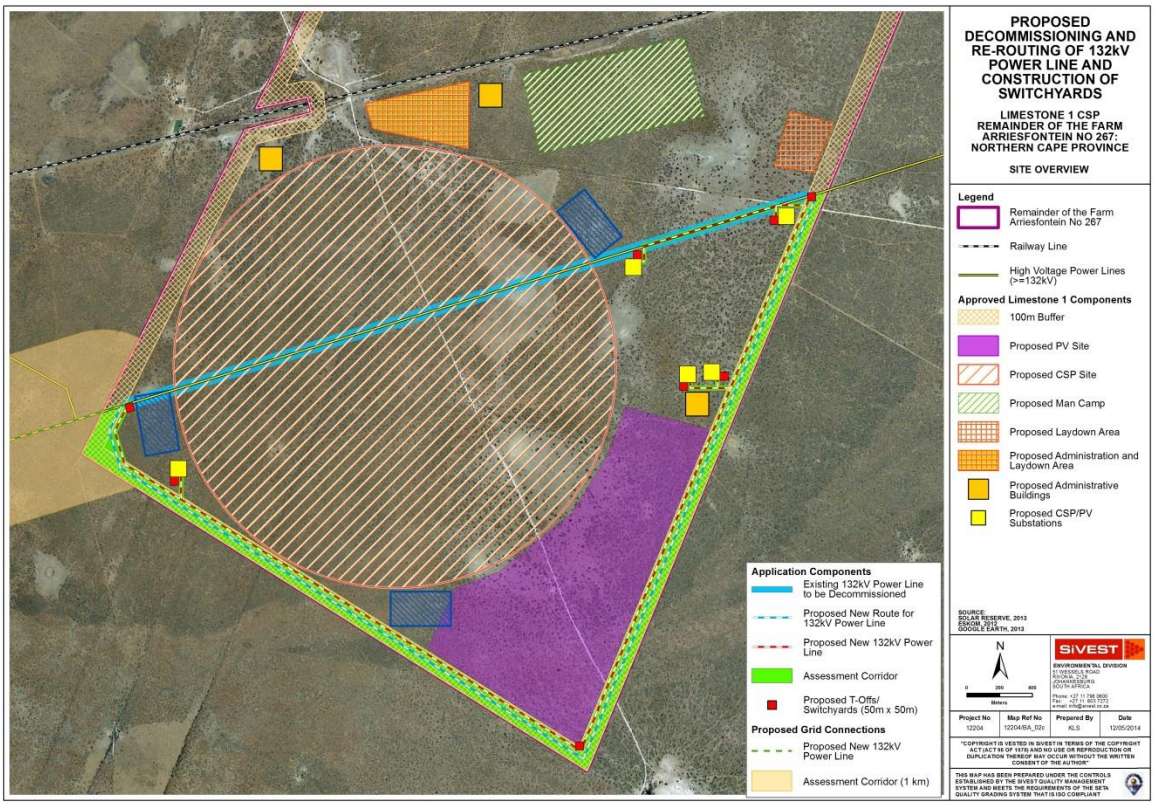

Figure 3: On-site power line route and switchyard locations

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

- Limiting adverse environmental and social impacts to surrounding areas and landowners where there are currently no impacts;
- In terms of the proposed power line exiting Portion 0 (remaining extent) of the Plaas 267 to the west towards Olien substation, an existing power line runs to the substation. It is intended that the proposed power line runs adjacent to this line to limit potential environmental impacts. Additionally, it is common practice for Eskom to route power lines where an existing network is present. This not only limits environmental impacts but also is more feasible in terms of maintenance and repairs. Additionally, positioning the proposed power line adjacent to an existing network will have a limited impact to surrounding landowners where currently there are no power lines or impacts to the environment. It must be noted that a 1km wide corridor will however still form part of the assessment of the proposed power line off-site to allow for some maneuverability where required.
- On-site, there are considerable space constraints on Portion 0 (remaining extent) of the Plaas 267 due to the approved Limestone Solar Energy Plant components that will be developed, which restricts the proposed power line to the proposed routes and switchyard locations;
- The proposed development is activity specific, in that power lines are required to transmit/distribute electricity from the approved Limestone Solar Energy Plant developments on Portion 0 (remaining extent) of the Plaas 267 to the country's electrical network. A feasible and reasonable activity alternative therefore cannot be considered;

- Various design types for the electrical towers are proposed to be used. However, the most suitable tower design for specific location (based on topographic and other factors) will dictate the tower to be used due to technical reasons. Additionally however, the different tower types are quite similar and will have very little to no variation in the environmental impacts that may be imposed;
- The proposed development is technology specific in that power lines are required for the evacuation of power, which is the primary function of the power generation facility;
- The proposed development is operationally specific in that the operation of power lines are required for the proposed development;
- Position of the proposed switchyards need to be next to the approved substation sites of the approved Limestone Solar Energy Plant developments for technical reasons; and
- Lastly, the proposed power line will be in close proximity to the Limestone Solar Energy Plant for practical and feasibility reasons.

3. Brief Description of the Receiving Environment

The proposed development is located in the Kgatelopele Local Municipality that falls under the ZF Mgcawu District Municipality (formerly known as the Siyanda District Municipality) approximately 32km outside of Danielskiul town in the Northern Cape. The proposed power line will be running adjacent to the regional road R31 (**Figure 4**).

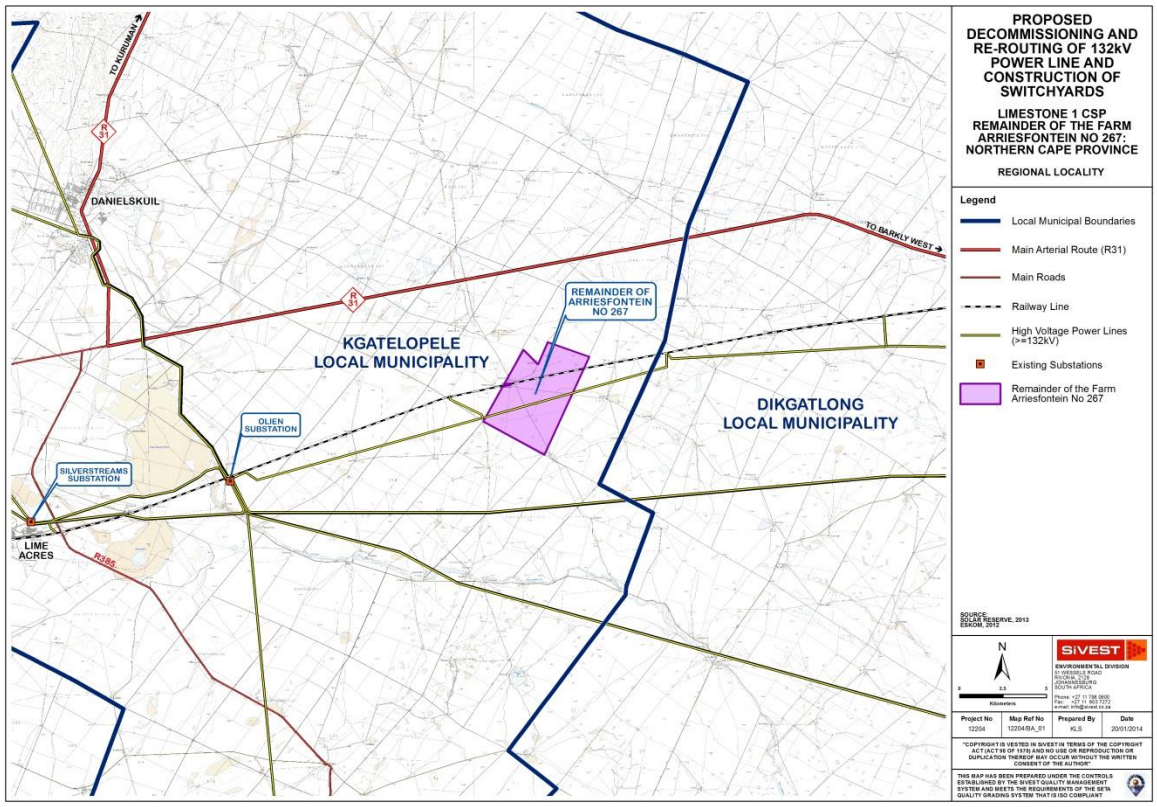

Figure 4: Regional Locality Map

The land uses of the greater part of the proposed study area is encompassed by agricultural farming activities. The proposed site falls within the Ghaap Plateau Vaalbosveld Region classification (**Figure 5**) and is characterized by flat plateaus with a well-developed shrub layer.

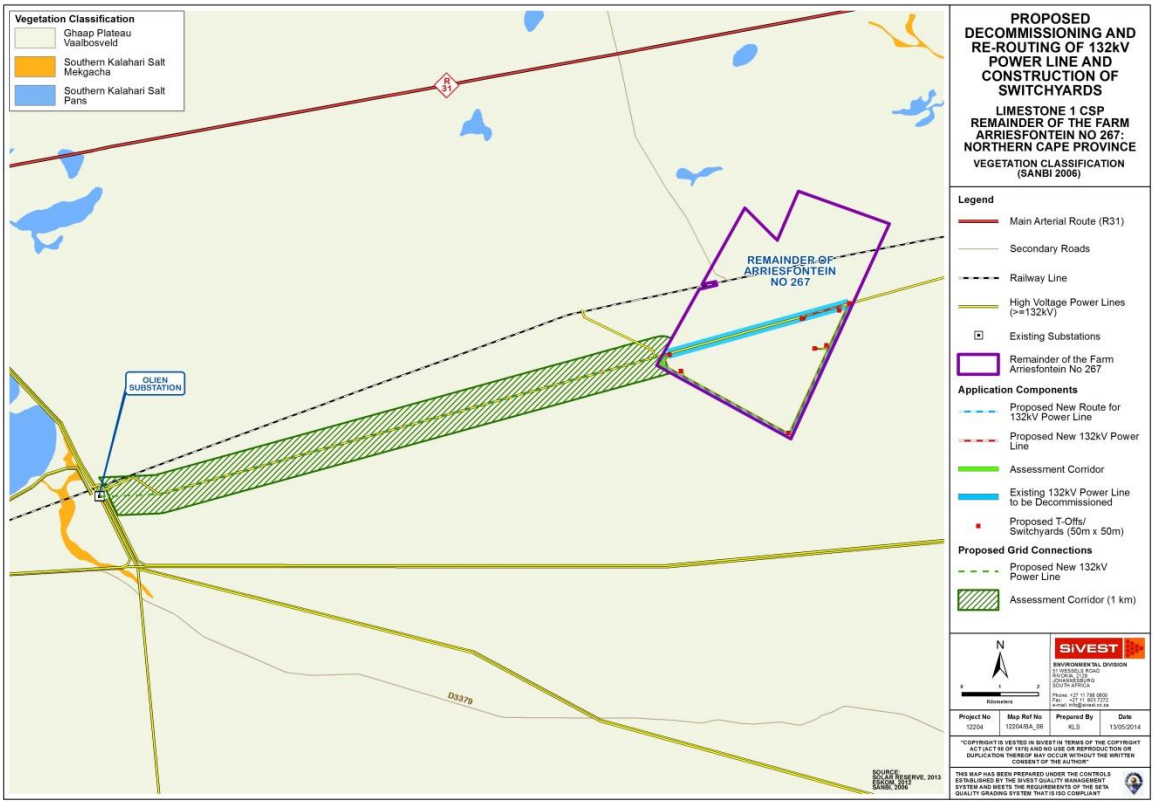

Figure 5: Vegetation Classification Map

4. Expertise of Environmental Assessment Practitioner

The appointed environmental project team for the proposed development is shown in **Table 1** below.

Table 1: Environmental Consultants

SKILL	NAME
Project Manager – Environmental Manager	SiVEST – Kelly Tucker
Environmental Consultants	SiVEST – Shaun Taylor/ Shonisani Selahle
Public Participation Assistant	Zitholele Consulting Services – Nicolene Venter
Biodiversity (fauna/flora and avi-fauna)	Bathusi Environmental Consulting – Riaan Robbeson and Dewald Kamfer
Surface Water and wetland	Wetland Consulting Services – Dieter Kassier

SKILL	NAME
Visual	MetroGIS – Dawie Jansen Van Vuuren
Soils and Agricultural Potential	Garry Patterson– Agricultural Research Commission – Institute for Soil, Climate and Water
Socio-economic	Urban Econ – Elena Broughton
Heritage	Professional Grave Solutions – Wouter Fourie
Avi-fauna	Endangered Wildlife Trust (EWT) – Andrew Paterson
GIS and Mapping	SiVEST – Kerry Schwartz

Please refer to attached CV's for more information (See **Appendix G1**).

5. Authority Consultation

The Department of Environmental Affairs (DEA) is the Competent Authority on this application. The following consultation took place with the DEA:

- An application was submitted to the DEA on 08th July 2013. The application was acknowledged on 12th August 2013 and the following reference number was allocated for the project: DEA: 14/12/16/3/3/1/972
- An exemption from alternatives letter was submitted to the DEA on the 06th September 2013. This application was however, withdrawn on the 06th October 2013 which was subsequently acknowledged by the DEA on the 22nd October 2013.

All consultation with the DEA is included in **Appendix J1**.

The following list summarises the authorities were informed as part of the BA Process:

National / Provincial Authorities

- Department of Water Affairs (DWA)
- Department of Agriculture, Forestry and Fisheries (DAFF)
- Northern Cape Department of Environment & Nature Conservation (NC DENC)
- South African Heritage Resource Authority (SAHRA)
- Northern Cape Department of Agriculture, Land Reform and Rural Development
- Northern Cape Department of Economic Development and Tourism
- Northern Cape Department of Transport, Roads and Public Works
- Department of Mineral Resources (DMR)
- Northern Cape Department of Land Affairs

Local Authorities

- Kgatelopele Local Municipality
- ZF Mgcawu District Municipality

Parastatals / Organs of State

- Agri South Africa (AgriSA)
- Air Traffic Navigation Services (ATNS)
- SA Civil Aviation Authority (SACAA)
- South African National Roads Agency (SANRAL)
- Eskom SOC Holdings
- Telkom
- Transnet Freight Rail

NGO's / Other Entities

- Birdlife South Africa
- Endangered Wildlife Trust (EWT)Wildlife and Environmental Society of South Africa (WESSA)

A database of all I&APs including organs of state / authorities that were consulted during the BA process is included as **Appendix E5**. Detail of correspondence received from Authorities/Organs of State is included in **Appendix E6**.

6. Basic Assessment Report Structure

This Draft Basic Assessment Report (DBAR) is structured as follows:

- **Section A** describes the activity and technical project components, including the proposed alternatives, location and physical size of the activity. This section also provides an activity motivation by describing the need and desirability for the proposed project. Section A expands on the legal ramifications applicable to the project and describes relevant development strategies and guidelines. Finally the section explains the infrastructural requirements of the proposed project such as waste, effluent, emission water use and energy efficiency.
- **Section B** provides a description of the site and region in which the proposed development is intended to be located. Although the chapter provides a broad overview of the region, it is also specific to the application.
- **Section C** describes the Public Participation Process (PPP) undertaken during the Basic Assessment and tables issues and concerns raised by Interested and Affected Parties (I&APs).
- **Section D** identifies potential issues associated with the proposed project by outlining the impacts that may result from the planning, design, construction, operational, decommissioning and closure phases. Section D also provides a description of the mitigation and management measures for each potential impact. The section concludes with an Environmental Impact Statement which summarises the impacts that the proposed development may have on the environment.
- **Section E** outlines the recommendations of the Environmental Assessment Practitioner (EAP).

7. Assumptions and limitations

The following assumptions and limitations have been taken into account when compiling this DBAR:

- It is assumed that all technical information provided by SolarReserve is technically acceptable and accurate.
- The scope of the study is limited to assessing the environmental impacts associated with the proposed decommissioning of the existing 132kV power line dividing Portion 0 (remaining extent) of the Plaas 267, the proposed development of a new 132kV power line and associated switchyards.
- The project is still in the planning stages and therefore some of the specific details technical details are not available. Should these become available during the BA process, they will be included in the report before submission to the DEA.
- It is assumed that the information provided by the various specialists is unbiased and accurate.

The following assumptions, uncertainties and gaps in knowledge were encountered by the various specialists:

- Biodiversity:
    - Findings, results, observations, conclusions and recommendations presented in this report are based on the authors' best scientific and professional knowledge as well as the interpretation of information available at the time of compiling this report.
    - Results presented in the biodiversity report are based on a snapshot investigation of the study area and not on detailed and long-term investigations of all environmental attributes and the varying degrees of biological diversity that may be present in the study area. In particular, this assessment was conducted prior to the start of the austral summer (raining) period and vegetal conditions were not particularly conducive for the location and identification of plants and vegetation.
    - In particular, rare and endemic species normally do not occur in great densities and, because of customary limitations in the search and identification of Red Listed species, the detailed investigation of these species was not possible. Results are ultimately based on estimations and specialist interpretation of imperfect data. The dormant status of vegetation effectively implies that extremely few of the herbaceous conservation important plant taxa were likely to be in a reproductive or vegetative status.
    - It is emphasised that information, as presented in this document, only have bearing on the site as indicated in the accompanying maps. This information cannot be applied to any other area, however similar in appearance or any other aspect, without proper investigation.

- Avifauna:
    - The SABAP-1 data covers the period 1986-1997. Bird distribution patterns fluctuate continuously according to availability of food and nesting substrate. (For a full discussion of potential inaccuracies in ASAB data, see Harrison, Allan, Underhill, Herremans, Tree, Parker & Brown, 1997).

- The site visit was conducted over two (2) days in Spring, over which time various species may not have been present in the study area.
- During the site visit, it was not possible to access the entire length and all sections of all the proposed routes.
- Google Earth ©2013 Imagery may not always reflect the true situation on the ground, as some images may be outdated.
- Predictions in this study are based on experience of these and similar species in different parts of South Africa. Bird behaviour cannot be reduced to formulas that will hold true under all circumstances. However, power line impacts can be predicted with a fair amount of certainty, based on experience gained by the authors through the investigation of hundreds of localities in southern Africa where birds have interacted with power lines since 1996.

- Wetlands:
  - Due to the scale of the remote imagery used (1:10 000 orthophotos and Google Earth Imagery), as well as the accuracy of the handheld GPS unit used to delineated wetlands in the field, the delineated wetland boundaries cannot be guaranteed beyond an accuracy of about 20m on the ground.

- Soils and Agricultural Potential:
  - The ARC-Institute for Soil, Climate and Water (ARC-ISCW) was contracted by SiVEST to undertake a soil investigation near Daniëlskuil, in the Northern Cape Province. The purpose of the investigation is to contribute to the scoping phase of the Environmental Impact assessment (EIA) process for the proposed Limestone Solar Thermal Energy Plant.
  - The original report supplied reconnaissance soil information for the entire Arriesfontein farm and surrounding areas, backed up by a field visit for ground-truthing purposes.
  - The original report was compiled and supplied to the Project Proponent, SolarReserve, in March 2012.
  - The soils and agricultural potential report deals specifically with the Limestone 1 - 132 kV power line development.

- Heritage:
  - Not subtracting in any way from the comprehensiveness of the fieldwork undertaken, it is necessary to realise that the heritage resources located during the fieldwork do not necessarily represent all the possible heritage resources present within the area. Various factors account for this, including the subterranean nature of some archaeological sites and the current dense vegetation cover. As such, should any heritage features and/or objects not included in the present inventory be located or observed, a heritage specialist must immediately be contacted.
  - Such observed or located heritage features and/or objects *may not* be disturbed or removed in any way until such time that the heritage specialist had been able to make an assessment as to the significance of the site (or material) in question. This applies to graves and cemeteries as well. In the event that any graves or burial places are

located during the development the procedures and requirements pertaining to graves and burials will apply as set out below.

- Visual:
  - None.

- Socio-economic:
  - None.

SECTION A: ACTIVITY INFORMATION

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

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

A Declaration of Interest for each specialist is included in **Appendix I** and all specialist reports are included in **Appendix D**.

Project Description

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

SolarReserve South Africa (Pty) Ltd (hereafter referred to as SolarReserve) intends to decommission the existing 132kV power line and construct a new 132kV power line and associated switchyard stations on the Portion 0 (remaining extent) of the Plaas 267. The proposed development site is located approximately 32km outside of the town Daniëlskuil in the Northern Cape Province. The proposed development is required to evacuate energy generated by the approved Concentrated Solar Power (CSP) / Photovoltaic (PV) Plant facilities for the environmentally approved Solar Energy Power Plant (DEA Ref. Limestone CSP DEA Ref. 12/12/20/2646; Wilger PV DEA Ref. 12/12/20/2649; Arriesfontein PV 1 DEA Ref. 12/12/20/2648) on the same property. The proposed development is one of three (3) proposed power line developments to be undertaken to evacuate the energy generated from the greater Solar Energy Power Plant on the Project Site. The other two (2) proposed power line developments include the Wilger – 132 kV power line and switchyards (intended to evacuate the energy generated by the Photovoltaic Plant (PV) facilities on the property) and the Limestone 2 – 132kV power line and switchyards (intended to evacuate the energy generated by the Concentrated Solar Power (CSP / PV) facilities on the property). These two proposed power lines will be undertaken as separate environmental applications. The Limestone 2 – 132kV proposed power line environmental application reference number is; 14/12/16/3/3//1/971. The Wilger 132kV proposed power line application reference number is; 14/12/16/3/3//1/972.

The proposed development is required to evacuate electrical energy generated from the Limestone CSP / Arriesfontein PV facilities on Portion 0 (remaining extent) of the Plaas 267. The portion of the

existing 132kV power line that divides Portion 0 (remaining extent) of the Plaas 267 will be decommissioned on the property only and re-routed along the south-eastern and south-western boundary of Portion 0 (remaining extent) of the Plaas 267 where it will reconnect again with the existing 132kV power line that routes west of Portion 0 (remaining extent) of the Plaas 267.
In terms of the new 132kV power line that is to be constructed, the new power line will connect with on-site switchyards and will route westwards off-site extending to Olien Substation from Portion 0 (remaining extent) of the Plaas 267. It is proposed that the new off-site power line will run adjacent to the existing 132kV power line, until it connects with Olien Substation. The proposed development will require a servitude of 31m (i.e. 15.5m from either side of the center line). The provision for a 1km corridor has been provided for assessment for the portion of the proposed power line that routes westwards off-site of Portion 0 (remaining extent) of Plaas 267 towards Olien Substation adjacent the existing 132kV power line.

The proposed development consists of:

- The decommissioning of the existing 132kV power line that divides Portion 0 (remaining extent) of the Plaas 267 – approximately 4.39km in length;
- Construction of a new 132kV power line on Portion 0 (remaining extent) of the Plaas 267 to Olien Substation – approximately 20.87km; and
- Construction of 50m x 50m switchyard stations – each switchyard will be a 5 Bay 132kV switching station.

The power line will consist of a series of towers located approximately 100-200m apart, depending on the terrain and soil conditions as well as the tower types to be used. The exact tower type to be used will be determined (based on load and other calculations) during the final design stages of the power line. It is however likely that the bird friendly Single Steel Pole tower type (e.g. ESKOM D-DT 7641, D-DT 7649) will be used in combination with the Steel Lattice towers at bend points and where greater distances need to be spanned. The Single Steel Pole tower type is between 18m and 25m in height and the Steel Lattice tower type is between 25m and 29m in height. The proposed power line may be fitted with various types of conductors although it is most likely that a kingbird conductor will be fitted to carry a capacity of 20kVa.

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

Listed activity as described in GN R.544 and 546		**Description of project activity**
Government Notice. R544- **Listing Notice 1 of 2010**		
10	The construction of facilities or infrastructure for the transmission and distribution of electricity – Outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts	The proposed development entails the construction of a 132kV power line outside an urban area.
11	The construction of: xiv. infrastructure or structures covering 50 square metres or more where such construction occurs within a	The proposed development corridor crosses thirty two wetlands that may be

	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.	affected by the proposed power line development.
18	The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from i. a watercourse.	The proposed development corridor crosses thirty two wetlands that may be affected by the proposed power line development.
Government Notice. R546- Listing Notice 3 of 2010		
14	The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation (a) In Northern Cape: i. All areas outside urban areas.	The proposed project will include the removal of more than 5 hectares of vegetation where 75% or more of the vegetation constitutes indigenous vegetation

1. Feasible and Reasonable Alternatives

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

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

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

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

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations

and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

IMPORTANT: Motivation for No Alternatives

The specific purpose of the proposed development is to evacuate electrical energy from the Solar Energy Plant. However, due to the space constraints on Portion 0 (remaining extent) of the Plaas 267, no on-site alternatives are proposed for the development. The proposed new power line is restricted by the approved Solar Energy Plant components which occupies most of the developable land leaving little space for maneuverability. That being said, the existing 132kV power line that divides Portion 0 (remaining extent) of the Plaas 267, routes through the approved location for the CSP Plant which necessitates the decommissioning and re-routing of the power line. The re-routed power line can therefore only run along the south eastern and south western boundary of the farm. Additionally, the new proposed power line on-site suffers the same space constraints and will therefore also mainly be restricted to the south eastern and south western boundary of the farm (except where routing to switchyards).

Following the specialist investigations and collection of project information, it has been evaluated that it will not be feasible and reasonable to have alternatives for the proposed development. The main reasons for the lack of alternatives in this application are as follows:

PROPERTY ALTERNATIVES

The proposed development is intended be situated on Portion 0 (remaining extent) of the Plaas 267 where agreements have been negotiated with the landowner so as to limit the potential impact on other surrounding Interested and Affected Parties (IA&Ps). Additionally, the proposed development needs to be located as close as possible to where the components of the Solar Energy Plant are to be constructed for feasibility reasons. Moreover, in order to further limit and mitigate potential environmental impacts proposed by the development it is recommended to contain the development infrastructure to a single area of impact i.e. the Project Site and the existing 132kV power line servitude area. Impacting on alternative properties is therefore not investigated as it would not be feasible to position the proposed development on another property in order to satisfy the criteria of a property alternative. Secondly, additional adverse environmental and social impacts can be expected to occur if the surrounding areas, where there are currently no impacts, are now impacted on by the development. Hence, impacts should be limited to the affected property and not the surrounding areas.

ACTIVITY ALTERNATIVES

As previously mentioned, the purpose of the proposed development is to evacuate electricity from the approved Solar Energy Plant development on Portion 0 (remaining extent) of the Plaas 267 to the country's electrical network. A feasible and reasonable activity alternative therefore cannot be considered.

DESIGN ALTERNATIVES

Various tower type alternatives could potentially be considered. These include steel monopole tower structure, steel lattice structures and wooden H-pole structures. However, each tower design type will have very little to no variation in environmental impacts between the different tower design types, as they will occupy relatively the same footprint size and have the same tower height. Hence, design alternatives are not considered.

In terms of the proposed on-site power line on Portion 0 (remaining extent) of the Plaas 267, space constraints limit the proposed power lines to a single line as the approved Solar Energy Plant occupies the larger part of the developable area of the Project Site.

In terms of the proposed off-site power line exiting Portion 0 (remaining extent) of the Plaas 267 to the west towards the Olien Substation, there is currently an existing power line that runs to the substation. It is therefore intended that the proposed power line will runs in parallel to the existing power line to limit the amount of potential environmental impacts; this is common practice for Eskom, to route power lines where an existing network is present. This is done based on the fact that it not only limits environmental impacts but it is also more feasible in terms of maintenance and repairs. Additionally, positioning the proposed power line adjacent to an existing network will limit the impact to surrounding landowners that are currently not subjected to the impacts associated with power lines. It must be noted however that a 1km wide corridor will however still form part of the assessment of the proposed power line.

TECHNOLOGY ALTERNATIVES

The purpose of the proposed development is to excavate electricity generated by the approved Solar Energy Plant developments on Portion 0 (remaining extent) of the Plaas 267 to the country's electrical network. There are no technology alternatives for the proposed development as it is the only means to excavate power from the Solar Power Project as authorized by the DEA.

OPERATIONAL ALTERNATIVES

No operation alternatives can be investigated for the proposed development as there are no other options available to consider for the method of supplying electricity to the national grid.

CONCLUSION

Given the above motivation, no feasible and reasonable alternatives could be proposed for assessment. However, a 1km corridor was provided for assessment. The reason being, that it is likely that the proposed power line may need to manoeuvre for the final route due to environmental and technical reasons. The "No-go" option has however been assessed.

a) Site alternatives

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

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

In the case of linear activities:

Alternative:	Latitude (S):	Longitude (E):
Alternative S1 (preferred)		
▪ Starting point of the activity	28°17'12.77"S	23°47'58.81"E
▪ Middle/Additional point of the activity	28°18'17.42"S	23°44'6.48"E
▪ End point of the activity	28°19'56.22"S	23°37'24.28"E
Alternative S2 (if any)		
▪ Starting point of the activity		
▪ Middle/Additional point of the activity		
▪ End point of the activity		
Alternative S3 (if any)		
▪ Starting point of the activity		
▪ Middle/Additional point of the activity		
▪ End point of the activity		

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

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

b) Lay-out alternatives

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

Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

c) Technology alternatives

Alternative 1 (preferred alternative)
Alternative 2
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” option addresses the scenario of the status-quo remaining the same, with no development on the proposed site. Meaning that if the proposed development doesn’t take place, there will be no strengthening of electricity in the country’s network as the proposed development will not be able to evacuate electricity from the Limestone Solar Thermal Energy Plant to the country’s network. Therefore, the need of the project should be considered.

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

2. Physical Size of the Activity

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

Alternative: **Size of the activity:**

Alternative A1[1] (preferred activity alternative)	m^2
Alternative A2 (if any)	m^2
Alternative A3 (if any)	m^2

or, for linear activities:

Alternative:	**Length of the activity:**
Alternative A1 (preferred activity alternative)	Approximately 26 km
Alternative A2 (if any)	m
Alternative A3 (if any)	m

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)	32m servitude
Alternative A2 (if any)	m^2
Alternative A3 (if any)	m^2

3. Site Access

Does ready access to the site exist?	YES
If NO, what is the distance over which a new access road will be built	Existing roads/farm tracks are to be used where possible.

Describe the type of access road planned:

The type of the road will be via the existing dirt road. This has already been approved for the Solar Energy Plant (DEA Ref. Limestone CSP DEA Ref. 12/12/20/2646; Wilger PV DEA Ref. 12/12/20/2649; Arriesfontein PV 1 DEA Ref. 12/12/20/2648).

An application was submitted to the Northern Cape Department of Roads & Public Works, with respect to accessing the Project Site from the Divisional Road 3393. Access as presented in the application was granted to the Holder of the Environmental Authorisation of the PV Power Plant (SolarReserve) and this access will be extended to the Holder of the EA for the OHL – supplementary infrastructure to the Solar Energy Power Plant.

Existing tracks will be utilised on the Project Site at all times, where tracks are decommissioned new tracks will be constructed were required.

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

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

4. 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).

5. 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 route plan for the proposed power line alignment is appended hereto as **Appendix A**. A3 Maps can also be found in **Appendix J2**.

6. Sensitivity Map

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

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

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

Various sensitivity maps for the proposed power line alignment are appended hereto as **Appendix A**. A3 Maps can also be found in **Appendix J2**.

7. 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.

Photographs taken along the proposed route and the proposed switchyard station are appended hereto as **Appendix B**. Key features of the site are depicted in the site photographs.

8. 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.

The power line will consist of a series of towers located approximately 100-200m apart, depending on the terrain and soil conditions. It is anticipated that the Steel Pole tower type (e.g. ESKOM D-DT 7641, D-DT 7649) will be used in combination with the Steel Lattice towers at bend points and where greater distances need to be spanned.

The Single Steel Pole tower type is between 18m and 25m in height and the Steel Lattice tower type is between 25m and 29m in height. Illustrations of the proposed are appended hereto in **Appendix C**.

9. Activity Motivation

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

1. **Is the activity permitted in terms of the property's existing land use rights?**	**YES**		Please explain
In order to ensure that the activity is permitted in terms of the property's land use rights a rezoning application was submitted and approved by the local municipality.			
2. **Will the activity be in line with the following?**			
(a) **Provincial Spatial Development Framework (PSDF)**	**YES**		Please explain
The proposed project falls within the Northern Cape Province. The main aim of the Spatial Development Framework (SDF) for the Northern Cape Province is to build a prosperous sustainable growing economy, to eradicate poverty and improve social development within the Northern Cape Province. The SDF is one of the fundamental implementation instruments, which provides the spatial dimensions for achieving the strategies of the province. One such, strategy is to ensure that citizens have access to electricity (SDF Northern Cape Province, 2012). It is also within the policy of the SDF is to ensure the provision of electricity in the Kgatelopele Local Municipality and the ZF Mgcawu District Municipality and to improve the network.			
(b) **Urban edge / Edge of Built environment for the area?**		**NO**	Please explain
The proposed development will not be situated at an Urban edge or the edge of a built area.			
(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?).**		**NO**	Please explain
The proposed development is situated in the jurisdiction of the Kgatelopele Local Municipality within the ZF Mgcawu District Municipality. The Integrated development Plans (IDPs) for the above mentioned local municipality has identified electricity as one of the primary needs within the area.			
(d) **Approved Structure Plan of the Municipality**		**NO**	Please explain
The proposed development is for service infrastructure and will thus not have any bearing on the Municipalities' Structure Plans.			
(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?)**		**NO**	Please explain

The proposed development would not compromise the integrity of the environmental management priorities for the area. No environmental fatal flaws were identified and it was established that the impacts can be suitably mitigated. In addition, the development would result in socio-economic benefits for the area at large.			
(f) **Any other Plans (e.g. Guide Plan)**	**YES**		Please explain
The proposed development is to evacuate energy from a renewable energy generating facility by an Independent Power Producer (IPP). According to the Guidelines on EIAs for Facilities to be Included in the Electricity Response Plan, the project forms part of the National Electricity Response Plan (NERP).			
3. **Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?**	**YES**		Please explain
As mentioned above, the Integrated Development Plan (IDPs) for the Kgatelopele Local Municipality and the ZF Mgcawu District Municipality has identified electricity as a service delivery need and has acknowledged various strategies to improve the electricity supply (IDP ZF Mgcawu District Municipality (Siyanda District Municipality) 2013-2014). The ZF Mgcawu District Municipality delivery targets are to maintain electricity provision and to ensure an uninterrupted good quality electricity supply. In this way the proposed development is aligned with the priority projects and programmes identified within the IDPs for the local and district municipalities.			
4. **Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)**	**YES**		Please explain
The proposed development could improve the lives of the local communities by assisting Eskom in supplying electricity to them. Local employment opportunities could occur during the construction phase of the proposed power line and the associated infrastructures. The development would act as a catalyst, promoting economic growth, thus providing future opportunities for the surrounding communities.			
5. **Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)**	**YES**		Please explain
The proposed development will contribute to electricity services and will not require additionally services for the operation. Therefore, no comment in this regard is required.			

6. **Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)**	**YES**		Please explain
The proposed development will contribute to the provision of electricity within the municipality. All relevant municipalities will be made aware of the project and will be provided with the opportunity to comment on the proposed development as well as the DBAR. This will be contained in **Appendix I** for the Final Basic Assessment Report (FBAR).			
7. **Is this project part of a national programme to address an issue of national concern or importance?**	**YES**		Please explain
The proposed project forms part of the country's strategies to meet future energy consumption requirements through the use of renewable energy. This is significant, as South Africa is one of the largest emitter's of greenhouse gases (GHG) in Africa and one of the most carbon emission-intensive countries in the world. Despite the worldwide concern regarding GHG emissions and climate change, South Africa continues to rely heavily on coal as its primary source of energy, while most of the countries renewable energy resources remain largely untapped (DME, 2003). Coupled with this, is the growing demand for electricity in South Africa. As the demand for electricity grows, so too the awareness of environmental impacts, climate change and the need for sustainable development. There is therefore an increasing need to establish a new generation capacity in South Africa within the next several years. As one of its strategies to meet future energy consumption requirements, the country is opting for the use of renewable energy technologies, which is fast becoming an important energy option for South Africa. According to Eskom, the demand for electricity in South Africa has been growing at approximately 3% per annum. This factor fueled by increasing economic growth and social development within Southern Africa, is placing increasing pressure on South Africa's existing power generation capacity. In this way, the proposed development will help meet the increasing demand for electricity by feeding energy onto the grid.			
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**		Please explain
The construction and operation of the proposed Limestone 1 Power line will not have significant visual impacts further than 1km. It will be visible against the background of PV panels and the Central Receiver Tower of the CSP which in itself impose more significant visual impacts. The power line is associated with the approved Solar Energy Power Plant as a land use and therefore does not stand in contrast thereto.			

9. **Is the development the best practicable environmental option for this land/site?**	**YES**		Please explain
There is no other means to supply electricity from the Solar Energy Plant to the Eskom grid without the use of power lines. Underground cables could be considered but this is anticipated to generate more environmental impact than the currently proposed overhead power lines. The proposed OHL will run on the project site which is already transformed and impacted on with OHL. Based on this, the proposed development is a suitable development within this context. The development will conform to the typical visual character and pattern of elements that make up the landscape form.			
10. **Will the benefits of the proposed land use/development outweigh the negative impacts of it?**	**YES**		Please explain
This would have negative implications in terms of the demand for electricity and more specifically renewable energy targets in South Africa. Should the proposed power line not go ahead it may also hinder the economic injection that the Solar Power Plant would provide for the towns of Danieslkuil, Postmasburg and Lime Acres (should it receive a license and be constructed) in the form of short term employment, long term job creation and financial injection. The absence of the proposed power line and switchyard stations would furthermore mean that the power supply in the area would not be improved nor would the power from the approved Solar Power Plant be evacuated and fed into the national electricity grid. This will have negative implications on new customers in the Kgatelopele area as well as for the South African grid as a whole. Although the impacts identified, such as visual impacts, would not occur if the project did not go ahead, the socio economic benefit of the proposed project should not be overlooked			
11. **Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?**		**NO**	Please explain
Infrastructure for service provision, as proposed, would not set a precedent for similar activities in the area at large. Should additional power lines be required in the area in the future it may be beneficial to align them parallel in order to consolidate the impacts.			
12. **Will any person's rights be negatively affected by the proposed activity/ies?**	**YES**		Please explain
The proposed development may negatively affect surrounding farms due to the change in visual character as a result of the proposed power lines. However, as the proposed power lines are proposed to follow an existing power line, the impacts are expected to be limited due to existing power line impacts.			
13. **Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?**		**NO**	Please explain
Infrastructure for service provision, as proposed, would not alter the urban edge as the proposed development is situated in a remote area roughly 32km from Danielskruil.			

14. **Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?**	**YES**		Please explain

The proposed development does not form part of the 17 Strategic Integrated Projects (SIPS). However, the proposed development would contribute to SIP number 8 – Green energy in support of the South African economy and 9 – Electricity generation to support socio-economic development. Amongst others, the project seeks to improve electricity in the area (Provincial and Local Government conference: A Summary of the Infrastructure Plan, 2012). The proposed development would therefore indirectly contribute to SIP number 8 and 9, which involves the supporting of the South African economy and the electricity generation to support the socio-economic development in accordance with the Integrated Resource Plan (IRP2010).

15. **What will the benefits be to society in general and to the local communities?**	Please explain

Electricity provision in South Africa is a critical issue. It is impossible to create an economically sound country without a secure and reliable energy source. As mentioned above, the proposed project forms part of the country's strategies to meet future energy consumption requirements by feeding energy into the national grid. The increased energy will encourage economic growth and may also promote residential and urban development, which in turn may provide job opportunities in various communities.

The proposed development will benefit society by improving the reliability of the electricity supply in the Daniëlskuil and the surrounding townships. A stable electricity supply will have a positive impact in the area and could promote economic growth. In addition, the proposed development could improve the lives of the local community by assisting the Local Government in providing electricity to them. Local employment opportunities would also be created during the construction phase.

16. **Any other need and desirability considerations related to the proposed activity?**	Please explain

As mentioned above the project is needed in order to improve the electricity supply as well as to ensure reliable and sustainable electricity supplies in the area. The activity will furthermore promote economic growth on a local and national scale.

17. **How does the project fit into the National Development Plan for 2030?**	Please explain

The National Development Plan sets out various goals in order to eliminate poverty and reduce inequality by 2030 (National Development Plan, 2011). It mentions the need to create 11 million more jobs and promote economic growth and development through the provision of quality, reliable and efficient energy services by 2030. In this way, the proposed development project is aligned with the National Development Plan, as it will help promote economic growth by producing electricity to be fed into the national grid, which in turn could promote local job opportunities.

18. **Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.**
In terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) the required BA and PPP is underway for the proposed power line and associated infrastructures in order to investigate and assess any potential environmental impacts associated with the development prior to implementation. As part of the BA process several specialist studies were conducted to evaluate the actual and potential impact that the proposed development could have on the biophysical environment, socio-economic conditions and cultural heritage within the study area. In line with the general objectives of Integrated Environmental Management, the risks and consequences of the proposed development assessed and mitigation measures were recommended by each specialist in order to minimise the negative impacts and maximise the benefits of the proposed project. In addition, a thorough PPP is underway as part of the BA, which will involve consultation with various key stakeholders and organs of state, including provincial, district and local authorities, relevant government departments, parastatals and NGO's.
19. **Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.**
The principles of environmental management as set out in section 2 of the NEMA require that environmental management must place people and their needs at the forefront of development and that development must be socially, environmentally and economically sustainable. As described above; these principles have been taken into account by undertaking a thorough PPP in order to ensure that all Interested and Affected Parties (I&APs) are given the opportunity to be involved in the BA process and ultimately that their comments are taken into consideration by the DEA when reviewing the application. Several specialist studies were also undertaken to ensure that the development is sustainable and that disturbance to the environment is avoided were possible, minimised through appropriate mitigation measures and remedied via appropriate measures.

10. 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
Legislation			
National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA)	In terms of the NEMA the proposed development must be considered, investigated and assessed prior to implementation.	Department of Environmental Affairs (DEA)	1998
National Heritage Resources Act, 1999 (Act No. 25 of 1999)	In terms of section 38 of the NHRA, the responsible heritage resources authority can call for a Heritage Impact Assessment (HIA) where a power line is being proposed.	South African Heritage Resources Authority (SAHRA)	1999
National Water Act, 1998	If the development may need	Department of Water	1998

(Act 36 of 1998) (NWA)	to take place within a 500m radius of a delineated wetland a water use license is likely to be required with regards to water uses (c) and (i) of the NWA.	Affairs (DWA)	
National Environmental Management: Biodiversity Act, 2004 (Act No. of 2004) (NEMBA)	Under the NEMBA the project proponent is required to take appropriate reasonable measures to limit the impacts on biodiversity, to obtain permits if required and to invite SANBI to provide commentary on any documentation resulting from the proposed development.	Department of Environmental Affairs (DEA) and South African National Biodiversity Institute (SANBI)	2004
National Forests Act, 1998 (Act 84 of 1998) (NFA)	The proposed project may result in the disturbance or damage to a tree protected under the NFA.	Department of Agriculture, Forestry and Fisheries (DAFF)	1998
Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) (CARA)	The construction of power lines may impact on agricultural resources and vegetation on the site. The CARA prohibits the spreading of weeds and prescribes control measures that need to be complied with in order to achieve this.	Department of Agriculture, Forestry and Fisheries (DAFF)	1983
National Road Traffic Act, 1996 (No. 93 0f 1996)	All the requirements stipulated in the NRTA regarding traffic matters will need to be complied with during the construction and operational phases of the proposed power line.	South African National Roads Agency Limited (SANRAL)	1996
Regulations			
NEMA EIA 2010 Regulations	In terms of the EIA 2010 Regulations, a basic assessment process is required for this proposed project.	Department of Environmental Affairs (DEA)	2010
Guidelines			
ZF Mgcawu District Municipality IDP	Each municipality is required to produce an IDP which	ZF Mgcawu District Municipality	2013/2014

(Kgatelopele Local Municipality)	would address pertinent issues relevant to their municipality. Common concerns include municipal transformation and development, and service delivery and infrastructural development. With regards to the latter, electricity, amongst other municipal services, is highlighted as a priority issue warranting attention, in particular the provision of access to electricity to affected communities and the improvement of the electricity infrastructure (mini-subs, cables).		
Protected species – Provincial Legislation	The proposed project may impact on certain animals and plant species that are under threat or which are already considered to be endangered. The provincial environmental authorities are responsible for the issuing of permits in terms of this legislation.	Northern Cape Department of Environment and Nature Conservation (NC DENC)	
Integrated strategic Electricity planning (ISEP), 2005	The ISEP provides a framework for Eskom to investigate a wide range of new supply-side and demand-side technologies with a view to optimising investments and returns.	Eskom	2005

11. Waste, Effluent, Emission and Noise Management

a) Solid waste management

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

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

All solid waste collected shall be disposed of at registered/licensed landfill site. Skip waste containers and waste collection bins will be maintained on site and the contractor will arrange for them to be collected regularly and transported to the licensed landfill site. Under no circumstances will waste be burned or buried on site.

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

All solid waste will be disposed of at a licensed/registered landfill site. Where a registered waste site is not available close to the construction site, the Contractor shall provide a method statement with regard to waste management.

Will the activity produce solid waste during its operational phase?	YES- there is a chance that some maintenance involved which may result in the removal of minimal solid waste.
If YES, what estimated quantity will be produced per month?	Minimal

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

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

N/A

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

N/A

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

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

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

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

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

b) Liquid effluent

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

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

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

If YES, provide the particulars of the facility:

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

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

Waste water will not be generated

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other that exhaust emissions and dust associated with construction phase activities?		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:

Other than minor exhaust emissions from construction vehicles during the construction phase and dust associated with construction phase activities, the activity will not release emissions into the atmosphere.

d) Waste permit

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

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

e) Generation of noise

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

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

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

Noise will be generated during the construction phase. This impact is transient and is unlikely to be heard by many noise receptors due to the limited human habitation in the area. The impact of the project on noise does therefore not warrant a specialist noise impact assessment.

During the operational phase the power line will generate a low hissing noise, known as corona. This noise will vary depending on the weather conditions and in dry conditions; the noise level will be comparative with the usual ambient noise level in the environment.

12. 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:	litres
Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?	Yes - only once the final alignment is established a final walk-down study will be conducted for accurate in-

field delineation and to identify if a water use license will be required.

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

13. Energy Efficiency

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

The proposed development is for a power line and therefore will not require energy and need to be energy efficient.

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

The 132kV overhead distribution power line is required to connect the proposed Limestone CSP / Arriesfontein PV facilities of the Solar Power Plant to the National Grid once the power plant has been constructed. The proposed power line will serve to evacuate the electricity generated by the Limestone CSP / Arriesfontein PV facilities of the Solar Power Plant. Energy efficiency measures in this regards are not applicable as the voltage required for the short distance distribution wiring is considerably low. The project also forms part of the country's strategies to meet future energy consumption requirements through the use of renewable energy.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

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

Section B Copy No. (e.g. A): ☐

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

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

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

A Declaration of Interest for each specialist is included in **Appendix I** and all specialist reports are included in **Appendix D**.

Property description/physical address:

Province	Northern Cape Province
District Municipality	ZF Mgcawu District Municipality
Local Municipality	Kgatelopele Local Municiaplity
Ward Number(s)	4
Farm name and number	Portion 0 (remaining extent) of the Plaas 267
Portion number	0
SG Code	C00700000000026700000

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:

In terms of local legislation the Remainder of Plaas 267 (Arriesfontein) the property was granted rezoning approval from the Kgatelopele Local Municipality on 22 July 2013.

An application was furthermore submitted to the DAFF for the rezoning of the property from "Agriculture 1 to Special Zoned Mixed Use Agriculture and Secondary Use Renewable Energy", under the Subdivision of Agricultural Land, Act 70 of '70. This application is currently still being reviewed and evaluated by the DAFF Committee.

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 – This has been applied for and approved by the Local Municipality.

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

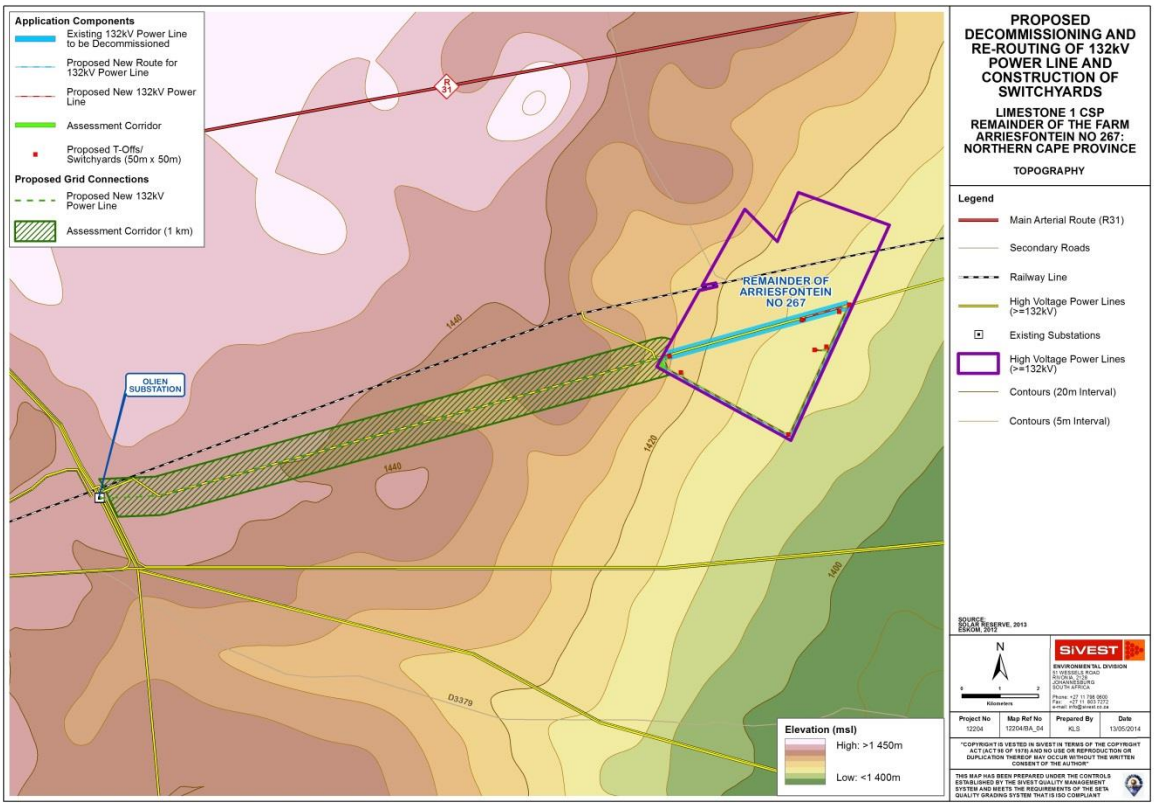

Figure 6: Topography Map

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**	**x**	2.9 Seafront	

3. Groundwater, Soil and Geological Stability of the Site

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

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

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

4. Groundcover

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

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

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

5. Surface Water

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

Perennial River		NO	
Non-Perennial River		NO	
Permanent Wetland		NO	
Seasonal Wetland	YES - Thirty two (32) wetlands were identified which falls within or partially within the 1km assessment corridor and on Portion 0 (remaining extent) of the Plaas 267 of proposed power line corridor. See **Appendix D3** for the Wetland Specialist Report.		
Artificial Wetland		NO	
Estuarine / Lagoonal wetland		NO	

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)

Landuses are shown in **Figure 7** below which indicate predominant landuses for the study area.

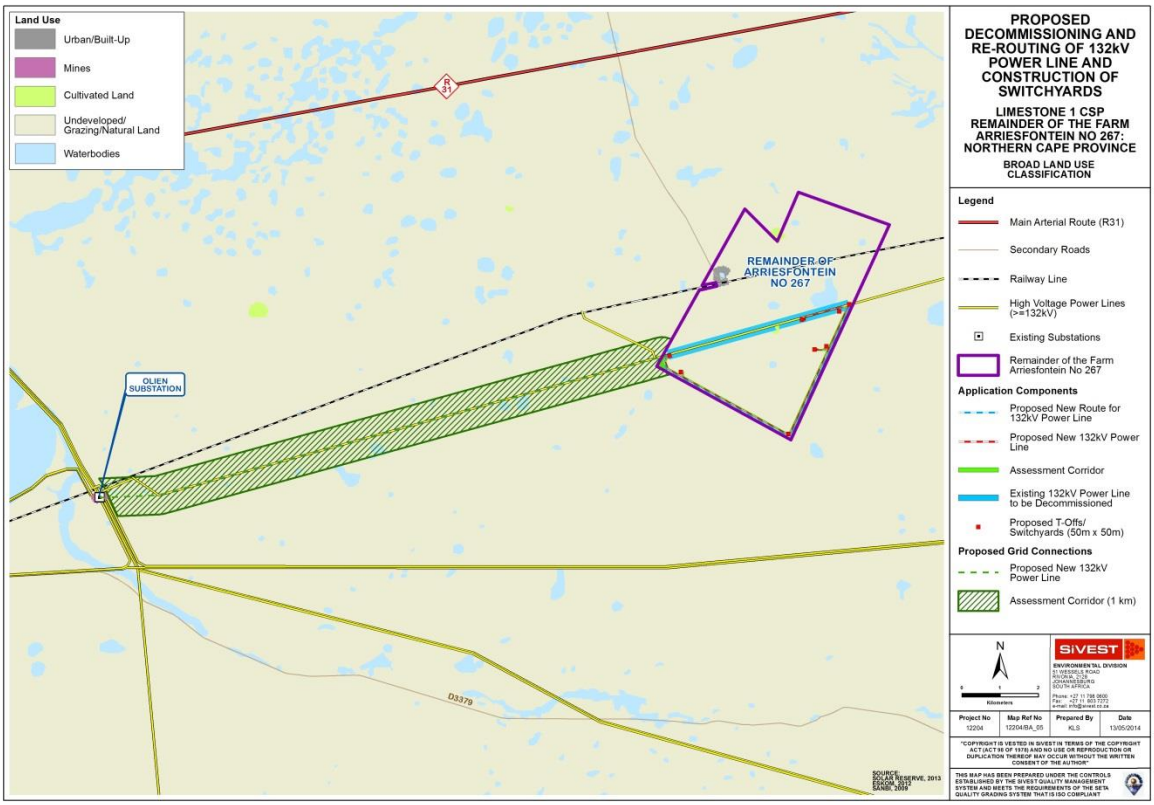

Figure 7: Landuse Map

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

The proposed development will cross over the railway line. Spoornet/ Transnet will be contacted and kept abreast with all project proceedings. Furthermore, Spoornet/ Transnet are there pre-identified stakeholder; they will be afforded an opportunity to comment and to raise concerns regarding the crossing of the railway line. However, all mitigation measures that were suggested by various specialists will be implemented.

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

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

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

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

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

N/a

7. Cultural/Historical Features

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:	YES	
One (1) heritage site was identified which is associated with a low density Later Stone Age material with no context and of low significance graded as Grade 4C. See **Appendix D5** for findings.		

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:

One (1) heritage site was identified which is associated with a low density Later Stone Age material with no context and of low significance graded as Grade 4C. See **Appendix D5** for findings.

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

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

8. Socio-Economic Character

a) Local Municipality

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

Level of unemployment:

The Kgatelopele Local Municipality had a population of at least 15 447 in the year 2001 with at least

1709 unemployed people and 4086 people who were not economically active, making the unemployment rate high.

Economic profile of local municipality:

The proposed development is located within the Kgatelopele Local Municipality (KLM) that forms part of the ZF Mgcawu (Siyanda) District Municipality of the Northern Cape Province. The KLM includes areas as Daniëlskuil and Lime Acres etc, which is about 80% urbanized. These towns have experienced a steady growth due to the mining activities (diamonds and lime) in its immediate vicinity. The area is also known for the extensive sheep and cattle farming but its tourism potential is regarded as being undeveloped. The employment in the municipality is concentrated in the mining sector (1061jobs), followed by the manufacturing (684), private households (500),

Level of education:

The educational level within the Kgatelopele Local Municipality has a rate of46.80% of people with no education i.e. No schooling 12.20%, high education 9.10% and matric 25.50%.

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	Approximately R 25 Million
What is the expected yearly income that will be generated by or as a result of the activity?	Unknown
Will the activity contribute to service infrastructure?	YES [redacted]
Is the activity a public amenity?	[redacted] NO
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	Approximately 40 people
What is the expected value of the employment opportunities during the development and construction phase?	Unknown
What percentage of this will accrue to previously disadvantaged individuals?	60-90 %
How many permanent new employment opportunities will be created during the operational phase of the activity?	0-2 - this is a short term initiative
What is the expected current value of the employment opportunities during the first 10 years?	Unknown – the project will stimulate economic development.
What percentage of this will accrue to previously disadvantaged individuals?	Unknown - Eskom will own and get the value of the power line.

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)

<table>
<tr><th colspan="4">Systematic Biodiversity Planning Category</th><th>If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan</th></tr>
<tr><td rowspan="3">Critical Biodiversity Area (CBA)</td><td rowspan="3">Ecological Support Area (ESA)</td><td rowspan="3">Other Natural Area (ONA)</td><td rowspan="3">No Natural Area Remaining (NNR)</td><td>None of the systematic biodiversity planning categories are associated with the proposed development site.</td></tr>
<tr><td>None of the systematic biodiversity planning categories are associated with the proposed development site.</td></tr>
<tr><td>None of the systematic biodiversity planning categories are associated with the proposed development site.</td></tr>
</table>

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 practices, presence of quarries, grazing, harvesting regimes etc).**
Natural	95%	Very little alien invasive plants were identified on site
Near Natural (includes areas with low to moderate level of alien invasive plants)	0%	

Degraded (includes areas heavily invaded by alien plants)	0%	
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	5%	A small proportion of the study site is transformed into railway, power lines and residential areas.

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)	Least Threatened	Wetland (including rivers, depressions, channelled and unchannelled wetlands, flats, seeps pans, and artificial wetlands)	
		YES	

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)

Biodiversity

- The immediate area exhibits low levels of transformation, comprising extensive areas of natural habitat, categorised as Shrubland and Bushland.
- Overall two (2) macro habitat types and habitat variations were found including: **Natural Woodland Habitat** (including Open Woodland (*Searsia lancea*) of Medium floristic sensitivity; Closed Shrubveld (*Tarchonanthus camphoratus*) of Medium floristic sensitivity); and Open Woodland (*Olea europaea*) of Medium-high floristic sensitivity; and **Endorheic Pans** (Medium-high floristic sensitivity).
- A recorded diversity of 89 plant species was established during the field investigations represented by five (5) tree species and fourteen (14) shrub species. A well-developed herbaceous stratum is represented by forty five (45) forbs and twenty (20) grass species.
- No plant species that are included in any of the threatened conservation categories were recorded. The following protected tree species were however present in the study area and are protected under the National Forests Act of 1998; *Acacia erioloba* (occasional, < 3 individuals), and *Olea europaea* subsp. *africana* (abundant).
- The presence of 80 animal species was confirmed during the original field investigations by means of visual sightings, tracks, scats, burrows and species-specific calls as well as infra-red camera stations. The following results were recorded: eight (8) invertebrate species; one (1) frog species; eight (8) reptile species; forty five (45) bird species; and eighteen (18) mammal species.
- A total of 106 RD animals are known to occur in the Northern Cape Province (dragonflies, damselflies, butterflies, frogs, reptiles, birds and mammals). An assessment of the Probability of Occurrence (PoC) for these animals yielded the following probabilities respectively: seventy two (72) species have a low PoC; eleven (11) species have a moderate-low PoC; nine (9) species have a moderate PoC; five (5) species have a moderate-high PoC; and nine (9) species have a high PoC.
- The natural woodland habitats of the study area have a medium faunal sensitivity. The Endorheic pans of the study area are regarded to have a medium-high faunal sensitivity.

Wetlands

- Thirty two (32) wetlands were identified along the proposed power line corridor which varies from size.
- The proposed power line route may cross through three (3) pan wetlands along the route and it may enter into the buffer zone around a further three (3) delineated wetlands.
- The required switchyard on the eastern end of the route will also be located well within the 50m buffer zone of a small pan.

SECTION C: PUBLIC PARTICIPATION

A Public Participation Report has been compiled, outlining the detailed public participation process undertaken as part of this basic assessment. The Public Participation Report is included in **Appendix E**.

1. Advertisement and Notice

Publication name	Diamonds Field Advertisers and Volksblad	
Date published	Thursday, 12th September 2013	
Site notice position	**Latitude**	**Longitude**
	28°16'48.35"S	23°46'05.72"E
	28°13'41.09"S	23°44'43.01"E
Date placed	12th September 2013	

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

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

2. Determination of Appropriate Measures

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

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

A full stakeholder database is attached hereto as **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.

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

3. Issues Raised by Interested and Affected Parties

Summary of main issues raised by I&APs	Summary of response from EAP
Will any power line activities take place on adjacent properties?	With respect to the Wilger proposed powerline, no there will not be any activities on adjacent properties. However, with the Limestone 1 and 2 proposed power line, yes there will be construction on adjacent properties.
If so, what will the activities involve and how will it affect me?	It is possible that a small section of the proposed power line planned for the Limestone 1 - 132 kV power line will indeed traverse the southernmost corner of the farm Hartebeestput 266.
It is requested that a meeting is held with SolarReserve prior to construction activities taking place.	In principle, Solar Reserve has no problem to meet your request but is of the opinion that it is premature as their project has not yet received authorisation from the Department of Energy. Should the project be authorised, a site visit will be arranged with you and the adjacent landowners.
Approval for the proposed development is granted subject to conditions (Telkom).	Approval and conditions are duly noted and will be adhered to
No objections are issued in terms of the proposed development (Civil Aviation Authority).	No objections towards the proposed development are duly noted.
Risk assessment shows that the proposed development is low risk in terms of the Square Kilometre Array (SKA). Conditions proposed are to be adhered to.	Proposals are duly noted and will be adhered to.
Attendance to the proposed public meetings may not be possible however Air Traffic Navigation Services (ATNS) are to be kept abreast with any developments in terms of the proposed development.	ANTS will be kept up to date with the development of the proposed development.

4. Comments and Response report

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

The Comments and Response Report (C&RR) is included in **Appendix E3**.

5. Authority Participation

Authorities and organs of state identified as key stakeholders:

A full stakeholder database is attached hereto as **Appendix E5**.

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

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

Proof that the Authorities and Organs of State received written notification of the proposed activities in included in **Appendix E4**.

6. Consultation with Other Stakeholders

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

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

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

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

A list of registered I&APs is included in **Appendix E5**. Full detail of the correspondence and minutes of meetings are included in **Appendix E6**.

A map indicating affected surrounding properties is shown in **Figure 8** below.

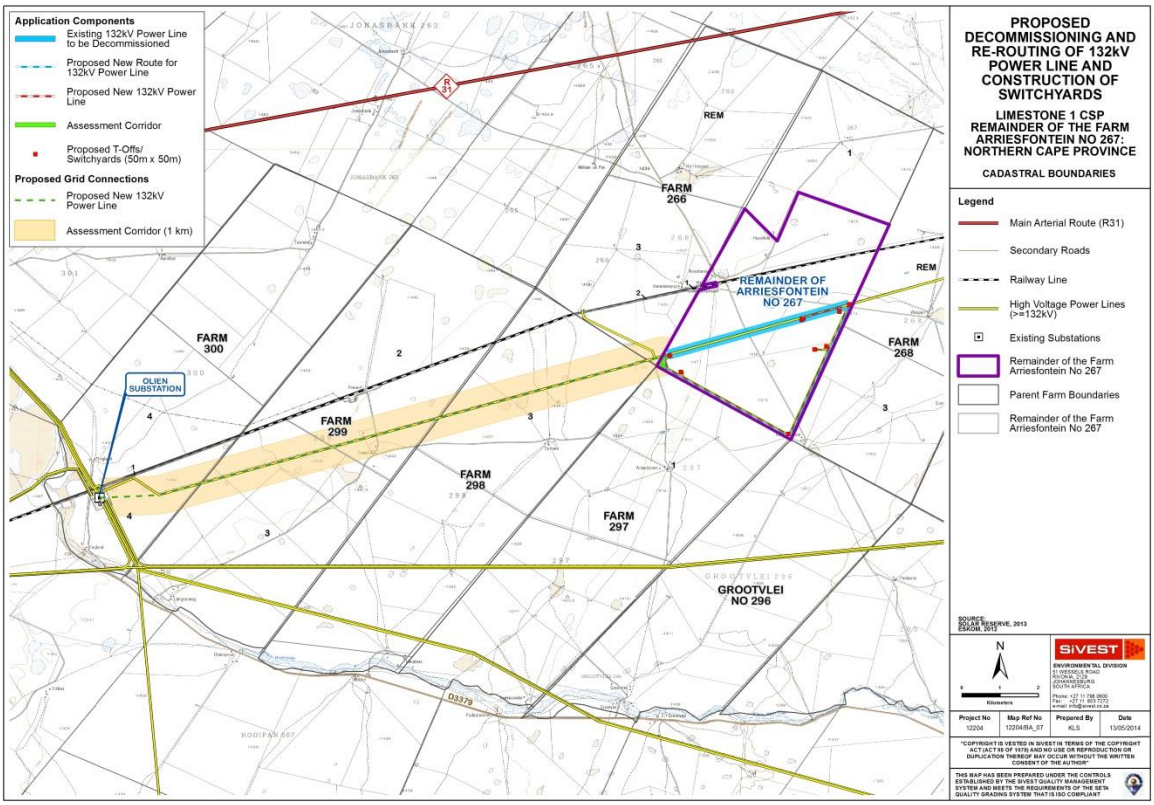

Figure 8: Surrounding Properties Affected by the Proposed Development

SECTION D: IMPACT ASSESSMENT

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

1. Impacts that may result from the Planning and Design, Construction, Operational, Decommissioning and Closure Phases as well as Proposed Management of identified Impacts and Proposed Mitigation Measures

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

Alternative A

Activity	Impact summary	Significance	Proposed mitigation
Biodiversity	***Direct impacts:***		
	Clearance of natural habitat – destruction of plant taxa of conservation importance (protected trees) – Construction Phase	Medium negative	While the western portions of the proposed lines do not exhibit significant numbers of protected tree species, the western sections comprises a high density of large protected tree individuals. A final walkthrough should be conducted prior to the construction phase and all protected tree individuals marked. The fairly unique nature of this habitat warrants the protection of these trees from development. It is therefore strongly recommended that these trees not be damaged in any way during the construction period and that activities be planned around these locations; this is an imperative aspect that need to be implemented during the Planning Phase of the project and need to be included in the RoD as an authorization requirement. Evidence from existing power lines indicates that removal of all vegetation is not a prerequisite for construction or operational purposes and the in situ protection of these individuals should therefore be possible. It is emphasised that these species, also persisting in a semi-arid environment, are extremely slow growing and recovery subsequent to a disturbance event will take a particularly long time. However, unavoidable impacts will inevitably occur; these events should however be minimised. Permits for the disturbance or removal of protected trees need to be submitted to DAFF and NC DENC prior to any activity affecting protected trees. In addition, new regulations promulgated by NC DENC require the permitting of all vegetation that will be removed or damaged during the construction process.
	Destruction of plant taxa	Medium	Identified and marked protected trees

Activity	Impact summary	Significance	Proposed mitigation
	of conservation importance (protected trees) during periodic maintenance operations – Operation Phase	negative	should be excluded from all periodic maintenance activities. These individuals should be left intact and not damaged. Evidence from existing power lines indicates that total clearance of all woodland vegetation is not a prerequisite for operational purposes and the protection of these species during period maintenance events should therefore be possible. However, unavoidable impacts will inevitably occur. Permits for the disturbance or removal of protected trees need to be submitted to DAFF and NC DENC prior to any activity affecting protected trees. In addition, new regulations promulgated by NC DENC require the permitting of all vegetation that will be removed or damaged during the construction process.
	Clearance of natural habitat – accidental death of conservation important animals – Construction Phase	Medium negative	The possibility of animals of conservation importance persisting in the study area is regarded low, the absence of all animals, particularly animals with a conservation importance should nonetheless be confirmed prior to and during construction activities. Avoidance of areas where conservation important animals are likely to persist, such as the endorheic pans, should be avoided through careful planning and alignment selection. Use should be made of the existing power line servitude and all lines be placed in a single corridor, rather than spreading the impact, which is likely to result in increased impact significance.
	Removal of vegetation within the servitude – accidental death of conservation important animals during periodic maintenance activities – Operation Phase	Low negative	The likelihood of animals of threatened animals persisting in the study area is low, the absence of all animals, particularly animals with a conservation importance should be confirmed periodic maintenance activities
	Clearance of natural vegetation within the	Medium negative	Areas of medium-high sensitivity should ideally be excluded from the

Activity	Impact summary	Significance	Proposed mitigation
	approved servitude for construction purposes, road construction, laydown areas, temporary storage areas, etc. – Construction Phase		development as far as possible by means of an alignment selection process, with particular reference to endorheic pans. Unavoidable impacts on the *Olea europaea* woodland areas should be ameliorated by means of construction options that prevent damage to these individuals. Evidence from existing power lines indicates that total clearance of all woodland vegetation is not a prerequisite for construction purposes and the protection of these areas during period maintenance events should therefore be possible. However, unavoidable impacts will inevitably occur. Permits for the disturbance or removal of protected trees need to be submitted to DAFF and NC DENC prior to any activity affecting protected trees. In addition, new regulations promulgated by NC DENC require the permitting of all vegetation that will be removed or damaged during the construction process.
	Clearance of natural vegetation within the approved servitude during periodic maintenance periods – Operation Phase	Medium negative	The application of minimal maintenance approach should be followed within areas of medium-high sensitivity. Evidence from existing power lines indicates that total clearance of all woodland vegetation is not a prerequisite for operational purposes and the protection of these areas during period maintenance events should therefore be possible. However, unavoidable impacts will inevitably occur. Permits for the disturbance or removal of protected trees need to be submitted to DAFF and NC DENC prior to any activity affecting protected trees. In addition, new regulations promulgated by NC DENC require the permitting of all vegetation that will be removed or damaged during the construction process.
	Clearance of natural	Medium	The application of minimal damage

Activity	Impact summary	Significance	Proposed mitigation
	vegetation within the approved servitude during decommissioning activities – Decommissioning Phase	negative	approach should be followed within areas of medium-high sensitivity during the decommissioning phase, similar to constructional recommendations. However, unavoidable impacts will inevitably occur. Permits for the disturbance or removal of protected trees need to be submitted to DAFF and NC DENC prior to any activity affecting protected trees. In addition, new regulations promulgated by NC DENC require the permitting of all vegetation that will be removed or damaged during the construction process.
	Clearance of natural habitat within the approved servitude for construction purposes, road construction, etc. will lead to inevitable displacement of animals and potential conflict situations – Construction Phase	Low negative	Amelioration of this impact is particularly problematical as most animals are unpredictable in their behaviour and presence. Awareness programmes should be included as part of induction, periodic snare patrols, removal of pets and exotic invasive species from the site and sensible road use guidance is advised.
	Maintenance activities within the approved servitude, use of roads, etc. will lead to inevitable displacement of animals and potential conflict situations – Operation Phase	Low negative	Amelioration of this impact is particularly problematical as most animals are unpredictable in their behaviour and presence. Awareness programmes should be included as part of induction and sensible road use guidance is advised.
	Decommissioning of the servitude and the presence of construction vehicles and personnel will lead to inevitable displacement of animals and potential conflict situations – Decommissioning Phase	Low negative	Amelioration of this impact is particularly problematical as most animals are unpredictable in their behaviour and presence. Awareness programmes should be included as part of induction and sensible road use guidance is advised.
	Clearance of natural habitat within the approved servitude for	Low negative	Effects of this impact are inevitable with clearance of the approved servitude during the construction period. Evidence

Activity	Impact summary	Significance	Proposed mitigation
	construction purposes leads to inevitable habitat fragmentation & isolation – Construction Phase		from existing power lines indicates that the complete removal of all vegetation within the approved servitude is not necessarily a prerequisite for construction. By limiting clearance activities and implementing immediate rehabilitation and restoration activities subsequent to construction activities, effects of this impact will be ameliorated to acceptable levels.
	Indirect impacts:		
	Construction related activities, including land clearance, could potentially cause impacts in adjacent areas of natural habitat, including erosion, infestation by weeds and invasive species, etc. – Construction Phase	Low negative	The implementation of generic mitigation measures are expected to ameliorate this potential impact to acceptable levels. The proposed line should ideally be placed directly adjacent to the existing power line servitude in order to prevent the uncontrolled spread of impacts into nearby sensitive habitat types.
	Maintenance activities within the approved servitude, use of roads, etc. could potentially lead to impacts in adjacent natural habitat – Operation Phase	Low negative	The implementation of generic mitigation measures are expected to ameliorate this potential impact to acceptable levels.
	Cumulative impacts:		
	Land clearance of natural habitat will lead to incremental, and usually permanent, loss of natural habitat that might affect regional and national conservation targets – Construction Phase	Low negative	The implementation of generic mitigation measures are expected to ameliorate this potential impact to acceptable levels. Every effort must be made to ensure the minimal loss of natural habitat from construction related activities.
	Land clearance of natural habitat will lead to incremental, and usually permanent, loss of natural habitat that might affect local and regional	Low negative	The implementation of generic mitigation measures are expected to ameliorate this potential impact to acceptable levels. Every effort must be made to ensure the minimal loss of natural habitat from construction related activities.

Activity	Impact summary	Significance	Proposed mitigation
	habitat transformation and fragmentation – Construction Phase		
Avifauna	***Direct impacts:***		
	Destruction of habitat used by relevant bird species – Construction Phase	Low negative	Strict control should be maintained over all activities during construction, in particular heavy machinery and vehicle movements, and staff. It is difficult to mitigate properly for this as some habitat destruction is inevitable.
	Disturbance to relevant bird species – Construction Phase	Low negative	Strict control should be maintained over all activities during construction, in particular heavy machinery and vehicle movements, and staff. It is difficult to mitigate properly for this as some disturbance is inevitable. During Construction, if any of the Red-listed species identified in this report are observed to be roosting and/or breeding in the vicinity, the EWT is to be contacted for further instruction.
	Electrocution of birds on the power lines and in the substations – Operation Phase	Medium negative	A bird friendly tower structure must be used. It is highly recommended that the steel monopole design be used and that this incorporate the standard bird perch. If this is the case then most raptors and birds of high electrocution risk will perch well above the conductors and out of harm's way. In addition it is critical that all clearances between live and earth components are greater than 1.8 meters, as this is the dimension of the largest birds wing span. If this is the case then the impact of bird electrocution will be very minimal. Electrocutions in the proposed substation yard should not affect the sensitive bird species as they are unlikely to use the substation yards for perching or roosting. Should this become an issue the impact can be mitigated reactively using a range of insulation devices that exist and are approved by ESKOM.

Activity	Impact summary	Significance	Proposed mitigation
	Collisions of birds with the earth wires – Operation Phase	Medium negative	Line routing is critical to mitigate for this and as such the power line route should avoid crossing any highly sensitive microhabitats, for example wetlands, dams, rivers, etc. It is best practice to follow any existing lines as electrical infrastructure grouped together generally mitigates for the impact of collision by making the lines more visible. Mark sections of line with anti-collision marking devices on the earth wire to increase the visibility of the line and reduce likelihood of collisions. Marking devices should be spaced 10m apart. The sections of line that pose a concern and require marking should be identified in a site "walkthrough" by EWT once final route is decided and towers/pylons pegged.
	Indirect impacts: None identified		
	Cumulative impacts: None identified		
Wetlands	***Direct impacts:***		
	Disturbance of wetland habitat – Construction Phase	Low negative	**Where the power line crosses wetlands:** ▪ It is recommended that the proposed power line run to the north and parallel to the existing power line, and as close as possible to the existing power line. ▪ If practically possible, power line pylons should be located outside the delineated pan wetlands with the power line spanning the full width of the wetland crossings. ▪ Where this is not possible and a pylon needs to be located within the pan wetlands, the following measures should apply: o Undertake construction activities in the dry season; o No construction activity should take place within

Activity	Impact summary	Significance	Proposed mitigation
			the pans while the pans are inundated/flooded with water; o A single access route to the pylon location should be marked out and all vehicle and machinery movements limited to this single access track; o Construction activities should be limited to as small an area as possible. Vegetation clearing should only take place within the direct footprint of the excavation; o No laydown areas or temporary stockpiles should be allowed within the delineated pan wetlands or the 50m buffer; o Following completion of construction activities soil compaction should be alleviated and the disturbed area landscaped back to the natural surface profile. Any holes or ruts should be filled. Vegetation should be allowed to re-establish naturally; and o All waste should be removed off site immediately following completion of construction activities. **Where the power line passes in close proximity to wetlands:** ▪ All staff and contractors on site

Activity	Impact summary	Significance	Proposed mitigation
			should be informed about the location and sensitivity of the wetland areas on site and no access to these areas should be allowed unless authorised and supervised by the Environmental Officer. ▪ All wetland areas on site should be demarcated. The required construction servitude should also be clearly demarcated and no activities allowed to take place outside the demarcated area. ▪ Access roads to the construction sites and power line route should make use of existing roads and tracks on site as far as possible. Where new roads are required, these should be aligned to fall outside the wetlands and their buffer zone. ▪ No lay-down areas, temporary stockpiles, contractor's camps etc. may be located within any of the delineated wetlands or their 50m buffer zone. ▪ Fire should be controlled on site. If burning of wetland areas and their buffer zones is required, this should be undertaken in strict accordance with a fire management strategy compiled by a suitably qualified professional.
	Obstruction flows – Construction Phase	Low negative	▪ Undertake construction activities in the dry season. ▪ No construction activity should take place within the pans while the pans are inundated/flooded with water. ▪ A single access route to the pylon location should be marked out and all vehicle and

Activity	Impact summary	Significance	Proposed mitigation
			machinery movements limited to this single access track. ▪ Construction activities should be limited to as small an area as possible. Vegetation clearing should only take place within the direct footprint of the excavation. ▪ No lay-down areas or temporary stockpiles should be allowed within the delineated pan wetlands or the 50m buffer. ▪ Following completion of construction activities soil compaction should be alleviated and the disturbed area landscaped back to the natural surface profile. Any holes or ruts should be filled. Vegetation should be allowed to re-establish naturally.
	Increase risk of erosion – Construction Phase	Low negative	▪ If practically possible, power line pylons should be located outside the delineated pan wetlands with the power line spanning the full width of the wetland crossings. ▪ Where this is not possible and a pylon needs to be located within the pan wetlands, the following measures should apply: ▪ Undertake construction activities in the dry season; o No construction activity should take place within the pans while the pans are inundated/flooded with water; o A single access route to the pylon location should be marked out and all vehicle and machinery movements limited to this single access track; o Construction activities should be limited to as

Activity	Impact summary	Significance	Proposed mitigation
			small an area as possible. Vegetation clearing should only take place within the direct footprint of the excavation; o No laydown areas or temporary stockpiles should be allowed within the delineated pan wetlands or the 50m buffer; o Following completion of construction activities soil compaction should be alleviated and the disturbed area landscaped back to the natural surface profile. Any holes or ruts should be filled. Vegetation should be allowed to re-establish naturally; and o All waste should be removed off site immediately following completion of construction activities. **Where the power line passes in close proximity to wetlands:** ▪ All staff and contractors on site should be informed about the location and sensitivity of the wetland areas on site and no access to these areas should be allowed unless authorised and supervised by the Environmental Officer. ▪ All wetland areas on site should be demarcated. The required construction servitude should also be clearly demarcated and

Activity	Impact summary	Significance	Proposed mitigation
			no activities allowed to take place outside the demarcated area. ▪ Access roads to the construction sites and power line route should make use of existing roads and tracks on site as far as possible. Where new roads are required, these should be aligned to fall outside the wetlands and their buffer zone. ▪ No laydown areas, temporary stockpiles, contractor's camps etc. may be located within any of the delineated wetlands or their 50m buffer zone. ▪ Fire should be controlled on site. If burning of wetland areas and their buffer zones is required, this should be undertaken in strict accordance with a fire management strategy compiled by a suitably qualified professional.
	Soil compaction – Construction Phase	Low negative	▪ Undertake construction activities in the dry season to limit risk and degree of soil compaction. ▪ Construction activities should be limited to as small an area as possible. Vegetation clearing should only take place within the direct footprint of the excavation. ▪ Disturbed areas should be rehabilitated as necessary – compacted soil and disturbed soils should be ripped and landscaped to the natural surface profile.
	Maintenance activities – Operation Phase	Low negative	▪ No clearing or burning of vegetation should take place within the delineated wetlands. ▪ Access should be limited to a single access track along the power line route or to existing

Activity	Impact summary	Significance	Proposed mitigation
			farm tracks. ▪ No driving within the pan wetlands during wet periods or when the pans are inundated.
	Indirect impacts:		
	Water quality deterioration – Construction Phase	Medium negative	▪ Institute environmental best practice guidelines as per the DWA Integrated Environmental Management Series for Construction Activities ▪ Limit quantities of hazardous substances on site to the volumes used during 1 day's work ▪ Dispose of all soil contaminated due to leaks or spills as hazardous waste ▪ Waste should be stored on site in clearly marked containers in a demarcated area. All waste must be disposed of offsite.
	Cumulative impacts: None identified		
Agricultural	***Direct impacts:***		
	Loss of agricultural land (land that is no longer able to be utilized due to construction of infrastructure) – Operation Phase	Medium negative	Ensure that as little pollution or other non-physical disturbance occurs
	Indirect impacts: None identified		
	Cumulative impacts: None identified		
Heritage	***Direct impacts:***		
	During construction activity and earthmoving archaeological material could be unearthed that was previously unidentified due to its position – Construction Phase	Low negative	A heritage monitoring program that will identify finds during construction will be able to mitigate the impact on the finds through scientific documentation of finds and provide valuable data on any finds made.
	Due to the nature of the development, it is possible that some sites will be impacted and	Low negative	None

Activity	Impact summary	Significance	Proposed mitigation
	impossible to avoid in the layout plan of the project – Construction Phase		
	The possibility of uncovering significant subsurface paleontological deposits – Construction Phase	Medium negative	▪ A monitoring plan must be agreed upon by all the stakeholders for the different phases of the project focussing on the areas where earthmoving will occur. ▪ If during construction any possible finds are made, the operations must be stopped and the qualified archaeologist be contacted for an assessment of the find. ▪ Should substantial fossil remains (e.g. well-preserved fossil fish, reptiles or petrified wood) be exposed during construction, however, the ECO should carefully safeguard these, preferably in situ, and alert SAHRA as soon as possible so that appropriate action (e.g. recording, sampling or collection) can be taken by a professional palaeontologist. ▪ A management plan must be developed for managing the heritage resources in the surface area impacted by operations during construction and operation of the development. This includes basic training for construction staff on possible finds, action steps for mitigation measures, surface collections, excavations, and communication routes to follow in the case of a discovery.
	Indirect impacts: None identified		
	Cumulative impacts: None identified		
Visual	***Direct impacts:***		

Activity	Impact summary	Significance	Proposed mitigation
	Clearing of vegetation and the construction of steel towers – Construction Phase	Medium negative	The primary visual impact, namely the appearance of the power is not possible to mitigate. The tall steel structures will be impossible to hide, although the screening effect of vegetation may be applicable in some places. Considering the topography of the land and the VAC of the vegetation, very little else can be done to mitigate the visual impacts caused by these structures. The following mitigation measures are suggested: • Avoid the unnecessary removal of vegetation. • Rehabilitate cleared areas after the construction.
	Visibility of and exposure to views of steel towers and conductors at various locations and distances from the facility – Operation Phase	Medium negative	• Keep the height of the single pole steel towers at the minimum of 18m.
	Indirect impacts: None identified		
	Cumulative impacts: None identified		
Socio-economic	***Direct impacts:***		
	Impact on production and GDP – Construction Phase	Low positive	▪ Where feasible, employ local contractors during the construction period and local suppliers to maximise the benefits to the local communities.
	Impact on employment stimulus – Construction Phase	Low positive	▪ Where feasible, employ local contractors during the construction period and source from local suppliers to maximise the benefits to the local communities.
	Negative changes to the sense of place – Construction Phase	Low negative	▪ Ensure mitigation measures by various specialists are implemented where feasible.
	Impact on property of the affected land-owners and households –	Low negative	▪ Land-owners should be adequately compensated for any unforeseen damage to property

Activity	Impact summary	Significance	Proposed mitigation
	Construction Phase		or loss of assets such as livestock if it is proven to result from the construction activities ▪ Limit the movement between the construction site and the point of assembly by providing transportation. ▪ Negotiate terms and conditions that would guide construction activities on the properties, as well as behaviour and conduct of the construction crew. ▪ A pre-defined access route to the servitude should be chosen in consultation with the land owner and should be strictly adhered to by all construction vehicles and construction crew; the chosen route should follow the existing roads as far as feasible. ▪ Site clearance activities should be limited to the minimum required area to minimise potential damages to the environment and property. ▪ Construction vehicles are to follow a safe speed and should mind animals inhibiting the farms ▪ Construction activity should be undertaken only during working hours.
	Impact on production and GDP stimulus – Operation Phase	Low positive	▪ Where feasible, employ local people to maintain the servitude to localise the benefits albeit small.
	Impact on employment stimulus – Operation Phase	Low positive	▪ Residents of the local communities should be considered to maintain the servitude, if feasible.
	Impact on changes in sense of place – Operation Phase	Low negative	▪ Ensure that mitigation measure proposed by other specialists to reduce the effects on the sense of place are strictly adhered to

Activity	Impact summary	Significance	Proposed mitigation
			and implemented.
	Impact of power lines on local agriculture – Operation Phase	Low negative	▪ Site clearance activities should be limited to the minimum required area to minimise potential disturbance of agricultural land. ▪ Ensure that property owners are adequately compensated for use of their land for hosting power lines.
	Impact on property of the affected land-owners and households – Operation Phase	Low negative	▪ Ensure that property owners are adequately compensated for use of their land for hosting power lines. ▪ Ensure that the time and periods during which the maintenance of the servitude is undertaken are agreed upon with the land-owners. ▪ Ensure that the rules associated with accessing the properties for maintenance of the servitude are agreed upon with the land-owner and communicated to the maintenance crew. ▪ A pre-defined access route to the servitude should be chosen in consultation with the land owner and should be strictly adhered to by all maintenance vehicles and maintenance crew; the chosen route should follow the existing roads as far as feasible. ▪ Maintenance vehicles are to follow a safe speed and should mind animals inhibiting the farms. ▪ Maintenance activity should be undertaken only during working hours.
	Indirect impacts:		
	Impact of power lines on land values – Operation	Low negative	Ensure that land owners are adequately compensated for use of their land for

Activity	Impact summary	Significance	Proposed mitigation
	Phase		hosting power lines.
	Cumulative impacts: None identified		
No-go option			
	Direct impacts:		
	If the proposed power line and associated infrastructures is not constructed, this would have negative implications in the area as the power supplied by the plant would not be fed into to the National Grid.	N/a	N/a
	Indirect impacts:		
	If the proposed power line and associated infrastructures is not constructed, this would have negative implications in the area as the power supplied by the plant would not be fed into to the National Grid.	N/a	N/a
	Cumulative impacts: None anticipated		

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

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

2. Environmental Impact Statement

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

Alternative A (preferred alternative)

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

- Limiting adverse environmental and social impacts to surrounding areas and landowners where there are currently no impacts;
- . It is intended that the proposed power line (that will exit the Project Site on the western boundary) run parallel to the existing line in order to limit potential environmental impacts. Additionally, it is common practice for Eskom to route power lines where an existing network is present. This not only limits environmental impacts but also is more feasible in terms of maintenance and repairs. Additionally, positioning the proposed power line adjacent to an existing network will have a limited impact to surrounding landowners where currently there are no power lines or impacts to the environment. It must be noted that a 1km wide corridor will however still form part of the assessment of the proposed power line off-site.
- On-site, there are considerable space constraints on the Portion 0 (remaining extent) of Plaas 267 due to the approved Limestone Solar Thermal Energy Plant components that will be developed which restricts the proposed power line to the proposed route;
- The proposed development is activity specific, in that power lines are required to feed electricity from the approved Solar Thermal Power Plant developments on the Portion 0 (remaining extent) of Plaas 267 to the National Grid. A feasible and reasonable activity alternative therefore cannot be considered;
- Various design types for the electrical towers are proposed to be used. However, the most suitable tower design for specific location (based on topographic and other factors) will dictate the tower to be used due to technical reasons. Additionally however, the different tower types are quite similar and will have very little to no variation in environmental impacts;
- The proposed development is technology specific in that power lines are required for the proposed development;
- The proposed development is operationally specific in that the operation of power lines are required for the proposed development;
- Position of the proposed switchyards need to be next to the approved substation sites of the approved Solar Energy Plant for technical reasons; and
- Lastly, the proposed power line will be in close proximity to the Limestone Solar Thermal Energy Plant for practical and feasibility reasons.

Given the above motivation, no feasible and reasonable alternatives could be proposed for assessment. However, a 1km corridor was assessed in terms of the positioning of the power line. This was primarily done as the final routing still needs to be determined and in order to allow for potential movement of the line within this corridor to minimize environmental impacts and potential exposure.

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

CONSTRUCTION PHASE

Environmental Aspect	Impact	Duration	Likelihood of Impact	Significance of Impact
Biodiversity	Clearance of natural habitat – destruction of plant taxa of conservation importance (protected trees)	Long	Definite	Negative Low
	Clearance of natural habitat – accidental death of conservation important animals	Permanent	Possible	Negative Low
	Clearance of natural vegetation within the approved servitude for construction purposes, road construction, laydown areas, temporary storage areas, etc.	Long	Definite	Negative Low
	Clearance of natural habitat within the approved servitude for construction purposes, road construction, etc. will lead to inevitable displacement of animals and potential conflict situations	Medium	Definite	Negative Low
	Clearance of natural habitat within the approved	Medium	Definite	Negative Low

	servitude for construction purposes leads to inevitable habitat fragmentation & isolation			
	Construction related activities, including land clearance, could potentially cause impacts in adjacent areas of natural habitat, including erosion, infestation by weeds and invasive species, etc.	Long	Definite	Negative Low
	Land clearance of natural habitat will lead to incremental, and usually permanent, loss of natural habitat that might affect regional and national conservation targets	Medium	Unlikely	Negative Low
	Land clearance of natural habitat will lead to incremental, and usually permanent, loss of natural habitat that might affect local and regional habitat transformation and fragmentation	Medium	Unlikely	Negative Low
Avi-fauna	Destruction of	Long	Definite	Negative Low

	habitat used by relevant bird species			
	Disturbance to relevant bird species	Short	Possible	Negative Low
Wetlands	Disturbance and degradation of wetland habitat	Medium	Definite	Negative Low
	Obstruction of flows	Short	Possible	Negative Low
	Increased risk of erosion	Medium	Possible	Negative Low
	Soil compaction	Medium	Possible	Negative Low
	Water quality deterioration	Long	Possible	Negative Low
Agricultural Potential and Soil	Loss of agricultural land	Long	Probable	Negative Low
Heritage	During construction activity and earthmoving archaeological material could be unearthed that was previously unidentified due to its position.	Permanent	Possibly	Negative Low
	Possibility of sites being impacted and impossible to avoid in the layout plan of the project	Permanent	Possible	Negative Low
	The possibility of uncovering significant subsurface paleontological deposits	Permanent	Probable	Negative Low
Visual	Changing of the visual landscape by the clearing of vegetation and	Short	Definite	Negative Medium

	the construction of steel towers at intervals of approximately 220m, as well conductors spanning between the towers.			
Social	Impact on production and GDP	Short	Definite	Positive Low
	Impact on employment stimulus	Short	Definite	Positive Low
	Negative changes to the sense of place	Short	Definite	Negative Low
	Impact on property of the affected land-owners and households	Short	Probable	Negative Low

OPERATION PHASE

Environmental Aspect	**Impact**	**Duration**	**Likelihood of Impact**	**Significance of Impact**
Biodiversity	Destruction of plant taxa of conservation importance (protected trees) during periodic maintenance operations	Long	Definite	Negative Low
	Removal of vegetation within the servitude – accidental death of conservation important animals during periodic maintenance activities	Long	Possible	Negative Low

	Clearance of natural vegetation within the approved servitude during periodic maintenance periods	Long	Possible	Negative Low
	Maintenance activities within the approved servitude, use of roads, etc. will lead to inevitable displacement of animals and potential conflict situations	Medium	Probable	Negative Low
	Maintenance activities within the approved servitude, use of roads, etc. could potentially lead to impacts in adjacent natural habitat	Medium	Possible	Negative Low
Avi-fauna	Electrocution of birds on the power lines and in the switchyards	Long	Unlikely	Medium Negative
	Collisions of birds with the earth wires	Long	Possible	Medium Negative
Wetlands	Maintenance activities	Long	Probable	Low Negative
Agricultural Potential and Soils	None identified	None identified	None identified	None identified
Heritage	None identified	None identified	None identified	None identified
Visual	Visibility of and exposure to views of steel towers and	Permanent	Definite	Negative Medium

	conductors at various locations and distances from the facility.			
Social	Impact on production and GDP stimulus	Long	Probable	Low Positive
	Impact on employment stimulus	Long	Probable	Low Positive
	Impact on changes in sense of place	Long	Probable	Low Negative
	Impact of power lines on local agricultural	Long	Possible	Low Negative
	Impact of power lines on land values	Long	Possible	Low Negative
	Impact on property of the affected land-owners and households	Long	Possible	Low Negative

DECOMMISSIONING PHASE

Environmental Aspect	**Impact**	**Duration**	**Likelihood of Impact**	**Significance of Impact**
Biodiversity	Clearance of natural vegetation within the approved servitude during decommissioning activities	Long	Possible	Negative Medium
	Decommissioning of the servitude and the presence of construction vehicles and personnel will lead to inevitable displacement of animals and potential conflict	Medium	Probable	Negative Low

	situations			

The “No-go” option has however been assessed (see below).

Based on the impacts that the proposed activity may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts, the proposed development will not have a significantly detrimental impact on the environment.

No-go alternative (compulsory)

The “no-go” option addresses the scenario of the status-quo remaining the same, with no development on the proposed site. Meaning that if the proposed development doesn’t take place, there will be no strengthening of electricity in the country’s network as the proposed development will not be able to evacuate electricity from the Solar Energy Plant to the country’s network. Therefore, the need of the project should be considered.

SECTION E. RECOMMENDATION OF PRACTITIONER

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

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

N/a

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

Recommendations of the Biodiversity Specialist

Most of sensitive pan habitats are located to the south of the existing power line. It is therefore recommended that the proposed line placed directly adjacent to the north of the existing line.

Once the final alignment is approved, the corridor is to be subjected to suitable count surveys in order to determine the number and relevant details pertaining to protected tree species. This information will be required for the submission of application forms to NC DENC and DAFF prior to the disturbance of these individuals.

No other specific recommendations were made by the Biodiversity specialist due to the absence of alternative routes. However, numerous mitigation measures were listed in line with the construction and operation phase of the proposed development. All mitigation measures stipulated must therefore be adhered by the proponent and contractors. Furthermore, the implementation of generic mitigation measures is likely to ameliorate most of the identified impacts to an acceptable level.

Recommendations of the Avifauna Specialist

During Construction, if any of the Red-listed species identified in this report are observed to be roosting and/or breeding in the vicinity, the EWT is to be contacted for further instruction. The sections of line that pose a concern and require marking should be identified in a site "walkthrough" by EWT once the final route is decided and towers/pylons pegged.

Recommendations of the Wetland Specialist

Should any activity which is contemplated and which will impact on the wetlands on site by either impeding or diverting flow in a watercourse, or through altering the beds, banks or characteristics of the watercourse will be subject to authorisation in terms of water uses (c) and (i) as detailed under Section 21 of the National Water Act.

Recommendations of the Agricultural Potential and Soils Specialist

No fatal flaws were identified. However, ensure that as little pollution or either non-physical disturbance occurs.

Recommendations of the Heritage Specialist

It is recommended that an updated paleontological desktop for the Limestone1 alignment be done to determine the paleontological significance of the Precambrian limestones, dolomites and cherts of the Ghaap Group (Campbell Rand Subgroup).

Further to these recommendations the general Heritage Management Guideline in Sections 6 needs to be incorporated in to the EMP for the project.

Recommendations of the Visual Specialist

The proposed development will not have any significant visual impact further than 1km. However, it is recommended to avoid the unnecessary removal of vegetation and that all disturbed areas are properly rehabilitated. The proposed power line servitude should be vegetated and maintained together with together with the Solar Energy Facility site at large. All mitigation measures stipulated must be adhered to as far as possible.

Recommendations of the Social Specialist

All mitigation measures stipulated must be adhered to as far as possible.

General Recommendations of the EAP

- All mitigation measures recommended by the various specialists should be strictly implemented.
- Final EMPr should be approved by DEA prior to construction.

Is an EMPr attached?	YES	

The EMPr must be attached as Appendix G.

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

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

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

The EMPr is included in **Appendix G**.
Details of the EAP who compiled the BAR are included in **Appendix H**.

The declaration of interest for each specialist is included in **Appendix I**. Any other information relevant to this application and not previously include is in **Appendix J**.

_____

NAME OF EAP

_____ _____

SIGNATURE OF EAP DATE

Section F: Appendixes

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information

REFERENCES

Broughton E, 2013, Socio-Economic Impact Assessment Study Report for the proposed Construction of Limestone 1 Power line, Substation and Switchyard station of the Portion 0 (remaining extent) of Plaas 267, Northern Cape Province, Urban- Edge

Fourie W, 2013, Heritage Impact Assessment Report for the proposed Construction of Limestone 1 Power line, Substation and Switchyard station of the Portion 0 (remaining extent) of Plaas 267, Northern Cape Province, PGS Heritage

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Jansen van Vuuren D, 2013, Visual Impact Assessment Report for the proposed Construction of Limestone 1 Power line, Substation and Switchyard station of the Portion 0 (remaining extent) of Plaas 267, Northern Cape Province, MetroGIS (Pty) Ltd

National Development Plan, 2011

Pearson A, 20132, Avifaunal Impact Assessment Report for the proposed Construction of Limestone 1 Power line, Substation and Switchyard station of the Portion 0 (remaining extent) of Plaas 267, Northern Cape Province, Endangered Wildlife Trust

Paterson D.G, 2013, Agricultural Potential and Soil Report for the proposed Construction of Limestone 1 Power line, Substation and Switchyard station of the Portion 0 (remaining extent) of Plaas 267, Northern Cape Province, ARC.LNR

Robbeson R,2013, Terrestrial Biodiversity Impact Assessment Report for the proposed Construction of Limestone1 Power line, Substation and Switchyard station of the Portion 0 (remaining extent) of Plaas 267, Northern Cape Province, Bathusi Environmental Consulting

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