PROPOSED DEVIATION OF THE EXISTING RIETFONTEIN 33KV POWER LINE AT TWO LOCATIONS (KOOPAN AND HAKSKEEN PAN) NEAR ASKHAM AND RIETFONTEIN IN THE NORTHERN CAPE PROVINCE.

Basic Assessment Report

DFFE Ref number: 14/12/16/3/3/1/2858

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Prepared for:

Eskom Holdings SOC Ltd

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QUALITY AND REVISION RECORD

QUALITY APPROVAL

	Capacity	Name	Signature	Date
Lead Author/Registered EAP	Environmental Assessment Practitioner (EAPASA Reg: 2019/2008)	Elbi Bredenkamp		20/11/2023
Assistant Author	Environmental Consultant	Bryan Cloete		20/11/2023

This report has been prepared in accordance with Enviroworks Quality Management System.

REVISION RECORD

Revision Number	Objective	Change	Date
1	Review	- Incorporation of comments	19/11/2023

DISCLAIMER

Even though every care is taken to ensure the accuracy of this report, environmental assessment studies are limited in scope, time and budget. Discussions are to some extent made on reasonable and informed assumptions built on bona fide information sources, as well as deductive reasoning. Since environmental impact studies deal with dynamic natural systems additional information may come to light at a later stage during the impact assessment phase. The author does not accept responsibility for conclusions made in good faith based on own databases or on the information provided. Although the author exercised due care and diligence in rendering services and preparing documents, he accepts no liability, and the client, by receiving this document, indemnifies the author against all actions, claims, demands, losses, liabilities, costs, damages, and expenses arising from or in connection with services rendered, directly or indirectly by the authors and by the use of this document. This report should therefore be viewed and acted upon with these limitations in mind.

EXECUTIVE SUMMARY

INTRODUCTION AND BACKGROUND

Eskom Holdings SOC Ltd (Eskom) (The Applicant) appointed King's Landing Trading 507 (Pty) Ltd t/a Enviroworks, an Independent Environmental Assessment Practitioner (EAP), to undertake the required Basic Assessment (BA) process for the proposed power line deviation near Rietfontein and Askham and Rietfontein, within the Dawid Kruiper Local Municipality, Northern Cape Province.

The site is located approximately 3.8km to the west of the R31 and R360 interchange. Prominent landmarks include the Andriesvale Town Hall and the Vinkie's Kalahari Experience to the west of the R360. The site is adjacent the Koopan wetland. The second site is located between the R31 and the South African/Namibian border, near the settlement of Rietfontein.

The following properties are involved: Remaining Extent of Mier Farm No. 585, Portion 100 of Mier Farm No. 585, Portion 103 of Mier Farm No. 585, Portion 105 of Mier Farm No. 585, Portion 106 of Mier Farm No. 585 and Portion 2 of Uitkoms Farm No. 136.

The proposed activity involves the rerouting of the Rietfontein-Rietfontein 33kV power line near the Rietfontein settlement in the Northern Cape Province. The purpose of rerouting this power line is to remove it from the two pans (Hakskeen Pan and Koopan). Currently the Rietfontein-Rietfontein 33kV power line runs through these two pans. When there is water in the pans the pylons are prone to falling over because of the wet clay soil. The wet clay soil then makes it very difficult for maintenance vehicles to reach the fallen structures to repair them. As a result, Eskom customers in the area are left without power for long periods. The current power line configuration consists of bird friendly wooden pole structure (D-DT-1870). This is the same configuration that will be used on the two sections where the line will be diverted. The length of the wooden pole structures will range from 9 to 13 metres. The poles are planted 2 meters deep in holes drilled by a truck mounted drill. The holes are 300mm in diameter and 2 metres deep. The average distance between structures are 100 metres.

The location wherein the proposed power line deviation routes, are shown on the Maps provided in Appendix C. The placement of all infrastructure within the indicated area (i.e., site boundary) will only be finalised once a Contractor has been appointed. Once finalised, the final route layout will be submitted to Department of Forestry, Fisheries and the Environment (DFFE).

The proposed project is a listed activity under Section 24(2) and 24(d) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) (as amended). The Environmental Impact Assessment (EIA) Regulations, 2017 (as amended by GN. 517 of 11 June 2021) promulgated in terms of Chapter 5 of the NEMA provide for the control of certain activities as listed in Government Notice Regulations (GN R.) No. 327, 325 and 324 (as amended by GN. 517 of 11 June 2021). Activities listed in these notices must comply with the regulatory requirements listed in GN R. 326, as amended, which prohibits such activities until written authorisation is obtained from the Competent Authority (CA).

Such Environmental Authorisation (EA), which may be granted subject to certain conditions, will only be considered after compliance with the EIA Regulations of 2017 (as amended). GN R. 326, as amended, sets out the procedures and documentation that need to be compiled when preparing an BA Report.

PROJECT DESCRIPTION

The town of Rietfontein currently functions as a border post with Namibia during the daytime hours of 08:00-16:30, providing access to and from south-east Namibia via Aroab on the C16 main road.

The main purpose of the proposed powerline deviations is to provide access to the power lines for maintenance purposes. As explained in the introduction, the applicant wishes to move the powerlines out of the pans through which they currently pass. When the pans are waterlogged, the wooden pole structures are at risk of falling over due to the water in the pans, making maintenance impossible in terms of repairing any damage to the powerlines.

In events like this, the local town of Rietfontein will be without electricity as maintenance will be a struggle and the local community will be without power for a few hours to a few days. This in turn will affect business in the area.

LEGISLATIVE CONTEXT

The proposed project constitutes the following listed activity in terms of the NEMA:

Table 1: NEMA listed activities (2014, as amended) applicable to the proposed project

No.	Listed activity	Description of project activity
Listing Notice 3 (GN R324 as amended)		
12 g. (i)	The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of Indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. **g. Northern Cape** I On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning	The proposed rerouting of the powerline will require vegetation clearance of more than 300 square metres within an area zoned as open space.
14 g. (ii.) (c) (g) (ii) (ff)	The development of— (ii) infrastructure or structures with a physical footprint of 10 square metres or more; where such development occurs—	The proposed infrastructure is located outside an urban area and within a Critical Biodiversity Area (CBA).

	(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse; **g. Northern Cape** ii. Outside urban areas: (ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans.	

Legal requirements for this project

Eskom is obliged to apply for an EA for the listed activities in Table 1 and to undertake a BA process in support of the application, in accordance with the procedure stipulated in the EIA Regulations, 2014 (as amended).

REPORT STRUCTURE

This Report is set out as follow:

- **Section A: Activity Description** provides an overview of the development proposal and listed activities which are triggered in terms of Listing Notices GN R. 324, as amended; of the EIA Regulations of 04 December 2014 (as amended by GN. 517 of 11 June 2021).

- **Section B: Description of Receiving Environment** provides detail on the affected landscape in its present state. A range of aspects relating to the biophysical (e.g. geology, soil surface and sub-surface water and biodiversity), socio-economic, historic and cultural character of the immediate site and surrounding areas are described herein, whilst applicable legislation, policies and guidelines considered are recognised.

- **Section C: Public Participation** describes the consultation component of this study between the EAP and Interested and Affected Parties (I&AP's) as well as Organs of States. Regulatory requirements of the process are discussed, with a summary of consultation made with state departments as well as comments and response are given. Comment periods were afforded to parties, with an initial registration period provided to parties.

- **Section D: Impact Assessment, Management, Mitigation and Monitoring Measures,** describe how the proposed project may impact on the geographical, physical, biodiversity, socio-economic, historical and cultural aspects of the receiving environment. Resource uses of the proposed project phases, attributes to waste and emissions, water use, power supply and energy efficiency are further discussed.

- **Section E: Recommendations of the EAP** provides, based on such findings as various site surveys, impact assessment, investigation of alternatives and the review of strategic policies to consider the needs and desirability, the outgoing opinion of the EAP is detailed. Any noteworthy recommendations emanating from the study are described here.

- **Section F: Appendices** list all supportive documents enclosed with this report, after which declarations of the Applicant, EAP and Specialists are given.

ALTERNATIVES

Site Alternatives

No site alternative is proposed. The layout for the proposed powerline deviations is occurring in existing areas and has been based on consideration of access to the infrastructure. The chosen routes at Koopan and Hakskeen pan both have established access roads (in the form of two track farm roads) throughout the routes. These access roads are accessible by heavy maintenance vehicles which will improve repair time when a fault occurs. No additional access roads will therefore need to be constructed. To keep the cost for the powerline deviation as low as possible the length of the new routes was also taken into consideration which contributed to the proposed new routes.

Location alternatives at Hakskeen pan was considered but because of the location of the existing powerline the chosen new route is the optimal route. An alternative route at Hakskeen pan will be more than double the length of the chosen route which will increase the cost of the project immensely.

Cabling was not considered for this project for a number of reasons. First, the cost of cabling, secondly the physical footprint (trenches needs to be dug for the entire length of the line route in order to lay the cables which increase the size of the impacted area), thirdly, Eskom's latest engineering standard recommend to only make use of cabling when an existing cable needs to be replaced and, fourthly, maintenance cost and time is more than a conventual overhead powerline.

The Preferred Alternative will be situated at the following co-ordinates:

Property Address	Hakskeen Pan site: The site is located between the R31 and the South African/Namibian border, near the settlement of Rietfontein. Koopan site: The site is located approximately 3.8km to the west of the R31 and R360 interchange. Prominent landmarks are the Andriesvale Town Hall and the Vinkie's Kalahari Experience located west of the R360. The site is adjacent to the Koopan wetland.
Hakskeen corridor start, middle and end point coordinates	A. 26° 44' 35.78" S; 20° 4' 58.83" E B. 26° 42' 4.19" S; 20° 8' 39.85" E C. 26° 44' 59.00" S; 20° 12' 12.10" E
Koopan corridor start, middle and end point coordinates	A. 26° 53' 33.14" S; 20° 34' 13.04" E B. 26° 55' 59.26" S; 20° 35' 38.80" E C. 26° 55' 1.7" S 20° 37' 33.2" E

Laydown Alternative 1

Laydown alternatives for the site include vacant erven in Rietfontein and Andriesvale on areas that are already disturbed. These will be considered closer to construction commencing should they be required.

Technology Alternatives

The use of steel mono pole structures has been considered; however, this technology is not financially feasible because the structures themselves are significantly more expensive than wood poles. The foundations of the mono poles are big 3m x 3m x 2m and also require concrete which increase the footprint and the cost significantly.

No-Go Alternative

This alternative considers the option of 'do nothing' and maintaining the status quo will imply that the powerlines will remain within the pans and pose a major constraint during operational maintenance. Therefore, the no-go alternative will not be a desired outcome as it will not meet the growing energy requirements for the area.

PUBLIC PARTICIPATION PROCESS

A comprehensive Public Participation Process (PPP) has been carried out to actively engage with stakeholders and those who are Interested and Affected Parties (I&APs) regarding the project proposal. To inform I&APs about the Basic Assessment (BA) process, an advertisement was placed in a local newspaper, and poster notices have been strategically placed at various locations at both Rietfontein and Askham. This BAR was made available for a thirty (30) day comment period from **16 October 2023 until 17 November 2023.** The BAR has been available on Enviroworks website (**www.enviroworks.co.za**) and a link to the Enviroworks website has been emailed to all relevant stakeholders and Organs of State.

SPECIALIST FINDINGS

AGRICULTURAL COMPLIANCE STATEMENTS

The Agricultural Compliance Statement was compiled by Dr Darren Bouwer of Digital Soils Africa. The main conclusions and/or recommendations detailed in the Agricultural Compliance Statement are as follows:

Hakskeen pan

The site, as determined by the screening tool, holds a moderate agricultural sensitivity rating due to its moderate to low land capability. However, no existing agricultural practices were identified through land cover data or satellite imagery. Grazing capacity in the area is low, but the linear nature of the proposed development is unlikely to hinder post-construction grazing significantly. Micro-siting concerns are minimal, given the ongoing development in the surrounding region.

Recommendations:

- Limit Development Footprint: During construction, restrict the development to the smallest possible footprint and avoid disturbing areas beyond this designated zone.

- Clear Conductor Lines: Ensure that access conductor lines remain clear throughout construction and operational phases, preventing interference with agricultural activities.
- Erosion Risk Mitigation: Recognize the low rainfall in the area but be mindful of sodic soils near pans, which are highly dispersive. Implement thorough rehabilitation post-pole removal to prevent potential gully erosion, including the addition of compost to the topsoil during rehabilitation.

Koopan

- The site has a moderate agricultural sensitivity classification due to its moderate to low land capability.
- No agricultural practices were identified through national land cover data or satellite imagery.
- Grazing capacity is low, but post-construction grazing should not be significantly impacted, given the linear nature of the development.
- Micro-siting concerns are minimal, as the development's linear nature is not expected to hinder agricultural activities.

Recommendations

- Restrict the development to the smallest possible footprint and avoid altering areas beyond the development site.
- Keep access conductor lines clear and ensure construction and operational activities do not disrupt agricultural activities.

HERITAGE IMPACT ASSESSMENT

The Heritage Impact Assessment was compiled by Jenna Lavin of CTS Heritage. The main conclusions and/or recommendations detailed in the Heritage Impact Assessment are as follows:

The assessment revealed significant archaeological findings along the dune field's apex, signifying its high sensitivity. Additionally, several burials were discovered within the proposed grid corridor, necessitating mitigation measures. As for palaeontological sensitivity, the Kalahari Sands of the Gordonia Formation were found to have a low sensitivity to impacts on significant palaeontology. Fossils in this formation are primarily associated with ancient pans, lakes, and river systems, including various elements like Palynomorphs, root casts, rare vertebrate remains, among others. To address potential fossil discoveries, it is recommended to implement the Chance Fossil Finds Procedure during excavation activities.

Recommendations

- The proposed grid alignment developments are not expected to have a negative impact on significant archaeological heritage, as long as certain precautions are taken.
- Implement the specified mitigation measures noted in the report.
- Conduct a pylon placement walkdown by an archaeologist before construction to ensure that significant archaeological resources are not affected.
- Follow the attached Chance Fossil Finds Procedure during construction.
- The possibility of hidden or subsurface sites being missed remains. If any evidence of archaeological sites, remains, fossils, burials, or heritage resources is discovered during development, cease work in

the area immediately and promptly notify SAHRA (South African Heritage Resources Agency) for further guidance.

ARCHAEOLOGICAL SPECIALIST STUDY

The Archaeological Specialist Study was compiled by Jenna Lavin and Nicholas Wiltshire of CTS Heritage. The main conclusions and/or recommendations detailed in the Archaeological Specialist Study are as follows:

The survey, conducted with few constraints, thoroughly assessed heritage resources in the project area. It revealed significant archaeological resources along the dune field's apex, making this area highly sensitive. Additionally, several burials were found within the proposed grid corridor, and appropriate mitigation measures are detailed in Table 1. Overall, there are no archaeological objections to the proposed development, provided that the outlined mitigation measures are put in place.

Recommendations

The proposed development of the grid alignments are not expected to have a negative impact on significant archaeological heritage, provided that specific measures are followed:

- Implementation of mitigation measures outlined in the report.
- A pre-construction walkdown by an archaeologist to microsite the final pylon placements and avoid significant archaeological resources.
- The possibility of missing hidden or subsurface sites remains. If any evidence of archaeological sites or remains, fossils, burials, or other heritage resources is discovered during development, work must halt in the vicinity of the find, and SAHRA (South African Heritage Resources Agency) should be notified immediately to determine the appropriate course of action.

PLANT SPECIES, ANIMAL SPECIES AND TERRESTRIAL BIODIVERSITY COMPLIANCE STATEMENT

The Plant Species, Animal Species and Terrestrial Biodiversity Compliance Statement was compiled by Megan Smith of Enviroworks. The main conclusions and/or recommendations detailed in the Plant Species, Animal Species and Terrestrial Biodiversity Compliance Statement are as follows:

The footprints of the proposed deviation routes encompass three main vegetation types: Kalahari Karroid Shrubland, Gordonia Duneveld, and Gordonia Plains Shrubland. These areas primarily consist of natural habitats, with minimal human disturbance observed, mainly from small farmhouses and sheep grazing.

Notably, the Koopan deviation route corridor has recorded two protected tree species, namely *Vachellia haematoxylon* and *Vachellia erioloba*.

Most of the footprints fall within "Other Natural Areas," confirming their natural and relatively undisturbed status. Some areas, particularly those within the Gordonia Duneveld, are included in a Critical Biodiverse Area Two (CBA 2), which is sensitive to changes affecting sand movement. In these areas, it is recommended that development be limited to dune slacks to prevent dune compression and vegetation removal.

It's essential to emphasize that, despite their inclusion in biodiversity plans, both CBA 2 areas and Other Natural Areas are of relatively low conservation importance and are considered to have "low" sensitivity for each of the

biodiversity themes. This assessment is further supported by the small footprint of the deviation routes, which is unlikely to significantly impact the sensitive areas.

In summary, the sensitivity assessment for each theme, within the context of the deviation route footprints, results in a "low" sensitivity classification for Terrestrial Biodiversity, Plant Species, and Animal Species.

Recommendations

To effectively manage ecological impacts on both fauna and flora associated with the project footprint, several integrated mitigation measures are recommended. These measures include fire prevention, provision of fire management equipment, avoidance of dunes where possible, erosion control, adherence to aquatic biodiversity assessments, designated smoking areas, prohibition of waste dumping into the ecosystem, protection of protected trees, and confining all activities within the designated footprint. Mainly:

- Only trees directly under the power line and up to 4 meters on either side of the outer lines may be removed under a valid Forest Act License.
    - Protected trees located further away, but with tree crowns protruding into the 4-meter buffer area, may not be removed but can be trimmed back via a valid Forest Act License. if a portion of the tree crown intrudes into the 4-meter buffer area. The position of a tree is determined by its stem. In the corridor assessed, the power line(s) should be placed to avoid slow-growing protected trees as far as possible.
- Trees with active bird nests or other significant biodiversity features may not be destroyed without a valid Fauna Permit from the provincial conservation authority, the Northern Cape Department of Agriculture, Environmental Affairs, Rural Development and Land Reform (DAERL) under the Northern Cape Nature Conservation Act, Act 9 of 2009 (NCNCA).

Additional measures involve restricting expansions and access roads to already disturbed areas, managing Alien Invasive Species (AIS), rehabilitating disturbed areas, limiting vehicle use to designated roads, ensuring staff awareness of potential fauna presence, enforcing speed limits, consulting specialists for species translocations, conducting environmental inductions for personnel, and prohibiting any harm to fauna, removal of threatened or protected plant species, and feeding of fauna.

AQUATIC BIODIVERSITY THEME COMPLIANCE STATEMENT AND SECTION 21(C) AND (I) RISK MATRIX

The Aquatic Biodiversity Compliance Statement and Section 21 (c) and (i) Risk Matrix was compiled by Megan Smith of Enviroworks. The main conclusions and/or recommendations detailed in the Aquatic Biodiversity Compliance Statement and Section 21 (c) and (i) Risk Matrix are as follows:

The proposed activities are situated within the Lower Orange Water Management Area (WMA) in the Orange/Vaal River Basin. A site visit conducted in June 2023 highlighted that both the Koopan and Hakskeen Pan deviation corridors intersect with sensitive areas designated by the Northern Cape Biodiversity Spatial Plan. These areas encompass CBA 2, other natural areas, and CBA 1 in the case of the Hakskeen Pan deviation corridor. Additionally, both corridors are located within 500 meters of significant wetlands, with the Hakskeen Pan deviation corridor also adjacent to a channelled valley bottom wetland.

The site assessment confirmed that Koopan is the only aquatic feature within a 500-meter radius of the development site. Koopan is a typical salt pan commonly found in the arid regions of South Africa. These salt pans have a highly saline substrate, typically with little to no vegetation, and are characterized by white-colored dry surfaces due to the presence of precipitated salts.

Koopan's ecological importance is amplified by its ephemeral nature and the scarcity of water in the region. When the pan is full, it provides habitat and foraging grounds for a diverse range of fauna. However, due to its sensitivity to changes in hydrology and water quality, it faces threats, including damming resulting from road development activities.

The Hakskeen Pan corridor is located within 500 meters of a valley bottom wetland and the Hakskeen Pan itself. The corridor also crosses non-perennial drainage lines. The presence of the valley bottom wetland and drainage lines is primarily determined by topography and an increase in woody species cover. However, during the site assessment, no water was visible in these areas. Species found in the wetland and drainage lines include large trees like *Senegalia mellifera*, *Boscia foetida*, and *Ziziphus mucronata*, along with some grasses (*Stipagrostis sp.).* High abundances of alien species like *Prosopis sp*. (Mesquite) suggest past disturbances. The wetland has been modified due to road development and damming downstream.

Hakskeen Pan is a mud and salt pan in the Kalahari Desert, covering an area of about 140 km2. Similar to Koopan, Hakskeen Pan plays a significant role in the local ecosystem when full, providing habitat and foraging grounds for various fauna. However, it is sensitive to hydrological and water quality changes, and it has already been impacted by road development, resulting in damming.

Recommendations

- Implement recommended buffer zones of 35 meters around the pans and 15 meters around the channelled valley bottom wetland, including its associated drainage lines. It is crucial that the proposed activities remain outside of these buffer zones to minimize potential impacts.
- Given the Principal Ecosystem Status (PES) categories, both the Hakskeen and Koopans are classified as having minimal modification (PES category B). However, the channelled valley bottom wetland falls into the moderately modified category (PES category C) due to alterations in catchment hydrology, water quality, and flow characteristics.
- Considering the overall low risk posed by the proposed activities to the wetlands, streams, and drainage lines, it is advisable to proceed with the project while diligently adhering to the recommended mitigation measures.
- We recommend seeking General Authorization for the proposed activities, as outlined in detail in Appendix D4 for the Aquatic Compliance Statement. This authorization will ensure that the project proceeds in compliance with environmental regulations and best practices.

AVIFAUNAL IMPACT ASSESSMENT

The Avifaunal Specialist Report was compiled by Dr Megan Loftie-Eaton. The main conclusions and/or recommendations detailed in the Avifaunal Specialist Report are as follows:

A total of 189 bird species were identified in the broader area, including 49 powerline-sensitive and 11 Red List species, signifying species of conservation concern. Among the powerline-sensitive species, 22 are likely residents, and 27 could occasionally inhabit the subject site.

The entire study area is highly sensitive to bird collisions with powerlines. The site's intersection with the Nama Karoo and Savanna Biomes offers diverse habitats for avifauna. Surface water resources, like pans and wetlands, are vital for attracting various bird species, especially after rainfall.

Within the subject site, drainage lines serve as crucial foraging, nesting, and roosting habitats for powerline-sensitive birds and other species. Nearby, a rocky ridge near the Koopan may attract birds for nesting and roosting, though it lies outside the subject site.

The subject site's high sensitivity to avifauna, as indicated by the DFFE Screening Tool, is linked to species such as the Lanner Falcon and Burchell's Courser. Additionally, the Hakskeen and Koopans house habitats for Species of Conservation Concern (SCC), especially those on the IUCN Red List of Threatened Species. While the site's classification as highly sensitive is accurate regarding potential impacts from the powerline and related infrastructure, appropriate mitigation measures can effectively reduce these impacts to a low level.

Recommendations

- Implement all mitigation measures detailed in the Environmental Management Plan (Appendix 4) for Avifaunal Impact Assessment.
- Continuously monitor and report avifauna in the project area to assess mitigation effectiveness.
- Collaborate with local experts and authorities to create a site-specific avifauna conservation plan.
- Ensure strict compliance with environmental regulations and permits regarding avifauna protection.
- Provide comprehensive avifauna awareness and training for project personnel.
- Consider establishing supplementary bird habitats or sanctuaries in the vicinity.
- Conduct public awareness campaigns and community education to promote avifauna conservation.

RECOMMENDATIONS OF THE EAP

The following recommendation have been made by the EAP:

Construction Phase

- Once finalised, the final route layout will be submitted to Department of Forestry, Fisheries and the Environment (DFFE).
- A pre-construction walkdown by an archaeologist to microsite the final pylon placements and avoid significant archaeological resources;
- All hazardous substance must be bunded in secondary containment able to hold 110% of the substance being bunded;
- The specialist mitigation measures and the mitigation measures described in the EMPr must be implemented;

- Vegetation clearance should be restricted, and it should be endeavoured to retain existing vegetation where possible;
- Protected trees should be avoided as far as possible;
- All watercourses are to be avoided;
- Adequate security must be placed at the construction site throughout the Construction Phase; and,
- The relevant Eskom Standards must be implemented during the Construction Phase.

Operational Phase

- The Applicant must compile an Inspection and Maintenance Programme, to ensure that that maintenance practices do not result in any additional impacts on the fauna, flora and the watercourses. This plan must adhere to the relevant industry standards, and ensure that the powerline is well maintained;
- The stormwater management system, i.e. drainage channels, must be maintained;
- Existing roads must be adhered to as far as practically possible;
- Continuously monitor and report avifauna in the project area to assess mitigation effectiveness;
- All mitigation measures provided for in the specialist reports, BAR and the EMPr for the operational phase must be implemented.

Decommissioning Phase

- The mitigation measures described in the EMPr must be implemented;
- Disturbance outside of the footprint is strictly prohibited;
- Areas disturbed by the development must be rehabilitated via a Rehabilitation Plan (compiled by a suitably qualified Botanical Specialist);
- All hazardous waste to be temporarily stored on site must be stored on a bunded, impermeable area. All hazardous waste must be disposed at a facility licensed to dispose the respective hazardous waste types.

BASIC ASSESSMENT REPORT CONTENT REQUIREMENTS

Content Requirements of a Basic Assessment Process	Section in the Report
(a) details of – (i) the EAP who prepared the report, and (ii) the expertise of the EAP, including a curriculum vitae;	Appendix I
(b) the location of the activity, including: (i) the 21 digit Surveyor General code of each cadastral land parcel; (ii) where available, the physical address and farm name; (iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	Section B
(c) a plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale;	Appendix A
(d) a description of the scope of the proposed activity, including –	Section A

Content Requirements of a Basic Assessment Process	Section in the Report
(i) all listed and specified activities triggered and being applied for; and (ii) a description of the activities to be undertaken including associated structures and infrastructure;	
(e) a description of the policy and legislative context within which the development is proposed including – (i) an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report; and (ii) how the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools framework, and instruments;	Section A
(f) a motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;	Section A
(g) a motivation for the preferred site, activity and technology alternative;	Section A
(h) a full description of the process followed to reach the proposed preferred alternative within the site, including: (i) details of all the alternatives considered; (ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs; (iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them; (iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; (v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts – (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated; (vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risk associated with the alternatives; (vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may	Section A

Content Requirements of a Basic Assessment Process	Section in the Report
be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; (viii) the possible mitigation measures that could be applied and level of residual risk; (ix) the outcome of the site selection matrix; (x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and (xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity;	
(i) a full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including – (i) a description of all environmental issues and risk that were identified during the environmental impact assessment process; and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;	Appendix F
(j) an assessment of each identified potentially significant impact and risk, including- (i) cumulative impacts; (ii) the nature, significance and consequences of the impact and risk; (iii) the extent and duration of the impacts and risk occurring; (iv) the probability of the impact and risk occurring; (v) the degree to which the impact and risk can be reversed; (vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and (vii) the degree to which the impact and risk can be avoided, managed or mitigated;	Appendix F
(k) where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulation and an indication as to how these findings and recommendations have been included in the final report;	Section D
(l) an environmental impact statement which contains – (i) a summary of the key findings of the environmental impact assessment; (ii) a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the proposed site indicating any areas that should be avoided, including buffers; and	Section D

Content Requirements of a Basic Assessment Process	Section in the Report
(iii) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;	
(m) based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr;	Appendix G
(n) any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;	Section E
(o) a description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed;	Section D
(p) a reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;	Section E
(q) where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised;	N/A
(r) an undertaking under oath or affirmation by the EAP in relation to: (i) the correctness of the information provided in the reports; (ii) the inclusion of comments and inputs from stakeholders and I&APs; (iii) the inclusion of inputs and recommendations from the specialist reports where relevant; and (iv) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties; and	Section E
(s) where applicable, details of any financial provision for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	N/A
(t) any specific information that may be required by the competent authority; and	Appendix J
(u) any other matters required in terms of section 24(4)(a) and (b) of the Act.	N/A

DETAILS OF THE EAP

EAP DETAILS

Table 2: Details of the EAP

Business name of Specialist:	Enviroworks
Specialist Name:	Gerbrecht Elizabeth (Elbi) Bredenkamp
EAPASA/IAIAsa Registration	EAPASA Reg: 2019/2008; IAIAsa: 6392
Physical address:	Unit 81, Millennium Business Park, 19 Edison Way, Century City
Postal address:	Suite 1064, Private Bag X2, Century City
Postal code:	7446
Telephone:	082 562 4134
E-mail:	elbi@enviroworks.co.za
Fax:	086 601 7507

EAP CURRICULUM VITAE

Suite 1064, Private Bag X2, Century City, 7446
Unit 81, Millenium Business Park, Block B
Situated at 19 Edison Way, Century City
Cell I 082 562 4134 I Fax 086 601 7507
elbi@enviroworks.co.za I www.enviroworks.co.za

Gerbrecht Elizabeth (Elbi) Bredenkamp

Name & Surname	Gerbrecht Elizabeth (Elbi) Bredenkamp
I.D Number	6402130036082
Nationality	South African
Home Language	Afrikaans
Proficiency in Other Languages	**English** - Spoken = Excellent - Written = Excellent - Reading = Excellent

	South Sotho - Spoken = Fair
Parent Firm	King's Landing Trading 507 (PTY) LTD t/a Enviroworks
Position	Director
Years' Experience	23 years
Educational Qualifications	**2022-** Negotiation Strategies and Dispute Resolution- Mediation Succeed- Adv AC Oosthuizen SC **2021-** Decision Makers in Public Participation- January 2021 – International Association of Public Participation (IAP2) Fundamentals of Engagement- July 2021- International Association of Public Participation (IAP2) 2012- Greenhouse Gas Verification Training of the JCM (Joint Credit Mechanism LRQA Japan Proposed by the Japanese Government) ISO 14054, ISO 14064, JCM (BOCM) Manuals, LRQA GHG Verification Procedures. **2012 –** Systems & Greenhouse Gases ((GHG) Technical Assessor Course, SANAS South African National Accreditation System- ISO 14065-distinction **2010 –** International Training: Cork and London: ISO 14064-1/2/3/4 - Carbon Action (UK) • Measuring your Organisation's Carbon Footprint: ISO 14064-1: Essentials – GHG Inventories (50018728/50052908) • Reducing your Organizational Environmental Impact: ISO 14064-2: Essentials – GHG Projects (50018741-50052911) • Carbon Emission Reduction Expert Course: ISO 14064-2 Expert – GHG Projects (50018731/50052909) • Greenhouse Gas Verification: Using ISO 14064 (50029594-50052913) Courses successfully completed in England & Ireland on Carbon Footprint measuring and verification 2000- 2002- • Principles of EIA Review Course US EPA, in Pretoria, RSA • Conflict Management Durban, RSA • Environmental Law (with distinction) Aldo Leipoldt Institute, Pretoria, RSA **1997-1999 –** • Mineral Laws Administration and Environmental Management University of Pretoria, RSA • Principles of the Rehabilitation of Disturbed Areas University of the North-West, RSA • Environmental Impact Assessment University of the North-West • Environmental Management Systems (SABS/ISO 14001) University of the North-West, RSA • Environmental Policy and Management in Mining and Minerals University of Johannesburg, RSA • The Measurement of Biodiversity University of the Free State, RSA • Environmental Management Systems (SABS/ISO 14001) University of the North-West, RSA - 1997 – 1999 **1994** - M.Sc Botany (Cum Laude) - University of the Free State **1987** - B.Sc Honours Botany - University of the Free State

	1986 - B.Sc - University of the Free State

Professional Qualifications

Professional Associations

- Registered Scientist with the South African Council for Natural Scientific Professions (SACNASP) (Pr.Sci.Nat. 400328/11)
- International Association of Impact Assessment South Africa (IAIAsa) (Member No 3893)
- International certified Carbon Verifier (auditor)
- SANAS accredited System & Green House Gas Technical Assessor
- Member and Certified Carbon Verifier with the Carbon Protocol of South Africa
- Accredited Consultancy Partner with the Carbon Disclosure Project- 2012
- International Association for Impact Assessment South Africa (IAIAsa) – Branch Chair from 2011 -2013
- IAP2 Southern Africa (IAP2 SA) affiliate to the International Association for Public Participation (IAP2)
- Accredited Chartered Public Relations Practitioner (Member no:73740) with the Public Relations Institute of South Africa (CPRP PRISA)

Special Awards

- Prof. E M van Zinderen Bakker - Prize (Best M.Sc. - Dissertation) & Honours in academics
- Dean's Medal (Best Magister Student)
- S2A3 - GENCOR - Bronze Medal (Best M.Sc. Thesis in Dept. Botany and Genetics)
- Africa Growth Awards Overall Winner Services Sector- 2012
- SEDA Business Competition Overall Provincial Winner- 2012

Training and Webinars

- Effective And Practical Adaptation Strategies For Climate Change – SACNASP

Publications

- Die Suid-Afrikaanse Tydskrif vir Natuurwetenskap en Tegnologie: Jaargang 15, Maart 1996*: "Evidence that thermoinhibition and the alleviation thereof by oxygen plus kinetin in Great Lakes lettuce seed is related to mitochondrial function."*ISSN 0254-3486

Relevant Experience

GHG AND CLIMATE CHANGE EXPERIENCE	DETAILS	DATE
Course proposal "Integrating Climate Change into Environmental Impact Assessments" has been accepted. **The purpose of the course is to determine why, how, and when it is necessary to bring Climate Change into EIA's. Participants will also learn how to think and what information is available to work with. Analysis is important and how to move from theory to practice.**	**Presented in conjunction with International Association of Impact Assessors symposium Celsius 1.5: Impact Assessment and Climate Change 2022** https://conferences.iaia.org/climatechange22/index.php • **Understanding the context of climate change in environmental impact assessments.** • **Understanding the relationship between climate change and sustainable development.** • **Understanding climate change Impact and its uniqueness, as the local contributions and the global effects are not directly linked.** • **What will trigger the necessity of a climate change specialist study, and can this be incorporated in the existing EIA screening assessment?** • **Learning from local case studies how to bring the climate change aspect into an EIA.** • **Group discussion on the development of a standard -- but non-tick box -- approach to provide consistency in climate change impact assessments going forward.** • **Discussion on alternatives/mitigation measures: know what data and modelling is available to support practical alternatives with a long-term perspective.** • **Learning from international case studies with South Africa in mind.** • **Conclusion: South Africa needs to move towards a low carbon economy with a climate resilient society, and EIAs are part of this journey.**	**Sept 2022**

City of Cape Town: GAS FLARING PLANT: CDM Project in conjunction with Promethuim (Carbon Company in South Africa)	**Enviroworks forms part of the management of 2 landfill gas flaring projects in Cape Town and is responsible for calibration of instruments and reporting on faults + monthly readings and feedback to City of Cape Town**	**From 2019-2022 (current)**
Africa Pre-COP 26 Event Speaker: Africa Inspire Connect	**Keynote Speaker on Climate Change in Africa at the Africa Connect 2021 Inaugural Event Cape Town, Western Cape Province**	**2021**
SANRAL GHG for various projects	• **Greenhouse Gas Inventory for the Rehabilitation of Structures on National Route 14 Section 5 to 7 between Upington to Kuruman, Northern Cape Province** • **Greenhouse Gas Inventory for the widening of structures on National Route 10 Section 11 between Groblershoop and Upington, Northern Cape Province** • **Greenhouse Gas Inventory for the widening of structures over the Orange River on National Route 12 Section 9 near Hopetown, Northern Cape Province**	**2017-2019**
Thebe Health Risk Management – Carbon Footprint	**Annual Carbon Footprint Analysis for Thebe Health Risk Management for the year 2016, 2017 and 2018.**	**2016, 2017,2018**
Presented various Climate Change Talks to Construction (eg: South African National Roads Agency SANRAL) and Engineering Firms (Iliso)	**SANRAL- Measuring Carbon Footprint and Reporting- Why, How and What lies ahead?** **Iliso Engineering *Green talk-Brief Overview*** ***1. Key challenges of business in the 21st century*** ***2. What is sustainable development?*** ***3. South Africa:*** • **Green Building** • **Carbon Foot-printing** • **Carbon Tax**	**October 2016**

Lecture for the past 5 years at the University of the Free State Business School on Environmental Megatrends with specific focus on Climate Change	• **Environmental Megaforces** • **Planetary Boundaries | Doughnut Economics | SDGs** • **Triple- Bottom- Line vs Multi-Capitalism** • **Going Green | Context Based Sustainability** • **Tools for implementation & AI to predict and prevent Environmental Megaforces**	**Yearly**
I did the International Association of Impact Assessors (South Africa) IAIAsa : National Conference 2013 Event Carbon Footprint whilst I was Branch Chair of this organisation.	• **300 delegates attended.** • **Present on Climate Change and Awareness thereof.** **(People had to car-pool as far as possible and they had to provide proof thereof.** **Our food was sourced locally as far as possible.** **Water Interventions was implemented** **Electricity was switched off between certain hours)**	**2013**
We did our own company's Organizational Carbon Footprint Assessment	• **Enviroworks as a corporate responsible company disclosed our carbon footprint in accordance with the Carbon Disclosure Project (CDP).** • **We introduced water savings measures, proper waste management, recycling and awareness training.**	**2010-2013**
Arranged and managed Carbon Action to present the ISO 14064 courses in South Africa	• **Many people benefited from that, due to word of mouth afterwards.** • **I was invited on several platforms to explain the benefit of GHG Management and what it entails**	**2013**
International Audit / Carbon Verification for the Japan, Ministry of Environment on Carletonville Mine Energy Efficiency project – South Africa	• **JCM Pilot Verification Audit for LRQA (Lloyd's Register Quality Assurance Limited, Yokohama, Japan, , Carletonville, South Africa** • **Carbon Verification**	**2012- 2013**

PROJECT MANAGEMENT AND REVIEWER: ENVIRONMENTAL AND SOCIAL	**Location**	**Date**	**Industry**	**Duties & Responsibilities**	**Duration**	**Scheduling and Costing**	**Client and Regulatory**

EASIGAS - Compilation of an Environmental Management Plan and Risk Assessment for the Pressure Testing of a One Million Litre LPG Cylinder within the Port of Port Elizabeth.	Port Elizabeth, Eastern Cape Province	2016	Petrochemical	Project Manager and Review EAP	2 months		✓
EASIGAS - Compilation of an Environmental Impact Assessment and EMP for the Proposed Development of 135 000 litre LPG Cylinder in East London	East London, Eastern Cape Province	2015	Petrochemical	Project Manager and EAP	8 months		✓
EASIGAS - Rooikraal Filling Station and Truck Stop: Compilation of an Environmental Impact Assessment and EMP for the Proposed Development of 90 000 litre LPG Cylinder in Bloemfontein.	Bloemfontein, Free State Province	2015	Petrochemical	Project Manager and EAP	8 Months		✓
De Jager Eiendomme - Compilation of an Environmental Impact Assessment and EMP for the Proposed Development of the Palmiet Filling Station and Truck Stop near Vrede.	Vrede, Free State Province	2015	Petrochemical	Project Manager and Review EAP	9 Months		✓
Eskom - Ecological source characterisation and identification, risk identification and assessment for the Source-Pathway Receptor Risk Assessment and options analysis for the expansion of the ash disposal facility at Matimba Power Station, Limpopo Province	Limpopo Province	2018	Electricity Generation	Project Manager and EAP	Months		✓
Eskom - Environmental Impact Assessment and EMP for the construction of the Cecilia Powerline and sub-station.	Centlec, Mangaung Province	2015	Electricity Generation	Project Manager and EAP	9 Months		✓
Eskom - Environmental Impact Assessment and EMP for the replacement of a 66/11kv substation and 15km overhead powerline near Swellendam	Western Cape Province	2012	Electricity Generation	Project Manager and EAP	13 Months		✓
Makespace Architects - Basic Assessment for the proposed development of a housing development.	Hartswater, Northern Cape Province	2018	Construction	EIA reviewer & Project Manger	11 months		✓
Bloemwater - Basic Assessment for the development of the Dewetsdorp Reservoir Augmentation.	Free State Province	2015 – 2016	Construction	EIA reviewer & Project Manger	1 year		✓
Sidala Energy Solutions - Full scoping and EIA for the development of a Hydroelectric Power Scheme (Lower Kruisvallei) on the Farm Kruisvallei 190 and Portion of the Farm Middelvallei 130.	Dihlabeng Local Municipality, Free State Province	2015 – 2016	Electricity Generation	Project Manager and Review EAP	2 years		✓

Mangaung Metropolitan Municipality - Environmental Impact Assessment for the proposed development of the 150 ha Cecilia Residential Development.	Bloemfontein, Free State Province	2014 – 2016	Construction	EIA reviewer & Project Manger	1.5 years		✓
Sidala Energy Solutions - Full scoping and EIA for the development of a Hydroelectric Power Scheme (Rooikat) on Portion 3 of the Farm Eskdale 204 and Portion 3 of the Farm Deelfontein 237.	Hope Town, Northern Cape	2014 - 2016	Electricity Generation	Project Manager and Review EAP	2 years		✓
SANParks - Environmental Authorisation for the upgrading of the sewerage purification plant in Golden Gate Highlands National Park.	Golden Gate Highlands National Park, Free State Province	2012	Waste Management	Project Manager and EAP	-	✓	✓
V&V Consulting - Waste Management License Application, undertaking of a Waste Management License Application for the expansion of an existing sewage treatment facility.	Rosendal, Free State Province	2013	Waste Management	Project Manager and EAP	10 months	✓	✓
Living Waters Properties - Waste Management License Application, Waste Management License for the Boschpoort Residential Estate Waste Water Treatment Works.	Boschpoort, North West Province.	2012	Waste Management	Project Manager and EAP	1 year	✓	✓
Department of Water and Sanitation - Environmental Authorisation for the construction of the Klipplaatdrift Gauging weir- 16 km	Bothaville, Free State Province	2008	Construction	Project Manager and EAP	8 months	✓	✓
SANParks - Basic Assessment for the development of the Golden Gate National Park Cultural Village.	Golden Gate Highlands National Park, Free State Province	2008	Construction	Project Manager and EAP	1 year	✓	✓
Department of Water and Sanitation - Environmental Authorisation for the construction of the Sendelingsdrift gauging weir between South Africa and Namibia	Free State Province	2006 – 2008	Construction	Project Manager and EAP	2 years	✓	✓

ENVIRONMENTAL AND SOCIAL EXPERIENCE

- **PROJECT MANAGEMENT AND REVIEWER**
- **ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)**
- **SOCIAL FACILITATOR AND SOCIAL IMPACT ASSESSMENTS**
- **ENVIRONMENTAL AUDITING**

- **TRAINING**

ENVIRONMENTAL
PROJECT MANAGEMENT AND REVIEWER
ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

PROJECT	INDUSTRY/ SECTOR	DUTIES	CLIENT AND REGULATORY LIAISON
BVi Engineering - Basic Assessment for the Design, Rehabilitation / Improvement, Routine Maintenance works of N220: Chissano to Chibuto and N/C Crz. N220 to N1, Mozambique. (2017)	Road Works	EAP	✓
SANRAL - Basic Assessment for the Routine Maintenance of National Route 2 Section 4 between Riviersonderend (Km 0.0) and Swellendam (Km 56.9), Western Cape Province. (2017)	Road Works	EIA reviewer & Project Manger	✓
SANParks - Basic Assessment for the Upgrade of Day Visitors Facilities, Kraalbaai, West Coast National Park, West Coast National Park, Western Cape Province. (2016 – 2017)	Construction	EIA reviewer & Project Manger	✓
Theewaterskloof Local Municipality - River Maintenance Management Plan for the Bath River, Caledon, Western Cape Province. (2016 – 2017)	Construction	EIA reviewer & Project Manger	✓
SANParks - Proposed development of the Phalaborwa Wildlife Activity Hub, Kruger National Park, Limpopo Province. (2017 – 2019)	Construction	EIA reviewer & Project Manger	✓
SANParks - Basic Assessment for the proposed development of the Agulhas Icon, Agulhas National Park, Agulhas, Western Cape Province. (2015 – 2016)	Construction	EAP	✓
Bloemwater - Basic Assessment for the development of the Dewetsdorp Reservoir Augmentation, Free State Province. (2015 – 2016)	Construction	EIA reviewer & Project Manger	✓
SANParks - Basic Assessment for the proposed development of the Golden Gate Dinosaur Interpretation Centre, Golden Gate Highlands National Park, Free State Province. (2013 – 2015)	Construction	EAP	✓
Project Manager and EAP: NLD - National Long Haul Optic Fibre Infrastructure Network from Johannesburg to Cape Town, Cape Town/Johannesburg. (2010 – 2012)	Construction	Project Manager & EAP	✓
Department of Water and Sanitation - Environmental Authorisation for the construction of the Oranjedraai gauging weir- Orange River, Free State. (2008)	Construction	Project Manager & EAP	✓
SANParks - Basic Assessment for the proposed development of the Agulhas Lighthouse Precinct within the Agulhas National Park, Agulhas, Western Cape Province. 2006	Construction	Project Manager & EAP	✓
Theewaterskloof Local Municipality - Proposed development of the Grabouw Cemetery on Erf 4833, Grabouw, Western Cape Province. Ecological (2016 – 2017)	Construction	EIA reviewer & Project Manger	✓
V&V Consulting - Waste Management License Application, undertaking of a Waste Management License Application for the expansion of an existing sewage treatment facility, Fouriesburg, Free State Province. (2013)	Construction	Project Manager & EAP	✓

Department of Water and Sanitation - Environmental Authorisation for the construction of the Sendelingsdrift gauging weir between South Africa and Namibia	Construction	Project Manager & EAP	
SOCIAL FACILITATOR AND SOCIAL IMPACT ASSESSMENTS			
PROJECT	**INDUSTRY/ SECTOR**	**DUTIES**	**CLIENT AND REGULATORY LIAISON**
Eskom - Social Impact Assessment for the Proposed Development of the Gromis-Nama-Aggeneis 400 kV IPP Integration, Springbok, Northern Cape Province. 2019-2020. Khululwa Gaongalelwe: StuurmKV@eskom.co.za	Energy	Public Participation Stakeholder Engagement	✓
Greenmined Environmental - Socio-Economic Impact Assessment as Part of the Application for the Amendment of the Existing Mine Right Held By Tja Naledi for the Mining of Sand, to Include Aggregate on Portion 4 of the Farm Woodlands 407, Ngwathe Local Municipality, Free State Province. 2018, Yolandi Coetzee, 011 966 4390, yolandie.c@greenmined.co.za	Mining	Public Participation Stakeholder Engagement	✓
Social Impact Assessment for the Proposed Development of a Mixed Residential Estate on Portion 9 of the Farm Ronwe No. 851, Paarl, Western Cape 2016- 2017– TTP Consult Ruan Fourie, Ruan@ttp-consult.co.za	Residential	Public Participation Stakeholder Engagement	✓
The Enviromental and Social Impact Assessment for the Design, Rehabilitation/Improvement, Routine Maintenance Works of N220: Chissano to Chibuto And N/C CRZ.N220 to N1, Mozambique. (Administração Nacional De Estradas (National Road Administration)) 2016-2017- BVi Engineering, Mr Andrew Geel, 021 527 7000	Roads Construction	- Conduct Environmental and social screening. - Review and approval of Environmental and Social screening forms monitoring during construction. - Contribute to Environmental and Social screening. - Review and approval of Environmental and Social screening forms monitoring during construction. - To inform the communities of their status within the Output and Performance based Road Contracts (OPRC) road network.	✓

		- Community empowerment on their roles and rights regarding Environmental Assessments public meetings. - Structured Workshops - Public meetings at respective villages under the OPRC road network	
CEO, Environmental Consulting and Public Participation 2002 to present Enviroworks	Conducting Public Participation Processes	Conducting of Environmental Impact Assessments, Risk Analysis, Auditing, Monitoring and Compiling of Environmental Management Plans. ALL THE ABOVE ENTAILS PUBLIC PARTICIPATION PROCESSES	✓
ENVIRONMENTAL AUDITING			
Project	**Industry/Sector**	**Duties**	**Client and Regulatory Liaison**
International Audit / Carbon Verification for the Japan, Ministry of Environment on Carletonville Mine Energy Efficiency project – South Africa: JCM Pilot Verification Audit for LRQA (Lloyd's Register Quality Assurance Limited, Yokohama, Japan, November 2012- February 2013, Carletonville, South Africa	Mining	Carbon Auditor	✓
International Environmental Audit for General Motors South Africa (GMSA) in conjunction with SHE Management Company, South Africa	Manufacturing	Environmental Auditor	✓
TRAINING			
Project	**Industry/Sector**	**Duties**	**Student Training**
Executive Development Programme at the Business School of the University of the Free State: Give lectures on Environmental Megatrends: Yearly	Post Graduate Training	Lecturer	✓
Apart from teaching, curriculum development, development of short courses for teaching staff, identification of shortcomings at schools and development of strategies to address it (Public–Private partnerships for funds, develop strategies to access to international funds).1987-1996	Department of Education - Free State	Teacher, Subject Advisor	✓
Presenting of various technical expert talks: 2015-2019 - Impact of Environmental Legislation on Development	Roads	Presenter of expert talks	✓

- SANRAL – Measuring Carbon Footprint and Reporting - Alien Invasive Species Seminar - Introduction to the Alien Invasive Species Regulations	SANRAL-South African National Roads Agency & various others.		
Training on the identification of Alien Invasive Species.	Cement Lafarge (Pty) Ltd, Western Cape	Training and Presenter	✓

•

CONTENTS

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LIST OF FIGURES:

ACRONYMS AND ABBREVIATIONS

BA	–	Basic Assessment
BAR	–	Basic Assessment Report
CBA	–	Critical Biodiversity Area
DFFE	–	Department of Forestry, Fisheries and the Environmental
DWS	–	Department of Water and Sanitation
EAP	–	Environmental Assessment Practitioner
ECO	–	Environmental Compliance Officer
EIA	–	Environmental Impact Assessment
EMF	–	Environmental Management Framework
EMPr	–	Environmental Management Programme
ESA	–	Ecological Support Area
GN R	–	Government Notice Regulation
I&AP	–	Interested & Affected Party
IDP	–	Integrated Development Plan
LED	–	Local Economic Development
LM	–	Local Municipality
NEM:PAA	–	National Environmental Management: Protected Areas Act
NEM:WA	–	National Environmental Management: Waste Act
NEMA	–	National Environmental Management Act
NWA	–	National Water Act
PSDF	–	Provincial Spatial Development Framework
SAHRA	–	South African Heritage Resources Agency
SDF	–	Spatial Development Framework
SCC	-	Species of Conservation Concern

1 SECTION A: ACTIVITY INFORMATION

1.1 PROJECT DESCRIPTION

Eskom proposes to reroute of the Rietfontein 33kV powerline near the Rietfontein settlement in the Northern Cape Province. The purpose of rerouting this powerline is to remove it from two (2) pans (Hakskeen Pan and Koopan). Currently the Rietfontein 33kV powerline runs through both of these pans. When there is water in the pans, the pylons are prone to falling over due to the wet clay soil. The wet clay soil then makes it very difficult for maintenance vehicles to reach the fallen structures in order to repair them. As a result, Eskom customers in the area being without electricity for extended periods at a time. The current powerline configuration consists of a bird friendly wooden pole structure (D-DT-1870) (Figure 4).

This is the same configuration that will be used on the two sections where the line will be deverted. The length of the wooden pole structures will range from 9 to 13 metres. The poles are planted 2 meters deep in holes drilled by a truck mounted drill. The holes are 300 mm in diameter and 2 metres deep. The average distance between structures are 100 metres. The Koopan Powerline Deviation will be 10.8 km in length and the Hakskeen Pan Powerline Deviation will be 19.8 km in length.

The proposed Hakskeen Deviation will occur on the following farm properties: The Remaining Extent of Mier Farm No. 585; Portion 100 of Mier Farm No. 585; Portion 103 of Mier Farm No. 585; Portion 105 of Mier Farm No. 585; and Portion 106 of Mier Farm No. 585.The proposed Koopan Deviation will occur on Portion 2 of Uitkoms Farm No. 136.Both powerline deviation routes are located within the jurisdiction of the Dawid Kruiper Local Municipality and the ZF Mgcawu District Municipality. There will be no site offices located on the site. The off-site offices will be located in Rietfontein or Andriesvale.

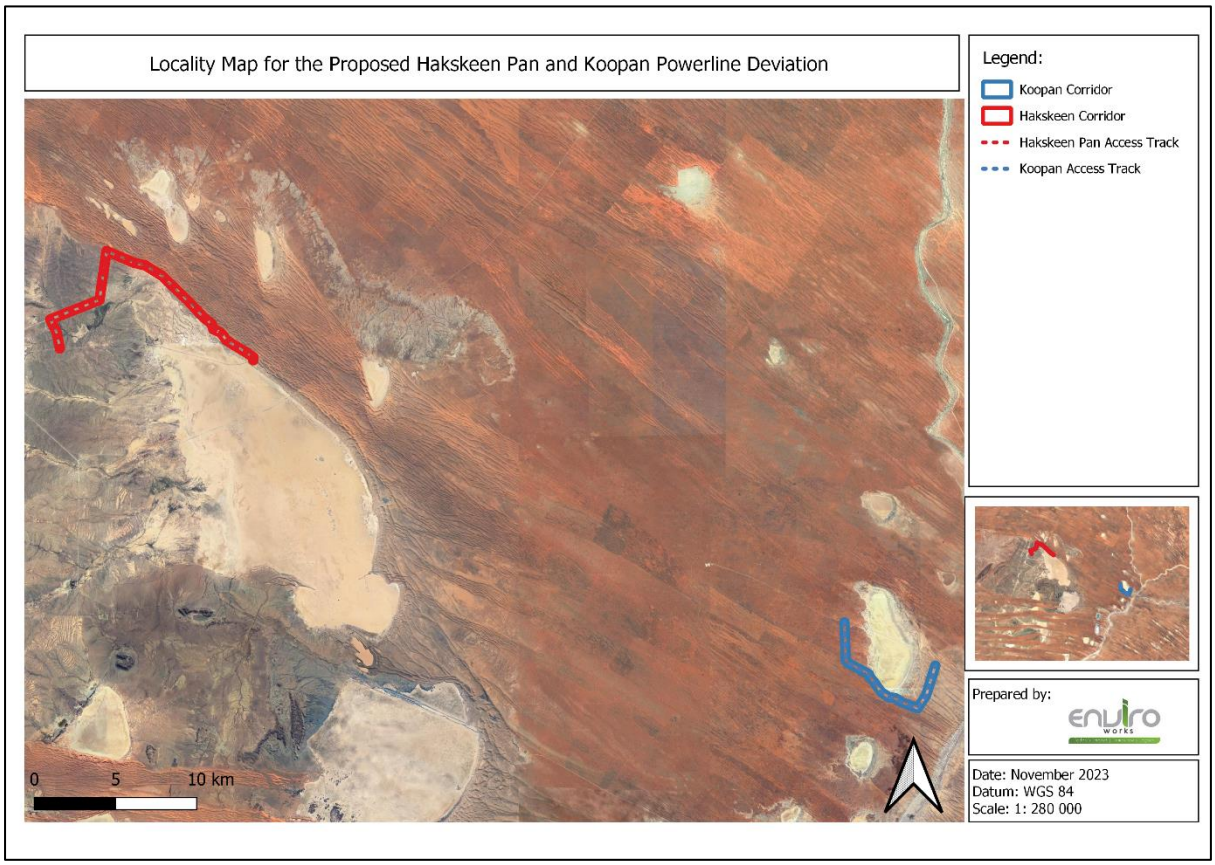

Figure 1: Locality Map of the Proposed Hakskeen and Koopan Powerline Deviation

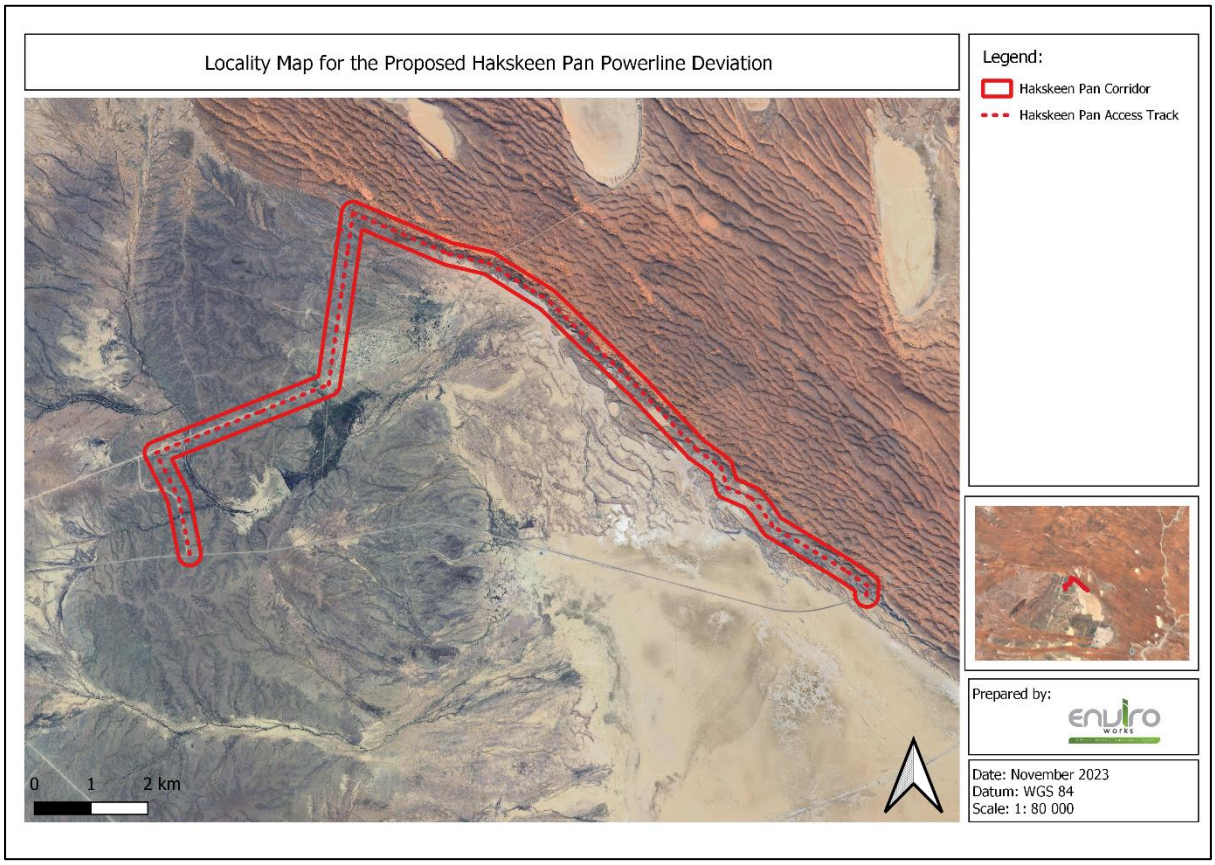

Figure 2: Locality Map of the Proposed Hakskeen Pan Powerline Deviation

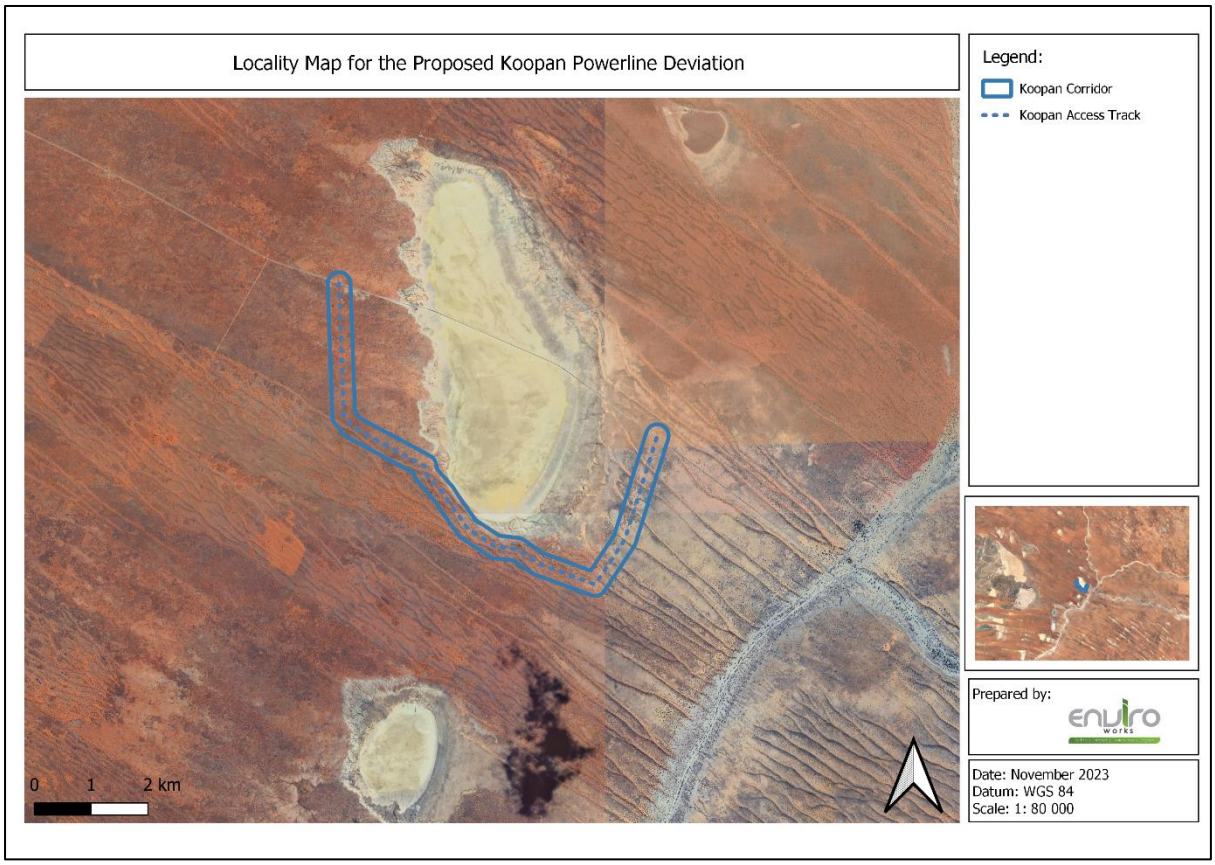

Figure 3: Locality Map of the Proposed Koopan Powerline Deviation

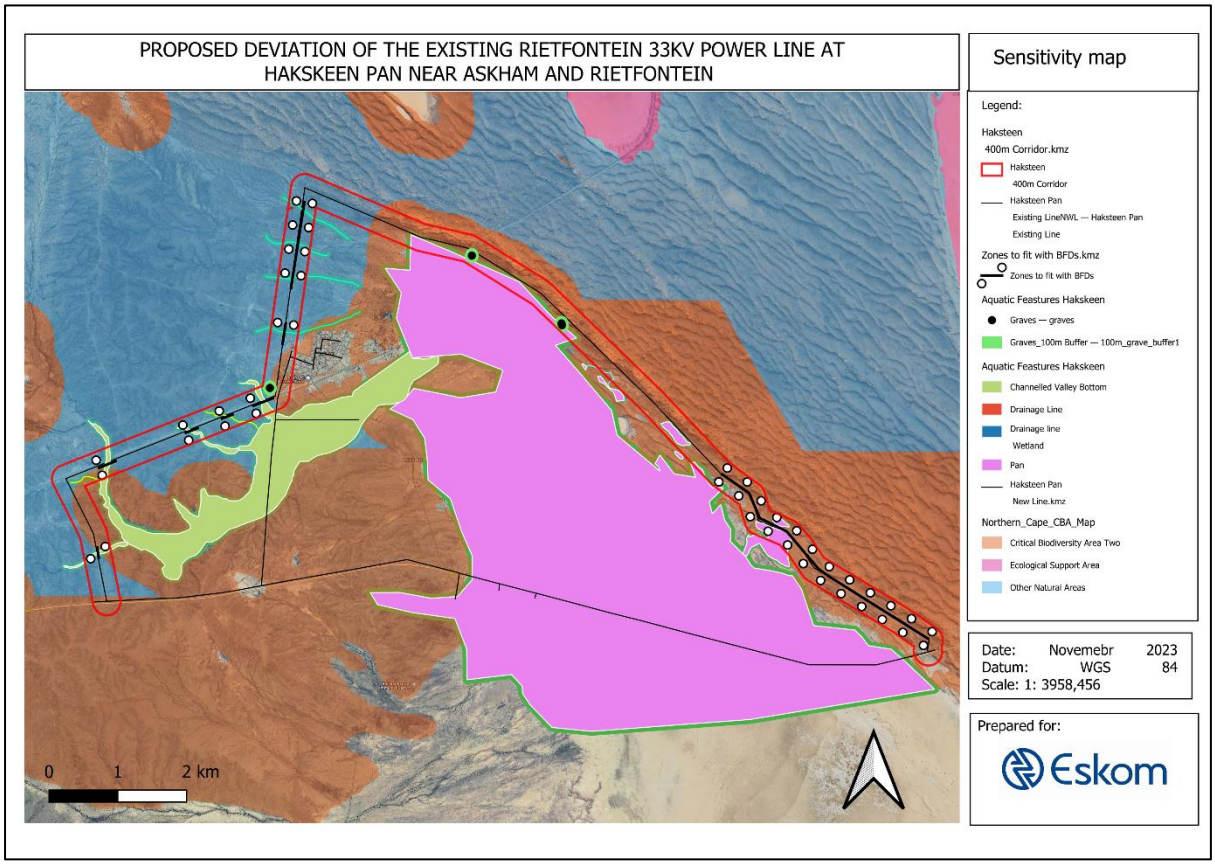

Figure 4: Sensitivity Map of the Proposed Haksheen Powerline Deviation (Demarcated in red) whereby the CBA 1 area is also denoted as the Pan.

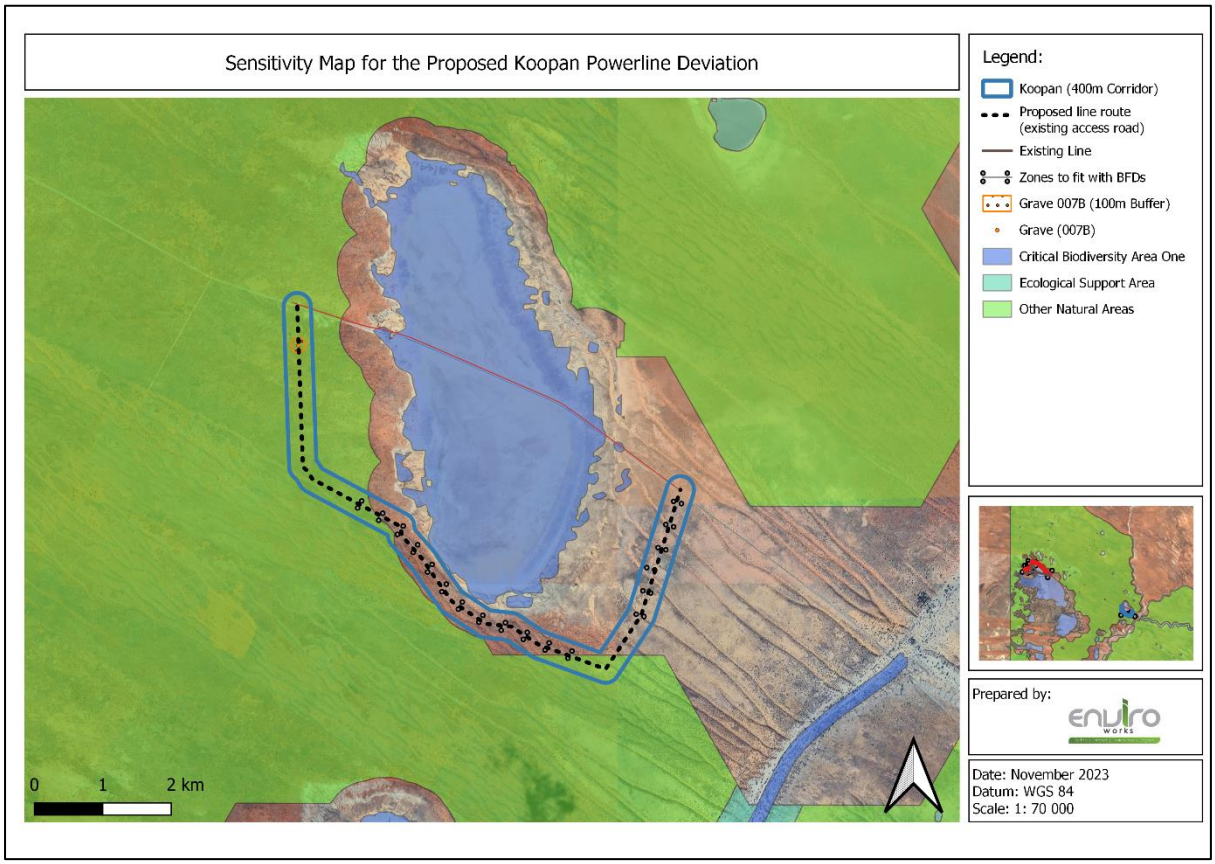

Figure 5: Sensitivity Map of the Proposed Koopan Powerline Deviation (Demarcated in red) whereby the CBA 1 area is also denoted as the Pan.

Figure 6: Visual illustration of the bird friendly wooden pole structures (D-DT-1870)

1.2 LISTED ACTIVITIES, POLICIES AND GUIDELINES ASSOCIATED WITH THE PROJECT

1.2.1 LISTED ACTIVITIES

Table 3: Triggered Listed Activities.

No.	Listed activity	Description of project activity
Listing Notice 3 (GN R384 as amended)		
12 g. (i) (ii)	The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of Indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. **g. Northern Cape** I On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning	The proposed rerouting of the powerline will require vegetation clearance of more than 300 square metres within an area zoned as open space.
14 g. (ii.) (c) (g) (ii) (ff) (hh)	The development of— (ii) infrastructure or structures with a physical footprint of 10 square metres or more; where such development occurs— (c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse; **g. Northern Cape** ii. Outside urban areas: (ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;	The proposed infrastructure is located outside an urban area and within a Critical Biodiversity Area (CBA).

1.2.2 Legal requirements for this project:

Eskom is obliged to apply for Environmental Authorisation (EA) for the triggered activities listed in Table 3 and to undertake a BA process in support of the application, in accordance with the procedure stipulated in the EIA Regulations, 2017, as amended.

1.3 FEASIBLE AND REASONABLE ALTERNATIVES

This section discusses the alternatives that will be considered as part of the BA. NEMA requires that alternatives to a proposed activity must be considered (NEMA, Section 24). Alternatives are different means of meeting the general purpose and need of a proposed activity. In the BA process, the consideration of alternatives is always important, should the proposed site or proposal not fit into the parameters of the EIA framework. The alternatives can be categorised as follows:

- Location/Site alternatives;
- Layout Alternatives;
- Technology Alternatives; and,
- No-Go alternative.

1.3.1 SITE ALTERNATIVES

No site alternative is proposed (see Appendix G). The layout of the proposed power line deviations has been designed with access to the infrastructure in mind. The chosen routes at Koopan and Hakskeen pan both have established access roads (in the form of two track farm roads) throughout the routes. These access roads are accessible by heavy maintenance vehicles which will improve repair time when a fault occurs. No additional access roads will therefore need to be constructed To keep the cost for the powerline deviation as low as possible the length of the new routes was also taken into consideration which contributed to the proposed new routes.

Location alternatives at Hakskeen pan was considered but because of the location of the existing powerline the chosen new route is the optimal route. An alternative route at Hakskeen pan will be more than double the length of the chosen route which will increase the cost of the project immensely.

Cabling was not considered for this project for a number of reasons. First, the cost of cabling, secondly the physical footprint (trenches needs to be dug for the entire length of the line route in order to lay the cables which increase the size of the impacted area), thirdly, Eskom's latest engineering standard recommend to only make use of cabling when an existing cable needs to be replaced and, fourthly, maintenance cost and time is more than a conventual overhead powerline.

The Preferred Alternative will be situated at the following co-ordinates:

Property Address	Hakskeen Pan site: The second site is located between the R31 and the South African/Namibian border, near the Rietfontein settlement. Koopan site: The site is located approximately 3.8km to the west of the R31 and R360 interchange. Prominent landmarks include the Andriesvale Town Hall and the Vinkie's Kalahari

	Experience located west of the R360. The site is adjacent to the Koopan wetland.
Hakskeen corridor start, middle and end point coordinates	D. 26° 44' 35.78" S; 20° 4' 58.83" E E. 26° 42' 4.19" S; 20° 8' 39.85" E F. 26° 44' 59.00" S; 20° 12' 12.10" E
Koopan corridor start, middle and end point coordinates	D. 26° 53' 33.14" S; 20° 34' 13.04" E E. 26° 55’ 59.26” S; 20° 35' 38.80" E F. 26° 55' 1.7" S 20° 37' 33.2" E

1.3.2 LAYOUT ALTERNATIVES

No site alternative is proposed. The layout of the proposed power line deviations has been designed with access to the infrastructure in mind. The chosen routes at Koopan and Hakskeen pan both have established access roads (in the form of two track farm roads) throughout the routes. These access roads are accessible by heavy maintenance vehicles which will improve repair time when a fault occurs. No additional access roads will therefore need to be constructed. To keep the cost for the powerline deviation as low as possible the length of the new routes was also taken into consideration which contributed to the proposed new routes.

Location alternatives at Hakskeen pan was considered but because of the location of the existing powerline the chosen new route is the optimal route. An alternative route at Hakskeen pan will be more than double the length of the chosen route which will increase the cost of the project immensely.

Cabling was not considered for this project for a number of reasons. First, the cost of cabling, secondly the physical footprint (trenches needs to be dug for the entire length of the line route in order to lay the cables which increase the size of the impacted area), thirdly, Eskom’s latest engineering standard recommend to only make use of cabling when an existing cable needs to be replaced and, fourthly, maintenance cost and time is more than a conventual overhead powerline.

1.3.3 LAYDOWN ALTERNATIVES

Laydown alternatives for the site include vacant erven in Rietfontein and Andriesvale on areas that are already disturbed. These will be considered closer to construction commencing should they be required.

1.3.4 TECHNOLOGY ALTERNATIVES

The use of steel mono pole structures has been considered; however, this technology is not financially feasible because the structures themselves are significantly more expensive than wood poles. The foundations of the mono poles are big 3m x 3m x 2m and require concrete which increase the footprint and the cost significantly.

1.3.5 NO-GO ALTERNATIVE

This alternative considers the option of ‘do nothing’ and maintaining the status quo will imply that the powerlines will remain within the pans and pose a major constraint during operational maintenance. Therefore, the no-go alternative will not be a desired outcome as it will not meet the growing energy requirements for the area.

1.4 ACTIVITY MOTIVATION

1.4.1 ZF MGCAWU DISTRICT MUNICIPALITY FINAL INTEGRATED DEVELOPMENT PLAN 2021/2022 – 2017-2022

The ZF Mgcawu District Municipality Final Integrated Development Plan provides a planning and strategic framework to assist the municipality in fulfilling its development mandate.

A key function of the ZF Mgcawu District Municipality is the provision of high-quality basic services and the infrastructure that can support the economic and social development of the region. According to Section 4.5: Dawid Kruiper Municipality: Priority Issues on pages 48 to 61 of the IDP, electricity is one of the core services that will be focused on within this municipality.

The proposed powerline deviations will support the IDP in the mandate by improving the supply of electricity to Rietfontein and surrounding areas which will support economic growth and in turn social development.

1.4.2 5TH GENERATION INTEGRATED DEVELOPMENT PLAN FOR 2022/2027 – DAWID KRUIPER LOCAL MUNICIPALITY

The Dawid Kruiper Local Municipality Integrated Development Plan is a five-year strategic plan that deals with the most critical development needs of the municipal area and the most critical governance needs of the organization.

The IDP have the following six Key Priority Areas (KPAs) with (10) Development Priorities, namely:

- Sewerage
- Human Settlements and Housing
- Energy and Electricity
- Roads, Transport and Stormwater Drainage
- Sanitation, Waste Management and Waste Removal
- Economic Growth and Job Creation
- Community Development and Facilities
- Administration and Institutional Capacity

As per the above objectives, electricity and energy provision and thus, the proposed powerline deviations form a major part of the key objectives and KPAs. Therefore, the proposed powerline deviations are an essential part of service delivery within the local and the surrounding areas.

1.4.3 ACTIVITY NEED AND DESIRABILITY

The town of Rietfontein currently functions as a border post with Namibia during the daytime hours of 08:00-16:30, providing access to and from south-eastern Namibia via Aroab on the C16 main road.

The main purpose of the proposed powerline deviations is to provide access to the powerlines for maintenance purposes. As explained in the Introduction, the applicant wishes to move the powerlines out of the pans which they currently pass. When the pans are waterlogged, the wooden pole structures are at risk of falling over due to the water in the pans, making maintenance impossible in terms of repairing any damage to the powerlines.

In events like this, the local town of Rietfontein will be without electricity as maintenance will be a struggle and the local community will be without power for a few hours to a few days. This in turn will affect business in the area.

1.4.4 SECTION 23 OF NEMA

Through the undertaking of a BA process by a competent EAP, informed by guidelines, the consideration of impacts and alternatives (advantages and disadvantages coupled thereto) has been made. Moreover, the conducting of Public Participation and Specialist investigations form part of the process, whilst mitigation measures and the need and desirability of the proposed project were interrogated. This ensured that all provisions of the Act were considered and as such Integrated Environmental Management were accounted for.

1.4.5 SECTION 2 OF NEMA

Through the undertaking of a BA process by a competent EAP, informed by guidelines, the consideration of impacts and alternatives (advantages and disadvantages coupled thereto) has been made. Moreover, conducting the PPP and Specialist Investigations formed part this BA process, whilst mitigation measures and the needs and desirability of the proposed project were interrogated. This ensured that all provisions of the Act were considered and as such Integrated Environmental Management were accounted for as follow:

(2) Environmental Management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural heritage and social interests equitably.

The goal of this BAR is to identify and mitigate potential socio-economic impacts in order to meet the terms of Section 24 of the Constitution.

(3) Development must be socially, environmentally and economically sustainable.

The overall goal of this BAR is to predict, identify and manage potential positive and negative impacts in the socio-economic, cultural-heritage and biophysical environments in order to meet the needs of present generations without compromising the needs of future generations which will give effect to sustainable development.

(4)(a) Sustainable development requires the consideration of all relevant factors including the following:

i. *That the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied;*

ii. *that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied;*

iii. *that the disturbance of landscapes and sites that constitute the nation´s cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied;*

iv. *that waste is avoided, or where it cannot be altogether avoided, minimised and reused or recycled where possible and otherwise disposed of in a responsible manner;*

v. *that the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;*

vi. *that the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised;*

vii. *that a risk averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; and,*

viii. *that negative impacts on the environment and on people´s environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.*

An Environmental Management Program Report (EMPr) was compiled to mitigate and manage all activities during the planning, construction and operational phases of the proposed developments.

(b) Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option.

All aspects, including socio-economic, cultural-heritage and biophysical were evaluated and assessed in order to minimise potential negative impacts which will give effect to Integrated Environmental Management, as set out in Chapter 5 of NEMA, 1998.

(c) Environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons.

A Public Participation Process (PPP) will be undertaken in terms of Section 41 of the NEMA EIA Regulations (GN R. 326), which came into effect on 07 April 2017 (as amended), in order to give effect to Section 32 of the Constitution in such a way that adherence is given to Section 24 of the Constitution.

(d) Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing must be pursued and special measures may be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination.

This will be taken into account during the operational phase of the activity.

(e) Responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle.

The EMPr will be applicable throughout the lifecycle of the project as it will form part of the EA.

(f) The participation of all Interested and Affected Parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured.

A PPP will be undertaken in terms of Section 41 of the NEMA EIA Regulations (GN R. 326), which came into effect on 07 April 2017 (as amended) in order to give effect to Section 32 of the Constitution in such a way that adherence is given to Section 24 of the Constitution.

(g) Decisions must take into account the interests, needs and values of all Interested and Affected Parties, and this includes recognising all forms of knowledge, including traditional and ordinary knowledge.

The Department of Forestry, Fisheries and the Environment (DFFE) decision making process has to be in accordance with the above.

(h) Community wellbeing and empowerment must be promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means.

Where feasible efforts should be made to employ Local Contractors that are compliant with Broad Based Black Economic Empowerment (BBBEE) criteria.

(i) The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.

This BAR does give effect to Section 5 of NEMA whereby all social, economic and environmental impacts of activities were considered, assessed, evaluated and mitigated.

(j) The right of workers to refuse work that is harmful to human health or the environment and to be informed of dangers must be respected and protected.

Human rights will be taken into account during all phases of the proposed project through implementing Eskom's Health and Safety procedures and policies. Eskom is legally obliged to comply with the Occupational Health and Safety Act (Act No. 85 of 1993) during all phases of the proposed project's lifecycle.

(k) Decisions must be taken in an open and transparent manner, and access to information must be provided in accordance with the law.

The decision will take place in an open and fair manner and give effect to Section 32 of the Constitution. I&APs will be notified of the decision in terms of the requirements as set out in Section 41 of the NEMA EIA Regulations (GN R. 326), 2017 (as amended).

(l) There must be intergovernmental coordination and harmonisation of policies, legislation and actions relating to the environment.

All relevant Governmental Authorities and Organs of State will be considered during the BA process to provide their inputs on the project.

(m) Actual or potential conflicts of interest between Organs of State should be resolved through conflict resolution procedures.

Actual or potential conflicts of interest between organs of state should/will be resolved through conflict resolution procedures.

(n) Global and international responsibilities relating to the environment must be discharged in the national interest.

Eskom is South Africa's primary electricity supplier and is wholly owned by the South African Government. Eskom's key role is to assist in lowering the cost of doing business in South Africa, enabling economic growth and security of supply through providing electricity in an efficient and sustainable manner, including its generation, transmission and distribution, while ensuring that this is done within acceptable benchmark standards.

Eskom aims to comply with the legislation, policies, conditions and requirements of key government stakeholders, including spheres of government.

Eskom is currently moving away from operating as a vertically integrated company that supplies electricity to South Africa and the Southern African Development Community (SADC) region. As the main provider of generation, transmission and distribution capacity in South Africa, Eskom supplies electricity to industrial, mining, commercial, agricultural and residential customers, as well as to redistributors.

Eskom's mission is to provide sustainable electricity solutions to grow the economy and improve the quality of life of the people in South Africa and in the region. Eskom is committed to safety, health, the environment and quality principles to ensure that no operating condition or urgency of service justifies exposing anyone to negative risks arising out of Eskom's business, causing an incident with health, safety, environmental and quality consequences. Eskom's commitment to environmental management is achieved through implementation of their Safety, Health, Environment, and Quality (SHEQ) 32-727 Policy which is compiled in accordance with the ISO 14001 standards.

Accordingly, global and international responsibilities relating to the environment will be discharged in the national interest.

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

Through the appointment of various specialists (Ecological, Heritage, Palaeontological, Agricultural, Aquatic and Avifaunal), mitigation measures have been compiled to ensure that the proposed project does not pose a detrimental impact to the environment.

(p) The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.

An EMPr was compiled in order to prevent or minimise any potential negative impacts to the environment. It will be the responsibility of the Applicant and Contractor to adhere to all measures set out in the EMPr, in order to give effect to Section 28 (1) of NEMA.

(q) The vital role of women and youth in environmental management and development must be recognised and their full participation therein must be promoted.

The recruitment selection process should seek to promote gender equality and the employment of woman wherever possible, particularly for less labour intensive work.

(r) Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure.

A Sensitivity Map (Appendix A) containing all vulnerable vegetation, water courses and ecosystems was prepared in order to determine that the proposed project will have no negative impact thereon.

1.5 APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

The following lists of Legislation, Policies and Guidelines from all spheres of Government are applicable to the Application as contemplated in the EIA Regulations:

Table 4: Applicable Legislation, Policies and/or Guidelines applicable to the Project.

Title of Legislation, Policy or Guideline	Applicability to the Project	Administering Authority	Date
National Environmental Management Act, 1998 (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations, 2017 published in Government Notice Regulation No. 327 and 324 (as amended by GN. 517 of 11 June 2021).	The proposed upgrade will trigger Listed Activities as outlined in GN R.324 and is subject to an Environmental Impact Assessment as per the National Environmental Management Act, 1998 (Act No. 107 of 1998).	National Department of Forestry, Fisheries and Environmental Affairs.	2021
Government Notice Regulation No. 326 of 07 April 2017 ((as amended by GN. 517 of 11 June 2021)	GN R. 326 provides the steps and requirements that need to be followed and included within the Environmental Impact Assessment.	National Department of Forestry, Fisheries and Environmental Affairs	2021
National Heritage Resources Act, 1999 (Act No. 25 of 1999)	In Section 38 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) the following categories are listed as triggers for a Heritage Impact Assessment; 38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake	South African Heritage Resources Agency/Heritage Northern Cape	1999

Title of Legislation, Policy or Guideline	Applicability to the Project	Administering Authority	Date
	a development categorised as a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length; b) the construction of a bridge or similar structure exceeding 50 m in length; c) any developments or other activity which will change the character of the site – (i) exceeding 5000 m² extent; or (ii) involving three or more existing erven or subdivisions thereof; or (iii) involving three or more erven or divisions thereof which has been consolidated within the past five years; or (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provisional heritage resources authority; (d) the re-zoning of a site exceeding 10 000 m² in extent; or (e) any other category of development provided		

Title of Legislation, Policy or Guideline	Applicability to the Project	Administering Authority	Date
	for in regulations by SAHRA or a provincial heritage resources authority. A Heritage Screener and a Phase 1 Heritage Impact Assessment was conducted for the project. Overall, based on the assessment and the outcomes from the specialist, it is not anticipated that the proposed powerline deviation will pose a negative impact on significant archaeological heritage, provided that the recommendations are implemented.		
National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)	Determination of biodiversity impacts. Should any protected plant species be observed on site an application to relocate the plants must be submitted. Only two protected species were recorded within the Koopan deviation route footprint including *Vachellia erioloba* and *Vachellia haematoxylon.* Both species have a threatened status of least concern but do require a tree removal permit should they be uprooted.	National Department of Forestry, Fisheries and Environmental Affairs	2004
National Environmental Management: Protected Areas Act [NEM:PAA], 2003 (Act No. 57 of 2003, as amended)	The proposed powerline deviations do not occur within a protected area.	National Department of Forestry, Fisheries and Environmental Affairs	2004
National Water Act, 1998 (Act No. 36 of 1998), as amended	A Water Use Authorisation will be applied for in terms of Section 21(c) and (i) water uses in terms of the NWA, due to the powerlines	Department of Water and Sanitation	1998

Title of Legislation, Policy or Guideline	Applicability to the Project	Administering Authority	Date
	occurring within the DWS regulated area, i.e. within a 500m radius from the boundary of a wetland.		
National Waste Act, (Act No. 59 of 2009, as amended)	No listed activities, as per the Regulations in terms of this act, will take place on site and therefore a waste licence will not be required. General waste will have to be removed to a registered landfill site of which is clearly stated in this BAR.	National Department of Forestry, Fisheries and Environmental Affairs	2004
National Environmental Management: Air Quality Act [NEM:AQA], 2004 (Act No. 39 of 2004, as amended)	During the construction phase of the proposed powerline deviation, dust could become a factor. However, if the activities are well planned and the mitigation measures are successfully implemented, the proposed activities contribution to air and noise pollution will become insignificant.	National Department of Forestry, Fisheries and Environmental Affairs 2004	2004
National Forests Act 84 of 1998	The National Forests Act provides for the protection of forests as well as specific tree species, quoting directly from the Act: “no person may cut, disturb, damage or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree or any forest product derived from a protected tree, except under a licence or exemption granted by the Minister to an applicant and subject to such	National Department of Forestry, Fisheries and Environmental Affairs	1998

Title of Legislation, Policy or Guideline	Applicability to the Project	Administering Authority	Date
	period and conditions as may be stipulated". A terrestrial biodiversity survey has been undertaken by a specialist, to ensure that no sensitive habitats are destroyed and to ensure that the correct mitigation measures are implemented. The development may require the removal of trees that may pose a risk to the integrity of the infrastructure being developed, but the EMPr will include measures to ensure that the relevant permits are obtained prior to the removal of trees, if applicable.		
Northern Cape Nature Conservation Act, 2009 (Act No. 9 of 2009)	During the construction phase of the proposed powerline deviation, trees along the route will need to be removed. A floral removal permit will need to be applied for prior to the removal of any protect tree species.	Northern Cape Agriculture, land reform and rural development	2009
Occupational Health and Safety Act [OHSA], 1993 (Act No 85 of 1993), as amended and Occupational Health & Safety Amendment Act (Act No. 181 of 1993)	The act was created to provide for the health and safety of persons at work and for the health and safety of persons in connection with the use of plant and machinery; the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work; to establish an advisory council for occupational	Department of Labour	1993

Title of Legislation, Policy or Guideline	Applicability to the Project	Administering Authority	Date
	health and safety; and to provide for matters connected therewith. This Act will not only apply to the persons who will be responsible for construction and operation of the powerlines, but it also applies to the public and more specifically the health and safety of the public during the construction and operational phases.		
ZF Mgcawu District Municipality Final Integrated Development Plan 2021/2022-2017-2022	The proposed powerline deviations fall within the ZF Mgcawu District Municipality and are in line with its IDP.	ZF Mgcawu District Municipality	2021/2022-2017-2022
5th Generation Integrated Development Plan for 2022/2027 – Dawid Kruiper Local Municipality	The proposed powerline deviations fall within the Dawid Kruiper Local Municipality, and it must be ensured that the proposed development is in line with the IDP.	Dawid Kruiper Local Municipality	2022/2027

1.6 WASTE, EFFLUENT AND NOISE MANAGEMENT

1.6.1 WASTE MANAGEMENT

The overall objective of waste management is to:

- Formalise waste handling, transfer and disposal activities associated with waste from the powerline route deviation;
- To prevent inappropriate management of waste and associated risk of pollution of the environment;
- To facilitate waste minimisation entailing avoidance, reduction, re-use, recycling or treatment before disposal;
- To streamline waste segregation, storage, disposal and promote resource recovery from waste;
- Contain, control and dispose of waste in accordance with the required waste management practices; and,
- To provide a framework for the selection of waste management service providers, to ensure proper disposal of waste, in line with the cradle to grave principles, where the generator is responsible for ensuring the proper handling of waste from creation to disposal.

Waste minimisation mitigation measures which are in-line with the aforementioned objectives for the construction and operational phases are included within the EMPr. The appointed Contractor will be responsible for removing all construction waste during the construction phase and Eskom will be responsible for removing waste during the operational phase (for maintenance activities). Waste generated during the construction phase will mostly consist of general and/or domestic waste which will be transported with a LDV or truck to the nearest registered landfill site (Rietfontein Landfill, Class G:C:B 16/2/7/D421/D1/Z1/P358).

1.6.2 EFFLUENT

During the construction phase ablution facilities will be provided in the form of portable chemical ablution facilities. These will be placed in such a way to mitigate potential environmental impacts. Once operational, the proposed powerlines will not generate effluent.

1.6.3 NOISE MANAGEMENT

Noise will be generated during the construction phase of the proposed development. During the construction phase noise will emanate from the following activities:

- Movement of construction vehicles on site;
- Presence of construction personnel working on site;
- Delivery of construction material; and
- The drilling of holes on site for the powerline foundation structures.

Once operational, noise will be limited to occasional maintenance activities. The powerlines itself does not produce noise.

Mitigation measures are outlined within the EMPr to assure noise impacts are adequately addressed and managed in order not to become a nuisance within the study area.

1.7 WATER USE AND ENERGY EFFICIENCY

1.7.1 WATER SUPPLY:

Municipal water will be used to supply potable water to the proposed activities during the construction phase. During the construction phase, water will be used for construction activities, including compaction of fill material and concrete mixing, as well as for domestic purposes (ablutions, drinking). Water will be sourced from the local municipality and will not exceed 50m^3 per day.
Once operational the proposed development will not require any water.

1.7.2 ENERGY EFFICIENCY:

This is not applicable to this application as it is for the re-routing of powerlines.

2 SECTION B: SITE/AREA/PROPERTY DESCRIPTION

2.1 PROPERTY DETAILS

2.1.1 PREFERRED ALTERNATIVE

Table 5: Property details of the Preferred Alternative.

Province	Northern Cape Province	
District Municipality	ZF Mgcawu District Municipality	
Local Municipality	Dawid Kruiper Local Municipality	
Ward Number(s)	16	
Farm name, number and portion	**Hakskeen Deviation:** Remaining Extent of Mier Farm No. 585; Portion 100 of Mier Farm No. 585; Portion 103 of Mier Farm No. 585; Portion 105 of Mier Farm No. 585; Portion 106 of Mier Farm No. 585 **Koopan Deviation:** Portion 2 of Uitkoms Farm No. 136	
SG Code	Remaining Extent of Mier Farm No. 585	C02800000000058500000
	Portion 100 of Mier Farm No. 585	C02800000000058500100
	Portion 103 of Mier Farm No. 585	C02800000000058500103
	Portion 105 of Mier Farm No. 585	C02800000000058500105
	Portion 106 of Mier Farm No. 585	C02800000000058500106
	Portion 2 of Uitkoms Farm No. 136	C02800000000013600002

2.2 GROUNDWATER, SOIL AND GEOLOGICAL STABILITY

The table below provides a summary of the groundwater, soil and geology stability of the study area.

Table 6: Groundwater, Soil and Geological Stability of the sites

Description	Hakskeen and Koopan	
Shallow water table (less than 1.5m deep)		**NO X**
Dolomite, sinkhole or doline areas		**NO X**
Seasonally wet soils (often close to water bodies)	**YES X**	
Unstable rocky slopes or steep slopes with loose soil		**NO X**
Dispersive soils (soils that dissolve in water)		**NO X**
Soils with high clay content (clay fraction more than 40%)	**YES X**	
Any other unstable soil or geological feature		**NO X**

An area sensitive to erosion		**NO X**

2.3 GROUNDCOVER AND SURFACE WATER

The groundcover and surface water present at each site is described in the following paragraphs.

Based on the Terrestrial Compliance Statement conducted, both the Hakskeen Pan and the Koopan deviation routes are mostly surrounded by natural shrubland, and where the specific pans are delineated, the land cover is classified as barren land due to the limited plant species that have grown in the pans.

The powerlines routes are situated mostly within the Kalahari Karroid Shrubland and Gordonia Plains Shrubland, but the Koopan deviation route also includes Auob Duneveld and Gordonia Duneveld.

No threatened species were recorded on the footprints during the site visit which is to be expected given that no species were identified by the DFFE Screening Tool. The vegetation types recorded on the footprints do not typically have a high abundance of threatened species and therefore it is unlikely that any threatened plant species are present on the footprints. However, two protected trees were recorded within the footprint of the Koopan deviation route footprint including *Vachellia erioloba* and *Vachellia haematoxylon.* Both species are of least concern but require a tree removal permit if they are to be uprooted.

Most of the footprints are in Other Natural Areas which have been confirmed due to the natural and largely undisturbed state of the vegetation. In addition, some areas (mostly those included in the Gordonia Duneveld) are included in a Critical Biodiversity Area Two (CBA 2). These have been confirmed as the dunes tend to be particularly sensitive to changes that result in restricted sand movement. It is recommended that development be restricted to the dune slacks to avoid dune compaction and removal of dune vegetation. Given the small footprint of the structures (300 mm), it is unlikely that the development will have any impact on the functioning of the CBA 2 or the Other Natural Area.

According to the Aquatic Species Compliance Statement, the Hakskeen pan deviation corridor is within 500m of two major types of wetlands, namely a Depressional wetland pan and a channelled valley bottom wetland. The Koopan deviation corridor is within 500 m of a depressional Wetland (pan).

The following groundcover is present on site:

Table 7: Groundcover of the sites

Natural veld – good condition X	**Natural veld with scattered aliens X**	Natural veld with heavy alien infestation	Veld dominated by alien species	Gardens
Sport Field	Cultivated Land	Paved Surfaces	Building or other Structures	**Bare Soil X**

The following surface water is present on/or adjacent to the site and alternative sites.

Table 8: Types of surface water present on site.

Perennial River		**No X**	

Non-Perennial River		**No X**	
Permanent Wetland		**No X**	
Seasonal Wetland	**Yes X**		
Artificial Wetland		**No X**	
Estuarine/Lagoon Wetland		**No X**	

2.4 ECOLOGICAL AND BIODIVERSITY

2.4.1 GENERAL CATCHMENT DESCRIPTIONS

A summary of available data on the study site is given in the table below (Table 9).

Table 9: General Catchment and Study Area descriptive data.

VARIABLE	VALUE	RESOURCE
Water Management Area	Lower Orange	Aquatic Compliance Statement
Major Rivers	Orange and Vaal	Aquatic Compliance Statement
Quaternary Catchment	D42D	Cape Farm Mapper 3
Mean Annual Run-Off	268 mm/annum	Aquatic Compliance Statement

2.4.2 VEGETATION TYPE

As discussed above, both the Hakskeen Pan and the Koopan deviation routes are largely surrounded by natural shrubland/grassland. Where the delineated pans are located, the land cover is classified as barren land due to the limited plant species that have grown in the pans.

Both areas comprise the Kalahairi Karroid Shrubland and the Gordonia Plains Shrubland, but the Koopan deviation also includes the Auob Dunevled and the Gordonia Duneveld.

2.4.2.1 FAUNA AND FLORA OF CONSERVATION CONCERN

According to surveys conducted, the development site's footprints do not host threatened species or species of conservation concern. However, two protected trees, *Vachellia erioloba* and *Vachellia haematoxylon*, were identified within the Koopan deviation route footprint, both having a least concern status but requiring a tree removal permit if uprooted.

On the other hand, the broader area is rich in avifauna, with 189 bird species identified, including 49 powerline-sensitive and 11 Red List species, indicating conservation concern. These powerline-sensitive species include likely residents and occasional visitors to the site. The site's location within the Nama Karoo and Savanna Biomes provides diverse bird habitats, especially around surface water resources like pans and wetlands.

Within the subject site, drainage lines are essential habitats for foraging, nesting, and roosting for powerline-sensitive birds and other species. Nearby rocky ridges, such as the Koopan vicinity, may also attract birds for nesting and roosting, though they are outside the subject site's boundaries.

The subject site's high sensitivity to avifauna, particularly regarding powerline collisions, is confirmed by the DFFE Screening Tool. It is home to species like the Lanner Falcon and Burchell's Courser and serves as habitats for Species of Conservation Concern (SCC), including those on the IUCN Red List of Threatened Species. Although the site is highly sensitive to potential powerline and infrastructure impacts, effective mitigation measures can reduce these impacts to a low level. Given the surrounding habitat, fauna species in the development footprint are likely to find refuge in the area.

2.5 ECOLOGICAL SENSITIVITY

Based on the overall site assessment, it is confirmed that the sensitivity for each theme (for each deviation route footprint) is as follows: “low” sensitivity for the Terrestrial Biodiversity Theme, “low” sensitivity for the Plant Species Theme, “low” for the Animal Species Theme and “low” sensitivity for the Aquatic Biodiversity theme.

2.6 CULTURAL AND HISTORICAL FEATURES

Based on the Heritage Screening Assessment undertaken by Jenna Lavin of CTS Heritage, some significant archaeological resources have been identified along the top of the dune field from a heritage resource perspective and it is recommended that this area be considered sensitive and in addition some burials have been identified within the proposed grid corridor.

Hakskeen Pan

A number of heritage resources have been identified within the Hakskeenpan section of the amended route. The LSA sites recorded are mostly located at the top of a dune range. It is highly likely that the Stone Age sites identified are probably related and form a network of sites. These sites were probably used several times over time, depending on the season and the availability of resources such as water. The Hakskeenpan is still an important source of water during the rainy season. A total of 2 burials were identified. A total of 3 suspected graves were identified within the footprint of the corridor site.

No significant resources were identified within the Koopan alignment other than the location of a single grave. Two cavities in the calcrete rock along the edges of Koopan were investigated for possible remains of archaeological artefacts. These cavities resemble rock shelters. No archaeological material was identified within the shelters. If archaeological material was present in the shelters, people have removed it by now. These shelters are not located within the development footprint. In terms of palaeontological sensitivity, the Kalahari Sands of the Gordonia Formation have a low sensitivity for impacts to significant palaeontology according to the SAHRIS Fossil Heritage Browser. It is noted that fossils within this formation are mainly associated with ancient pans, lakes and river systems and consist of palynomorphs, root casts (rhizomorphs) and burrows (e.g. termitaria), rare vertebrate remains (mammals, fish, ostrich eggshell, etc.), diatom-rich limestones, freshwater

stromatolites, freshwater and terrestrial shells (snails, bivalves), ostracods and charophytes. It is now recommended that the 'chance finds' method be used for the duration of the excavation.

The proposed grid alignments pass through the identified heritage resources of significance. However, the pylon footings are located approximately 100m from each other so that impacts on significant archaeology can be avoided. It is recommended that a 50m no development buffer is established around the identified LSA sites (sites 019, 020, 021, 022 and 025). It should be noted that the identified sites represent a fraction of the sites likely to be present. As such, the proposed route can proceed on condition that an archaeological survey of the final route is completed prior to construction to allow micro-siting of pylon placements to ensure that no impact occurs or, if impact cannot be avoided, to allow archaeological mitigation to be undertaken.

The field assessment also identified a number of burials within or in close proximity to the grid corridor. In order to preserve the sense of place associated with the final resting place of these burials, it is recommended that a no development buffer of 100m is established around these sites. The overhead lines may cross these buffers, but no pylon foundations may be constructed within this buffer area. Overall, based on the assessment and findings of the specialist, it is not anticipated that the proposed powerline deviation will have a negative impact on any significant archaeological heritage, provided that the following recommendations are implemented:

- The mitigation measures detailed in heritage report need to be followed.
- The final placement of the pylons will be subject to a site visit by an archaeologist prior to construction in order to micro site the footings to ensure that no significant archaeological resources are adversely affected.
- The incidental fossil finds procedure, in the heritage report, will be implemented throughout the construction phase.

  Although every care has been taken to identify sites of cultural significance during the survey of the study area, it is always possible that hidden or sub-surface sites may be overlooked during the evaluation. If any evidence of archaeological sites or remains (e.g. remains of stone-built structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils, burials or other categories of heritage resources are found during the proposed development, work in the vicinity of the find must cease and SAHRA must be notified immediately to determine the appropriate course of action.

2.7 SOCIO-ECONOMIC CHARACTER OF THE AREA

Rietfontein lies within the Dawid Kruiper Local Municipality and the ZF Mgcawu District Municipality. The town of Rietfontein functions as the Rietfontein Border Post with Namibia during the day hours of 08h00-16h30, providing access to and from south-eastern Namibia via Aroab on the C16 main road. Rietfontein is the capital of the Mier Region and home to civilised infrastructure such as the town hall, police station, day hospital, high school etc (Wikipedia).

The Dawid Kruiper Municipality is divided into 16 wards and covers an area of approximately 344 446 ha, including the Orange River which runs through most of the municipality. The municipality has a population of 114 000.

The main economic activities are concentrated in the following sectors:

- Transport and logistics: Road, rail and air networks
- Manufacturing industry
- Agriculture and agro-processing
- Knowledge economy
- SME development
- Construction industry
- Mining
- Renewable energy

According to information provided by the Dawid Kruiper Local Municipality website, the unemployment rate in the municipality was 26.19% in 2017, which represents an overall increase of 0.582% from 2007. It is also higher than the ZF Mgcawu Municipality. When compared to the Northern Cape Province, the municipality is lower than the provincial rate which was 30.52%.

The major constraints faced by the Northern Cape Province include access to basic services, volatile economic growth and high youth unemployment.

It is worth noting that the tourism industry is one of the largest industries in terms of investment growth, employment and diversification of services. It has been known to promote the property marker, specify residential and cluster projects. Based on the available information, the tourism industry has strong links with the major routes between Johannesburg and Upington, leading to Namibia and Botswana, and includes events, hunting and business tourism.

3 SECTION C: PUBLIC PARTICIPATION PROCESS

The following Section will provide a summary of the Public Participation Process that was followed (Please refer to Appendix: E) which has been undertaken in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998).

3.1 ADVERTISEMENT AND NOTICES

Proof of Placement of Advertisements and Site Notices have been provided (Appendix J).

3.2 INTERESTED AND AFFECTED PARTIES

The table below provides the details of key stakeholders as identified by the Client and EAP.

Table 10: Key Stakeholder Details.

TITLE, NAME & SURNAME	AFFILIATION	CONTACT DETAILS
Mr. Bernard Fourie	Remaining Extent of the Farm Mier No. 585	***Redacted***
Mr. Dawid Smith	Portion 100 of the Farm Mier No. 585	
Mr. C. Gilbert	Portion 103 of the Farm Mier No. 585	
Mr. Elias Du Plessis	Portion 105 of the Farm Mier No. 585	
Mr. Ebraim Gilbert	Portion 106 of the Farm Mier No. 585	
Mr. Colllin Louw	Portion 2 of the Farm Uitkoms No. 136	
Surrounding landowners		
Mr Jan Vilander	Portion 97 of Mier Farm No. 585	***Redacted***
Mr Isak Jacobus Van Wyk	Portion 98 of Mier Farm No. 585	
Mr Daiel Jacobus Beukes	Portion 99 of Mier Farm No. 585	
Mr Jakob Jakobus Bok	Portion 101 of Mier Farm No. 585	
Mr El John Trust	Portion 102 of Mier Farm No. 585	
Mr Jacoba Sylvia Snyders	Portion 109 of Mier Farm No. 585	
Mr Willem Eiman	Portion 108 of Mier Farm No. 585	
Mr Abraham Jakobus Snyders	Portion 107 of Mier Farm No. 585	
Mrs Hanneline Smit-Robinson	BirdLife South Africa	hanneline.smit-robinson@birdlife.org.za

3.3 ORGANS OF STATE

The following Organs of State have been identified by the EAP and the Client as Key Stakeholder.

Table 11: Organs of State Details.

ORGAN OF STATE	TITLE, NAME & SURNAME	TEL NO.	EMAIL ADDRESS
Department of Agriculture			
Department of Forestry, Fisheries and the Environment – Case Official			
Department of Forestry, Fisheries and the Environment – Biodiversity Directorate			

ORGAN OF STATE	TITLE, NAME & SURNAME	TEL NO.	EMAIL ADDRESS
Department of Transport and Public Works			
Eskom Holdings SOC Ltd.			
Northern Cape Heritage Resources Authority			
Dawid Kruiper Local Municipality – Municipal Manager			
Dawid Kruiper Local Municipality – Environmental Manager			
Ward Councillor			
ZF Mgcawu District Municipality – Municpal Manager/Environmental Manager			
Provincial Health Department: Environmental Health Co-ordinator			
South African Roads Agency SOC Ltd. (SANRAL)			
Department of Agricultural and Environmental Affairs and Rural Development and Land Reform Northern Cape – Environmental Manager			

4 SECTION D: IMPACT ASSESSMENT

4.1 IMPACT ASSESSMENT METHODOLOGY

For each potential impact, the EXTENT (Spatial scale), MAGNITUDE (degree of the impact), DURATION (time scale), PROBABILITY (occurrence), IRREPLACEABILITY (loss of resources) and the REVERSIBILITY (degree to which the proposed impact can be reversed) will be assessed by the EAP as well as the Specialists. The assessment of the above criteria will be used to determine the significance of each impact, with and without the implementation of the proposed mitigation measures. The scale to be used to assess these variables and to define the rating categories are tabulated in the Tables below.

Table 12: Evaluation components, ranking scales and descriptions (criteria)

Evaluation component	Ranking scale and description (criteria)
MAGNITUDE of NEGATIVE IMPACT (at the indicated spatial scale)	**10 - Very high**: Bio-physical and/or social functions and/or processes might be *severely* altered. **8 - High**: Bio-physical and/or social functions and/or processes might be *considerably* altered. **6 - Medium**: Bio-physical and/or social functions and/or processes might be *notably* altered. **4 - Low** : Bio-physical and/or social functions and/or processes might be *slightly* altered. **2 - Very Low**: Bio-physical and/or social functions and/or processes might be *negligibly* altered. **0 - Zero**: Bio-physical and/or social functions and/or processes will remain *unaltered.*
MAGNITUDE of POSITIVE IMPACT (at the indicated spatial scale)	**10 - Very high (positive)**: Bio-physical and/or social functions and/or processes might be *substantially* enhanced. **8 - High (positive)**: Bio-physical and/or social functions and/or processes might be *considerably* enhanced. **6 - Medium (positive)**: Bio-physical and/or social functions and/or processes might be *notably* enhanced. **4 - Low (positive)**: Bio-physical and/or social functions and/or processes might be *slightly* enhanced. **2 - Very Low (positive)**: Bio-physical and/or social functions and/or processes might be *negligibly* enhanced. **0 - Zero (positive)**: Bio-physical and/or social functions and/or processes will remain *unaltered.*
DURATION	**5 - Permanent** **4 - Long term**: Impact ceases after operational phase/life of the activity > 60 years. **3 - Medium term**: Impact might occur during the operational phase/life of the activity – 60 years. **2 - Short term**: Impact might occur during the construction phase - < 3 years. **1 - Immediate**
EXTENT (or spatial scale/influence of impact)	**5 - International**: Beyond National boundaries. **4 - National**: Beyond Provincial boundaries and within National boundaries. **3 - Regional**: Beyond 5 km of the proposed development and within Provincial boundaries. **2 - Local**: Within 5 km of the proposed development. **1 - Site-specific**: On site or within 100 m of the site boundary. **0** - None
IRREPLACEABLE loss of resources	**5 – Definite** loss of irreplaceable resources. **4 – High** potential for loss of irreplaceable resources. **3 – Moderate** potential for loss of irreplaceable resources. **2 – Low** potential for loss of irreplaceable resources. **1 – Very low** potential for loss of irreplaceable resources. **0 - None**
REVERSIBILITY of impact	**5 –** Impact **cannot** be reversed. **4 – Low** potential that impact might be reversed. **3 – Moderate** potential that impact might be reversed. **2 – High** potential that impact might be reversed. **1 –** Impact **will be** reversible. **0 –** No impact.
PROBABILITY (of occurrence)	**5 - Definite**: >95% chance of the potential impact occurring. **4 - High probability**: 75% - 95% chance of the potential impact occurring. **3 - Medium probability**: 25% - 75% chance of the potential impact occurring **2 - Low probability**: 5% - 25% chance of the potential impact occurring. **1 - Improbable**: <5% chance of the potential impact occurring.
Evaluation component	**Ranking scale and description (criteria)**
CUMULATIVE impacts	**High**: The activity is one of several similar past, present or future activities in the same geographical area, and might contribute to a very significant combined impact on the natural, cultural, and/or socio-economic resources of local, regional or national concern. **Medium**: The activity is one of a few similar past, present or future activities in the same geographical area, and might have a combined impact of moderate significance on the natural, cultural, and/or socio-economic resources of local, regional or national concern. **Low**: The activity is localised and might have a negligible cumulative impact. **None**: No cumulative impact on the environment.

Once the evaluation components have been ranked for each potential impact, the significance of each potential impact will be assessed (or calculated) using the following formula:

- **SP (Significance Points) = (Magnitude + Duration + Extent + Irreplaceability + Reversibility) x Probability**

The maximum value is 150 SP (Significance Points). The unmitigated and mitigated scenarios for each potential Environmental Impact should be rated as per the Table below.

Table 13: Definition of significance ratings (positive and negative)

Significance Points	Environmental Significance	Description
125 – 150	**Very high (VH)**	An impact of very high significance will mean that the project cannot proceed, and that impacts are irreversible, regardless of available mitigation options.
100 – 124	**High (H)**	An impact of high significance which could influence a decision about whether or not to proceed with the proposed project, regardless of available mitigation options.
75 – 99	**Medium-high (MH)**	If left unmanaged, an impact of medium-high significance could influence a decision about whether or not to proceed with a proposed project. Mitigation options should be relooked.
40 – 74	**Medium (M)**	If left unmanaged, an impact of moderate significance could influence a decision about whether or not to proceed with a proposed project.
<40	**Low (L)**	An impact of low is likely to contribute to positive decisions about whether or not to proceed with the project. It will have little real effect and is unlikely to have an influence on project design or alternative motivation.
+	**Positive impact (+)**	A positive impact is likely to result in a positive consequence/effect, and is likely to contribute to positive decisions about whether or not to proceed with the project.

4.2 POTENTIAL IMPACTS DURING PLANNING, DESIGN AND CONSTRUCTION PHASE

Construction Phase	Hakskeen Pan		Koopan		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:					
Nature of impact: Topsoil Removal and Soil Erosion	**Activity:** The clearing of topsoil and excavation for the establishment of building foundations may result in the destruction of fertile topsoil.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance rating:	L	L	L	L	-
Cumulative impact:	L	L	L	L	-
Proposed Mitigation:	• In the absence of a distinguishable topsoil layer, strip the uppermost 300 mm of soil; • Restrict clearing areas for roads and foundation excavations to the smallest area possible; • Remove topsoil approximately 300mm deep from establishment area and stockpile areas; • Topsoil stockpiles to be kept free from weeds; • Topsoil stockpiles to be placed on a levelled area and measures to be implemented to safeguard the piles from being washed away in the event of heavy rain/storm water; • Topsoil needs to be stored on designated areas only. This needs to be planned and indicated in the site-layout plan; • Ensure that topsoil is not mixed with subsoil and/or any other excavated material; • Provide containment and settlement facilities for effluents from concrete mixing and washing facilities; • Temporarily stored topsoil must be re-applied within 6 months, topsoil stored for longer needs to be managed according to a detailed topsoil management plan; • Provide spill containment facilities for hazardous materials like fuel and oil; and, • Topsoil must be used in all rehabilitation activities and may not be compacted to ensure that its plant support capacity remain of high quality.				N/A
Nature of impact: Handling of general waste materials on the development site, threat to fauna and visual impact.	**Activity:** The presence of personnel and construction operations on site will increase the likelihood of littering and the dumping of solid waste including general waste.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance rating:	M	L	M	L	-

Construction Phase	Hakskeen Pan		Koopan		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:					
Cumulative impact:	M	L	M	L	-
Proposed Mitigation:	• If the amount of hazardous waste and/or general waste will exceed 80m^3 and 100m^3 respectively, at any one time and for longer than 90 days, registration and adherence will be required in terms of the National Norms and Standards for the Storage of Waste published in GN No. 926 of 29 November 2013 and promulgated in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008); • An adequate number of scavenger proof litter bins are to be placed throughout the site. Two waste bins at least must be present, one (1) for hazardous waste and one (1) for non-hazardous waste at each working site. Dumping of waste on site is prohibited; • All bins must have a lid to prevent windblown litter; • General waste and hazardous waste must not be mixed and must be disposed of separately. If general waste is contaminated with hazardous waste all the waste must be treated as hazardous waste and disposed as such; • The importance of appropriately disposing waste must be highlighted in induction training for construction personnel; • Waste sorting and separation must form part of the environmental induction and awareness programme, to encourage personnel to collect wastepaper, glass and metal waste separately; • Keep all work sites including storage areas, offices and workshops neat and tidy; • Dedicate a demarcated and signposted storage area on site for the collection of construction waste; • Care must be taken to ensure that no waste falls off disposal vehicles on-route to the drop-off area. If needed, a tarpaulin can be utilised; • The burning or burying of solid waste on site is prohibited; • Littering by construction workers shall not be permitted; • Material removed from the development footprint must be appropriately disposed at an appropriately licensed waste disposal facility; • Portable ablution facilities must be utilised, and these must be serviced by a registered service provider, cleaned at least once a week, and safe disposal slips must be on file. • The Designated Environmental Officer (DEO) must inspect the development site and storage area at the end of each day for any litter. Litter should be cleaned up on a daily basis, even if not litter from construction personnel;				N/A

Construction Phase	Hakskeen Pan		Koopan		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:					
	• Hazardous waste must be disposed of at a hazardous treatment facility, records and proof of safe disposal must be kept; and, • A register must be kept of the quantities of waste disposed and proof of safe disposal (by the contractor), at an authorised waste disposal facility, must be retained by the Applicant.				
Nature of impact: Increased risk of veld fires.	**Activity:** Due to the presence of construction personnel in natural areas, fires can occur if not managed to the correct standard.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance rating:	M	L	M	L	-
Cumulative impact:	M	L	M	L	-
Proposed Mitigation:	• The Contractor shall take all reasonable and precautionary steps to ensure that fires are not started as a consequence of the activities on site; • Ensure the work site and the contractor's camp is equipped with adequate firefighting equipment. This includes at least one fire extinguisher of the appropriate type irrespective of the site; • Workers must be adequately trained in the handling of firefighting equipment, and can include but not limited to: o Regular fire prevention talks and drills; and, o Posting of regular reminders to staff; • No open fires are permitted anywhere on site; • Do not store any fuel or chemicals under trees; • Do not store gas and liquid fuel in the same storage area (hazardous substances to be stored in accordance with SANS); • Any fires that occur on site shall be reported to the ECO immediately and then to the relevant authorities; • In the event of a fire, the Contractor shall immediately employ such plant and personnel as is at his disposal and take all necessary action to prevent the spread of the fire and bring it under control; • Smoking is prohibited at the construction site; • All construction vehicles must be fitted with at least one fire extinguisher.				N/A
Nature of impact: Excessive dust will cause a visual impact and nuisance impact.	**Activity:** Construction activities such as excavating, mixing concrete and driving on site will cause dust. This may be exasperated during windy conditions.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.

Construction Phase	Hakskeen Pan		Koopan		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:					
Significance rating:	M	L	M	L	-
Cumulative impact:	M	L	M	L	-
Proposed Mitigation:	• Avoid conducting activities, which may produce dust, during windy conditions. If unavoidable, activities must be screened as far as possible with shade netting; • Leave areas of natural vegetation intact for as long as possible; • Open cement bags must be covered or appropriately closed to prevent cement powder blowing out; • Transport cement powder the shortest distance to where it will be mixed; • Soil stockpiles must not be higher than 2m; • Cover building sand and soil stockpiles with a tarpaulin or netting during windy conditions; and, • Dust suppression, i.e. watering, must be implemented on roads and stockpiles as required.				N/A

Planning, design and construction phase	Hakskeen pan		Koopan		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
POTENTIAL IMPACTS ON BIOLOGICAL ASPECTS:					
Nature of impact: Fauna and flora will be directly impacted as a result of construction activities and human presence at the site.	**Activity:** Clearing of natural vegetation will result in a range of issues including increasing the risk of erosion, reducing sensitive vegetation types, reducing habitats for animals, and increasing the risk of alien vegetation spreading.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance rating:	M	L	M	L	-
Cumulative impact:	M	L	M	L	-
Proposed Mitigation:	• Restrict vegetation clearance to the smallest area possible; • No hunting, snaring, shooting or egg collection by the construction staff may be allowed. This must be strictly enforced by the site manager and DEO. Any construction staff failing to adhere to this must be removed from site; • No feeding of any animals is allowed; • No terrestrial vegetation, outside of the development footprint, may be damaged during construction; • No flowers or plants are to be picked by construction staff; and, • No construction staff may remain at the site overnight; • Fires are prohibited; • All pans and other watercourses are to be avoided; • Sufficient fire management equipment must be on the site; • Dunes should be avoided as a far as practically possible and dune slack should be developed on; • Erosion measures must be in place should any erosion be noted during construction or operations; • All mitigation measures in the Aquatic Biodiversity Assessment must be adhered to; • No dumping of untreated sewage or hazardous waste into the adjacent ecosystem; • Effort should be made to avoid all protected trees. Should the aforementioned not be feasible, a Protected Tree Permit should be applied for should any protected trees be earmarked for removal; • All activities must remain within the designated footprint; • Alien Invasive Species (AIS) proliferation, which may affect adjacent natural habitat within surrounding areas, needs to be strictly managed via the "Monitoring, Control and Eradication Plan for Invasive Species on Eskom Land" document (to be approved by the designated Environmental Officer and signed off by a suitably qualified Botanical Specialist); • All areas disturbed outside of the footprint must be adequately rehabilitated according to a rehabilitation method statement (to be				

Planning, design and construction phase	Hakskeen pan		Koopan		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
	compiled by the designated Environmental Officer and then signed off by a suitably qualified Botanical Specialist); • Vehicles use must be restricted to designated roads; • A speed limit of 20km per hour should apply to the roads on site to reduce the chance of road fatalities; • Should any faunal species need to be translocated, a faunal or avifaunal (in the case of birds) specialist will need to be consulted; and, • All personnel working on site must undergo environmental inductions to ensure they are aware of the environmental sensitivities of the site.				
Nature of impact: Spillage from construction vehicles and waste dumping does not lead to contamination of watercourses and soils of the surrounding environment as wind and surface runoff can carry contaminated/polluted water downstream.	**Activity:** **Handling waste, general- and hazardous material on the site during construction**				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance rating:	M	L	M	L	-
Cumulative impact:	M	L	M	L	-
Proposed Mitigation:	• All rubble and litter should be cleared from the site and stored in designated waste bins and/or stockpile areas respectively; • Strict waste management should be implemented during construction; • Sufficient waste receptacles should be placed around the facility to encourage people to use them; • The principle of reduce, re-use and recycle should be followed; • Construction site should be kept clean and tidy; • Any waste should be disposed in a registered landfill and not be allowed to be dumped in the surrounding landscape; • No dumping of waste or any other materials is allowed within any stormwater channels, drainage lines or the watercourses; • Storage of material, waste, spoil and construction equipment on or in stormwater drainage or inside of demarcated protected areas – is strictly prohibited; • All surfaces used for waste storage should have an impermeable surface; • Drip trays to be placed beneath stationary vehicles and generators; • Machinery should be maintained and inspected for leaks. All hazardous chemicals should be handled and stored on impermeable surfaces;				

Planning, design and construction phase	Hakskeen pan		Koopan		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
	• Hazardous chemicals should be kept on an impermeable bund area; • Stormwater and run-off should be managed and diverted to not be in contact with waste; • Regularly inspect all construction vehicles for leaks. Re-fuelling of vehicles must take place on a sealed surface area surrounded by berms to prevent ingress of hydrocarbons into topsoil; • If any spills occur, they should immediately be cleaned up; • An emergency response plan should be available for any chemical spill or ecological damage; • Spill kits and material safety data sheets must be stored on site: In case of accidental spills of oil, petroleum products etc., good oil absorbent materials must be on hand to allow for the quick remediation of the spill. The kits should also be well marked and all personnel should be educated to deal with the spill. Vehicles must be kept in good working order and leaks must be fixed immediately on an oil absorbent mat. The use of a product such as Sunsorb is advised; • Proper toilet facilities must be available during construction. Chemical toilets must be provided which should always be well serviced and spaced as per occupational health and safety laws and placed outside the 1:100 year flood lines; • No dirty water runoff from the site must be permitted to reach the watercourses around the proposed site.				

Planning, design and construction phase	Hakskeen pan		Koopan		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
Nature of impact: Disturbance of soil that creates opportunity for invasion which may lead to significant alien invasive species establishment and spread.	**Activity:** Construction activities and the spread of Alien Invasive Species.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance rating:	L	L	L	L	-
Cumulative impact:	M	L	L	L	-
Proposed Mitigation:	• Construction activities should be limited to the smallest possible area; • Construction vehicles should use existing authorised service roads; • Implement suitable alien invasive species establishment prevention measures during the construction phase such as proper storage, transport and disposal of plant material and minimising disturbance to the areas surrounding the development footprint; • Alien invasive vegetation material cleared during construction activities must be adequately contained and disposed of at a suitable, certified 'green waste' disposal site to prevent further spreading; • Areas around the proposed project footprint must be adequately rehabilitated to prevent significant alien invasive species establishment; and, • Herbicides are to be avoided.				
Nature of impact: Development of the deviation routes may result in erosion on site and within 500m of wetlands. Stormwater may be diverted due to the installation of the structures	**Activity:** Construction, erosion control & storm water management				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance rating:	M	L	M	L	-
Cumulative impact:	M	L	M	L	-
Proposed Mitigation:	• Implement suitable erosion prevention measures during the construction phase; • Soil erosion must be controlled as an ongoing management strategy throughout the various phases of the proposed development activities; • Make use of surface erosion control measures within disturbed areas to avoid erosion in times of high risk (e.g., rain season and time of high wind speeds); • Stormwater management along any roadways and paths to reduce gulley erosion formation;				

Planning, design and construction phase	Hakskeen pan		Koopan		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
	• Stormwater management should prevent excessive sediment to be carried into drainage channels and the natural environment; • Removal of debris and other obstructing materials from the site must take place and erosion preventing structures must be constructed. This is done to prevent damming of water and increasing flooding danger; • Disturbed areas, that will not form part of the operational footprint but which were disturbed as part of the construction activities, should be rehabilitated and re-vegetated using site-appropriate vegetation and/or seed mixes, to prevent gulley erosion; • Sheet runoff from cleared areas, paved surfaces and access roads needs to be curtailed; • No materials of any kind are allowed to be stored in the stormwater channels. Areas around the proposed project footprint, must be adequately rehabilitated to prevent significant erosion; and, • Soil disturbance must be kept to a minimum within and around the development footprint.				
Nature of impact: Clearance of vegetation and soil, general construction, and development of infrastructure within 500m of a wetland may result in changes to drainage patterns and siltation in downstream wetlands	**Activity:** Construction activities including clearance of vegetation and changes to hydrology due to development within the regulated area of a watercourse.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance rating:	M	L	M	L	-
Cumulative impact:	M	L	M	L	-
Proposed Mitigation:	• The development footprint must remain as small as practically possible; • All buffers as stated in Section 6.4 pf the Aquatic Biodiversity Compliance Statement must be adhered to; • All bare areas must be rehabilitated via a Revegetation Method Statement; • Vehicles must use already developed roads as far as possible. • Dust control mechanisms must be implemented during the construction phase; • All stockpiles must be stored outside of wetland buffers; • Stockpiles must be covered in periods high wind and rain.				

Planning, design and construction phase	Hakskeen pan		Koopan		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
POTENTIAL IMPACTS ON AVIFAUNAL SPECIES ASPECTS:					
Nature of impact: Mortality of powerline sensitive avifauna species due to collisions with the 33 kV powerline	**Activity:** Mortality of powerline sensitive avifauna species due to collisions with the 33 kV powerline.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance rating:	H	L	H	L	-
Cumulative impact:	H	M	H	M	-
Proposed Mitigation:	• The bird flight diverters should be installed on both new sections of the powerline, according to the applicable Eskom standard. These devices must be installed as soon as the conductors are strung; and, • Only approved Bird/raptor friendly pole designs are to be used.				
Nature of impact: Mortality of powerline sensitive avifauna due to electrocutions on the 33 kV powerlines	**Activity:** Mortality of powerline sensitive avifauna due to electrocutions on the 33 kV powerlines				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance rating:	H	L	H	L	-
Cumulative impact:	H	M	H	M	-
Proposed Mitigation:	• The bird flight diverters should be installed on both new sections of the powerline, according to the applicable Eskom standard. These devices must be installed as soon as the conductors are strung; and, • Only approved Bird/raptor friendly pole designs are to be used.				
Nature of impact: Displacement of powerline sensitive avifauna due to disturbance associated with construction of the 33kV overhead powerline associated infrastructure	**Activity:** Displacement of powerline sensitive avifauna due to disturbance associated with construction of the 33kV overhead powerline associated infrastructure				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance rating:	L	L	L	L	-
Cumulative impact:	M	L	M	L	-
Proposed Mitigation:	• Decommissioning activity should be restricted to the immediate footprint of the infrastructure; • Access to the remainder of the site should be strictly controlled to prevent unnecessary disturbance of powerline sensitive avifauna; • Measures to control noise and dust should be applied according to current best practice in the industry; and,				

Planning, design and construction phase	Hakskeen pan		Koopan		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
	• Maximum use should be made of existing access roads and the construction of new roads should be kept to a minimum.				

Planning, design and construction phase	Hakskeen pan		Koopan		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
POTENTIAL IMPACTS ON AGRICULTURAL ASPECTS:					
Nature of impact: Risk posed to agricultural activities	**Activity:** Risk posed to agricultural activities				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance rating:	L	L	L	L	-
Cumulative impact:	M	L	M	L	-
Proposed Mitigation:	• Restrict the proposed development to the smallest footprint possible and do not disturb/alter areas outside the development; • Ensure that access conductor lines are kept clear, and that construction and operational activities do not interfere with agricultural activities; • Erosion risks are low due to the low rainfall, but pans are associated with Sodic soils, which are highly dispersive. During the removal of poles, there is a risk of erosion. Therefore, rehabilitation will be crucial to avoid gully erosion. It is further recommended that compost be added to the topsoil during rehabilitation (specific for Hakskeenpan).				
POTENTIAL IMPACTS ON CULTURAL-HISTORICAL ASPECTS:					
Nature of impact: Damage and destruction of artefacts and/or heritage structures during construction activities.	**Activity:** The presence of construction workers and construction activities can result in the discovery of cultural and historical artefacts and/or damage to heritage structures.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance rating:	L	L	L	L	-
Cumulative impact:	L	L	L	L	-
Proposed Mitigation:	• The mitigation measures (proposed buffers) detailed in Table 1 and mapped in Figures 8.1, 8.2 and 8.3 of the Heritage Impact Assessment are to be implemented; • The final pylon placements are subjected to a walkdown by an archaeologist prior to construction to microsite the footings so that significant archaeological resources are not negatively impacted; • If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils, burials or other categories of heritage resources are found during the				N/A

Planning, design and construction phase	Hakskeen pan		Koopan		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
	proposed development, work must cease in the vicinity of the find and SAHRA must be alerted immediately to determine an appropriate way forward.				

Planning, design and construction phase	Hakskeen pan		Koopan		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
POTENTIAL VISUAL IMPACTS:					
Nature of impact: Impact on the area's sense of place.	**Activity:** The movement of construction vehicles, machinery and personnel on site shall result in a visual impact for surrounding land users and residents. Furthermore, the storage of construction materials shall result in disturbance and an unsightly character.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance rating:	L	L	L	L	-
Cumulative impact:	M	L	M	L	-

Proposed Mitigation:	• Access roads are to be kept clean;
	• Access roads should be followed at all times;
	• Litter should be strictly controlled, as the spread thereof through wind could have a very negative visual impact;
	• Mitigation of visual impacts associated with the construction phase would entail proper planning, management and rehabilitation of the construction site. Mitigation measures include the following:
	  ○ Reduce the time of construction through careful planning of logistics and ensure the productive implementation of resources;
	  ○ Limit disturbance of the environment to the development footprint;
	  ○ Limit construction activities to business hours (07:00 – 17:00); and,
	• Avoid shiny materials in structures. Where possible shiny metal structures should be darkened or screened to prevent glare.
					N/A

POTENTIAL IMPACTS ON NOISE ASPECTS:					
Nature of impact: Noise nuisance generated by construction works, vehicles and personnel.	**Activity:** The operating of vehicles and machinery on site results in the generation of noise which could disturb surrounding land users and residents.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance rating:	M	L	M	L	-
Cumulative impact:	M	L	M	L	-
Proposed Mitigation:	• Limit working hours (07:00 – 17:00); • No hooting by construction staff;				N/A

Planning, design and construction phase	Hakskeen pan		Koopan		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
	• Staff are to conduct themselves in an orderly manner and to refrain from shouting. A Code of Conduct should be drawn up in this regard; • Any complaints received by the Contractor regarding noise will be recorded and communicated to the Environmental Control Officer; • All stationary noisy equipment such as compressors and pumps should be contained behind acoustic covers or screens where possible; • The regular inspection and maintenance of equipment must be undertaken to ensure that all components are functioning optimally; • Where recurrent use of machinery is frequent, machines should be shut down during intermediate periods; • Fit silencers to equipment where feasible; and, • No loud music is permitted on the site or laydown area.				

4.3 POTENTIAL OPERATIONAL PHASE IMPACTS

Operational Phase	Hakskeen pan		Koopan		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:					
Nature of impact: The general operation of the powerline may result in improper stormwater management and alien invasive species establishment.	**Activity:** General operation of the powerline.				No operational phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance rating:	L	L	L	L	-
Cumulative impact:	L	L	L	L	-
Proposed Mitigation:	• Regular inspections (when maintenance takes place) will be undertaken of any access roads and stormwater management drains for signs of erosion and sedimentation; • Operational site should be kept clean and tidy; • Vehicles should be restricted to travelling only on designated roadways to limit the ecological footprint of the proposed development activities; • No dumping of waste or any other materials is allowed within the watercourses or their regulated areas; • Vegetation clearing shall only be done via an approved maintenance management plan • If any spills occur, they should be immediately cleaned up.				N/A
Nature of impact: Increased risk of veld fires.	**Activity:** Short circuits, overcharging and/or thermal runaway could result in a fire or explosion. Maintenance activities including hot works (such as welding and grinding) could result in veld fires if not managed properly.				No operational phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance rating:	M	M	M	M	-
Cumulative impact:	M	L	M	L	-
Proposed Mitigation:	• Eskom must draw up and implement a Maintenance Management Schedule which adheres to the relevant industry standards, and ensure that the equipment is well maintained; • Maintenance personnel must be adequately trained in the handling of firefighting equipment, and can include but not limited to: • Regular fire prevention talks and drills; • Posting of regular reminders to staff; • Do not store any flammable materials anywhere near where the hot works are to be undertaken; • In the event of a fire, the maintenance personnel shall immediately employ such plant and personnel as is at his disposal and take all necessary action to prevent the spread of the fire and bring the fire under control; • Before conducting hot works, work areas must be inspected for potential combustible materials such as dry vegetation; • Personnel must take cognisance of the direction sparks are going and ensure that they are not directed towards combustible materials. Screens should be used where required; and,				

Operational Phase	Hakskeen pan		Koopan		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
	• Ensure sufficient firefighting equipment is available on site. Maintenance staff must have an extinguisher at hand when conducting hot works.				
POTENTIAL IMPACTS ON SOCIO-ECONOMIC ASPECTS:					
Nature of impact: Financial and social benefits for Rietfontein and surrounds.	**Activity:** The proposed powerline deviations will stabilise the electricity supply to Rietfontein and surrounds, reducing the need for loadshedding and ensuring sufficient electricity supply for the expected growth in Rietfontein.				Rietfontein will continue to experience an unstable electricity supply and will experience a constrained electricity supply in the future until the conventional strengthening projects can be implemented. Maintenance will also be a continuous issue.
Significance rating:	MH (+)		MH (+)		MH
Cumulative impact:	MH (+)		MH (+)		MH
Proposed Mitigation:	• No mitigation as impact is positive.				• Eskom must implement the conventional strengthening projects as soon as possible.
	•				•

Operational Phase	Hakskeenpan		Koopan		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
POTENTIAL IMPACTS ON NOISE:					
Nature of impact: Noise nuisance generated by maintenance activities.	**Activity:** Maintenance works will create noise due to maintenance activities and the presence of personnel on site. This may disturb surrounding land users and residents.				No operational phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance rating:	L	L	L	L	-
Cumulative impact:	L	L	L	L	-
Proposed Mitigation:	• Maintenance activities, including works on the powerlines and associated structures, must be restricted to typical working hours, 07:00 – 19:00 (week days), and 08:00 – 13:00 (Weekends, if permitted) except for emergency situations; • Ensure that employees conduct themselves in an acceptable manner while on site; • Noisy activities should be screened where possible; • No hooting on site; and, • No loud music is permitted on site.				N/A
POTENTIAL IMPACTS ON VISUAL:					
Nature of impact: Impact on the sense of place for surrounding users.	**Activity:** The placement of the powerline infrastructure may create a visual impact for the surrounding land users and residents.				If not constructed, no visual impacts will occur.
Significance rating:	L	L	L	L	P (+)
Cumulative impact:	L	L	L	L	P (+)
Proposed Mitigation:	• Avoid shiny materials in structures. Where possible shiny metal structures should be darkened or screened to prevent glare.				N/A
POTENTIAL IMPACTS ON BIOLOGICAL ASPECT:					
Nature of impact: Impact on the surrounding aquatic ecosystem.	**Activity:** The general maintenance of the powerline may result in impacts on aquatic ecosystems				No operational phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance rating:	M	L	M	L	-
Cumulative impact:	M	L	M	L	-
Proposed Mitigation:	• The site where maintenance work is being conducted should be kept clean and tidy. • Vehicles should be restricted to travelling only on designated roadways to limit the ecological footprint of the proposed development activities. • No dumping of waste or any other materials is allowed within the watercourses or their regulated areas; and, • If any spills occur, they should be immediately cleaned up.				N/A

4.4 POTENTIAL DECOMMISSIONING PHASE IMPACTS

Decommissioning Phase	Hakskeen Pan		Koopan		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:					
Nature of impact: Handling of general waste materials on the development site, threat to fauna and visual impact.	**Activity:** The presence of personnel and construction operations on site will increase the likelihood of littering and the dumping of solid waste.				No decommissioning phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance rating:	M	L	M	L	-
Cumulative impact:	M	L	M	L	-
Proposed Mitigation:	• An adequate number of scavenger proof litter bins are to be placed throughout the site. Two waste bins at least must be present, one (1) for hazardous waste and one (1) for non-hazardous waste at each working site. Dumping of waste on site is prohibited; • All bins must have a lid to prevent windblown litter; • General waste and hazardous waste must not be mixed and must be disposed of separately. If general waste is contaminated with hazardous waste all the waste must be treated as hazardous waste and disposed as such; • The importance of appropriately disposing waste must be highlighted in induction training for construction personnel; • Waste sorting and separation must form part of the environmental induction and awareness programme, to encourage personnel to collect wastepaper, glass and metal waste separately; • Keep all work sites including storage areas, offices and workshops neat and tidy; • Dedicate a demarcated and signposted storage area on site for the collection of construction waste; • Care must be taken to ensure that no waste falls off disposal vehicles on-route to the drop-off area. If needed, a tarpaulin can be utilised; • The burning or burying of solid waste on site is prohibited. Do not burn PVC pipes or other plastic materials, as this is regarded as hazardous waste; • Littering by construction workers shall not be permitted; • Material removed from the development footprint must be appropriately disposed at an appropriately licensed waste disposal facility; • Portable ablution facilities must be utilised, and these must be serviced by a registered service provider, cleaned at least once a week, and safe disposal slips must be on file. • The DEO must inspect the development site and storage area at the end of each day for any litter. Litter should be cleaned up on a daily basis, even if not litter from construction personnel; • Hazardous waste must be disposed of at a hazardous treatment facility, records and proof of safe disposal must be kept; and,				N/A

Decommissioning Phase	Hakskeen Pan		Koopan		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:					
	• A register must be kept of the quantities of waste disposed and proof of safe disposal (by the contractor), at an authorised waste disposal facility, must be retained by the Applicant.				
Nature of impact: Excessive dust will cause a visual impact and nuisance impact.	**Activity:** Decommissioning activities such as excavating, demolishing structures concrete and driving on site will cause dust. This may be exasperated during windy conditions.				No decommissioning phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance rating:	M	L	M	L	-
Cumulative impact:	M	L	M	L	-
Proposed Mitigation:	• Avoid conducting activities, which may produce dust, during windy conditions. If unavoidable, activities must be screened as far as possible with shade netting; • Leave areas of natural vegetation intact for as long as possible; • Open cement bags must be covered or closed to prevent cement powder blowing out; • Transport cement powder the shortest distance to where it will be mixed; • Soil stockpiles must not be higher than 2m; • Where feasible, building sand and soil stockpiles can be covered with a tarpaulin or netting during windy conditions; and, • Dust suppression, i.e. watering, must be implemented on roads and stockpiles as required.				N/A
POTENTIAL IMPACTS ON CULTURAL-HISTORICAL ASPECTS:					
Nature of impact: Damage and destruction of artefacts and/or heritage structures during construction activities.	**Activity:** The presence of construction workers and construction activities can result in the discovery of cultural and historical artefacts and/or damage to heritage structures.				No decommissioning phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance rating:	L	L	L	L	-
Cumulative impact:	L	L	L	L	-
Proposed Mitigation:	• Excavations must be limited to the development footprint area; • Induction training must include protocol for 'chance finds' and must outline measures for reducing the possibility of causing damage to heritage features; and, • Should any heritage resources (including but not limited to fossil bones, coins, indigenous and/or colonial ceramics, any articles of value or antiquity, stone artefacts or bone remains, structures and other built features, rock art and rock engravings) be exposed during excavation for the purpose of decommissioning, activities in the vicinity of the finding must be stopped. A trained palaeontologist or heritage specialist must be notified to assess the finds, and this must then be reported to Heritage Northern Cape.				N/A
POTENTIAL VISUAL IMPACTS:					
Nature of impact:	**Activity:**				No decommissioning phase impacts are associated with the

Decommissioning Phase	Hakskeen Pan		Koopan		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:					
Impact on the area's sense of place.	The movement of construction vehicles, machinery and personnel on site shall result in a visual impact for surrounding land users and residents. Furthermore, the storage of construction materials shall result in disturbance and an unsightly character.				no-go alternative thus no assessment has been undertaken.
Significance rating:	L	L	L	L	-
Cumulative impact:	M	L	M	L	-

Proposed Mitigation:	• Access roads are to be kept clean;
	• Access roads should be followed at all times;
	• Litter should be strictly controlled, as the spread thereof through wind could have a very negative visual impact;
	• Mitigation of visual impacts associated with the decommissioning phase would entail proper planning, management and rehabilitation of the decommissioned site. Mitigation measures include the following:
	  ○ Reduce the time of decommissioning through careful planning of logistics and ensure the productive implementation of resources;
	  ○ Limit disturbance of the environment to the development footprint;
	  ○ Limit construction activities to business hours (07:00 – 17:00); and,
	• Avoid shiny materials in structures. Where possible shiny metal structures should be darkened or screened to prevent glare.
					N/A

POTENTIAL IMPACTS ON NOISE ASPECTS:					
Nature of impact: Noise nuisance generated by construction works, vehicles and personnel.	**Activity:** The operating of vehicles and machinery on site and the decommissioning of infrastructure will result in the generation of noise which could disturb surrounding land users.				No decommissioning phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance rating:	M	L	M	L	-
Cumulative impact:	M	L	M	L	-
Proposed Mitigation:	• Limit working hours (07:00 – 17:00); • No hooting by construction staff; • Staff are to conduct themselves in an orderly manner and to refrain from shouting. A Code of Conduct should be drawn up in this regard; • Any complaints received by the Contractor regarding noise will be recorded and communicated to the ECO; • All stationary noisy equipment such as compressors and pumps should be contained behind acoustic covers or screens where possible; • The regular inspection and maintenance of equipment must be undertaken to ensure that all components are functioning optimally; • Where recurrent use of machinery is frequent, machines should be shut down during intermediate periods; • Fit silencers to equipment where feasibly; and, • No loud music is permitted on the site or laydown area.				N/A

4.5 ENVIRONMENTAL IMPACT STATEMENT

With regards to the environmental impacts during the construction phase, the initial assessment suggests that without mitigation measures, the impacts would mainly fall into the “Low” to "moderate" category. This is in contrast to the avifaunal assessment which remains highly sensitivity due to the likelihood of potential impacts from powerlines and other related infrastructure. However, with the implementation of mitigation measures, the majority of these impacts can be effectively reduced to an overall "Low" level.

The relocation of the power lines, while necessary, will involve the clearing of over 300m² of vegetation within a Critical Biodiversity Area (CBA). The CBA consists mainly of Kalahari Karroid Scrubland and Gordonia Plains Scrubland, with the Koopan area also including Auob Duneveld and Gordonia Duneveld. No threatened species were recorded within the footprints during the site visit. Only two protected species, *Vachellia erioloba* and *Vachellia haematoxylon*, were identified within the footprint of the Koopan deviation route, both of which are considered 'least concern' but require a tree removal permit if uprooted.

Several specialist studies have collectively concluded that the impacts of the proposed power line deviation are acceptable and can be adequately mitigated. The project aims to facilitate proper maintenance of the power lines, thereby reducing the likelihood of prolonged power interruptions in Rietfontein and the surrounding area. As a result, the socio-economic impact in the Rietfontein area is expected to be positive, with potential local employment opportunities during the construction phase and improved stability of power supply during operation.

Consideration of alternative sites and technologies were limited due to feasibility investigations completed by Eskom. Alternative sites and technologies were not investigated as they were already found unfeasibly by Eskom to the significant financial implications. In light of these factors, the Environmental Assessment Practitioner (EAP) recommends approval of the proposed deviation routes for the Hakskeen pan and the Koopan, with the understanding that, with appropriate mitigation measures, the overall impact of the project will be net positive and within acceptable limits.

4.6 GAPS IN KNOWLEDGE

The BA process is being undertaken prior to the availing of certain information which would be derived from the project design. As such, technical aspects included herein derive from a range of sources including pre-feasibility engineering and through personal communication with the design team. Given that the BA process is one of several investigations being done, milestones and key outputs for each of these may not always be available for interrogation into the BA process. Detailed designs of the powerline route will be finalized and will be made available to the DFFE for approval, prior to construction commencing. As such, the DFFE and other commenting and decision-making Authorities are required to generate their decision based on the information available to the study at the time, whilst measures can be adopted to manage any changes as conditions within decisions are made.

Enviroworks is an independent environmental consulting firm and as such, all processes and attributes of the BA are addressed in a fair and unbiased fashion. It is believed that through the running of a transparent and

participatory process, risk associated with assumptions, uncertainties and gaps in knowledge can be, and were, minimised.

4.7 ASSUMPTIONS

The following assumptions can be made:

- All information provided by the Applicant (Eskom) to the EAP was correct and valid at the time it was provided;
- The public will receive a fair and recurring opportunity to participate in the EIA process, through the provision of Public Participation timeframes stipulated in the Regulations;
- The need and desirability was based on strategic national, provincial and local plans and policies which reflect the interests of both statutory and public viewpoints;
- The EIA process is a project-level framework and is limited to assessing the environmental impacts associated with the project phases of the activity being applied for only; and,
- Strategic level decision making is achieved through co-operative governance with sustainable development principles underpinning all decision-making.

4.8 UNCERTAINTIES

Given that an EIA involves prediction, uncertainty forms an integral part of the process. Two types of uncertainty are associated with the EIA process, namely process-related and prediction related. The FAO (2010) cites types of uncertainty as discussed by De Jongh in Wathern. These are summarised as follow:

- **Uncertainty of prediction** is critical at the data collection phase as final certainty will only be resolved on implementation of the activity being applied for;
- **Uncertainty of values** depicts the approach assumed during the EIA process, while final certainty will be determined at the time decisions are made. Enhanced communications and widespread co-ordinations can lower uncertainty; and,
- **Uncertainty of related decisions**, relates to the decision-making aspect of the EIA process, which shall be appeased once monitoring of the project phase is undertaken.

The FAO (2010) further stresses the significance of widespread consultation towards minimising the risk of omitting significant impacts. The use of quantitative impact significance rating formulas can further limit the occurrence and scale of uncertainty.

5 SECTION E: RECOMMENDATIONS OF PRACTITIONER

The following recommendation have been made by the EAP:

Construction Phase

- Once the detailed design layout of the powerlines has been confirmed, Eskom must submit it to the Competent Authority for approval;
- A pre-construction walkdown by an archaeologist to microsite the final pylon placements and avoid significant archaeological resources.
- All hazardous substance must be bunded in secondary containment able to hold 110% of the substance being bunded;
- The specialist mitigation measures and the mitigation measures described in the EMPr must be implemented;
- Vegetation clearance should be restricted, and it should be endeavoured to retain existing vegetation where possible;
- Only trees directly under the power line and up to 4 meters on either side of the outer lines may be removed under a valid Forest Act License.
- Protected trees located further away, but with tree crowns protruding into the 4-meter buffer area, may not be removed but can be trimmed back via a valid Forest Act License. if a portion of the tree crown intrudes into the 4-meter buffer area. The position of a tree is determined by its stem. In the corridor assessed, the power line(s) should be placed to avoid slow-growing protected trees as far as possible.
- Trees with active bird nests or other significant biodiversity features may not be destroyed without a valid Fauna Permit from the provincial conservation authority, the Northern Cape Department of Agriculture, Environmental Affairs, Rural Development and Land Reform (DAERL) under the Northern Cape Nature Conservation Act, Act 9 of 2009 (NCNCA).
- All watercourses are to be avoided;
- Adequate security must be placed at the construction site throughout the Construction Phase; and,
- The relevant Eskom Standards must be implemented during the Construction Phase.

Operational Phase

- The Applicant must compile an Inspection and Maintenance Programme, to ensure that that maintenance practices do not result in any additional impacts on the fauna, flora and the watercourses. This plan must adhere to the relevant industry standards, and ensure that the powerline is well maintained;
- The stormwater management system, i.e. drainage channels, must be maintained;
- Existing roads must be adhered to as far as practically possible;
- Continuously monitor and report avifauna in the project area to assess mitigation effectiveness;

- All mitigation measures provided for in the specialist reports, BAR and the EMPr for the operational phase must be implemented.

Decommissioning Phase

- The mitigation measures described in the EMPr must be implemented;
- Disturbance outside of the footprint is strictly prohibited;
- Areas disturbed by the development must be rehabilitated via a Rehabilitation Plan (compiled by a suitably qualified Botanical Specialist);
- All hazardous waste to be temporarily stored on site must be stored on a bunded, impermeable area. All hazardous waste must be disposed at a facility licensed to dispose the respective hazardous waste types.

Summary of the outcomes of the specialist reports

Plant Species, Animal Species and Terrestrial Biodiversity Theme Compliance Statement

- Low sensitivity for Terrestrial Biodiversity, Plant Species, and Animal Species themes.
- Two protected species (*Vachellia erioloba* and Vachellia *haematoxylon*) present, requiring a tree removal permit if uprooted.
- Strict adherence to mitigation measures outlined in EMPr.
- Further risk reduction through implementation of proposed mitigation measures.
- Only trees directly under the power line and up to 4 meters on either side of the outer line may be removed.
- A Valid Forest Act License is required for the removal of protected tree species.
- Trees with active bird nests or other significant biodiversity features may not be destroyed without a valid Fauna Permit from the provincial conservation authority.

Aquatic Biodiversity Compliance Statement

- Proposed powerline deviation is within the regulated watercourse area.
- Requires authorization/registration under National Water Act (Section 21 c and i).
- Pans classified as EIS B (ecologically important and sensitive).
- Channelled valley bottom wetland is classified as EIS C (moderate ecological importance on a local scale).
- Overall low risk to wetlands, streams, and drainage lines.
- Further risk reduction through implementation of proposed mitigation measures.
- General Authorization recommended for proposed activities.

Avifaunal Impact Assessment :

- Study area highly sensitive for birds, particularly regarding powerline collisions.
- Hakskeen pan and Koopan sites contain habitat for Species of Conservation Concern (SCC) per IUCN Red List.
- Classification of high sensitivity is accurate for powerline and infrastructure impacts.

- Appropriate mitigation measures can reduce impacts to low.
- Implementation of all mitigation measures from Appendix 4 (of the Avifaunal Impact Assessment) recommended to counteract avifaunal impacts.

Heritage Impact Assessment:

- Kalahari Sands of Gordonia Formation have LOW sensitivity for palaeontological impacts.
- Recommends implementing the Chance Finds Procedure during excavation activities.
- No anticipated negative impact on significant archaeological heritage with recommended measures.

Environmental Impact Statement

Summary of Negative Impacts

- Clearance of indigenous vegetation and loss of habitat;
- Potential for the leakage of hazardous substances leading to soil and surface- and ground water contamination;
- Potential fires and/or explosions;
- Noise and visual nuisance;
- Potential of collision with powerlines and associated infrastructure.

Summary of Positive Impacts

- Improved stability of electricity supply to meet the current and anticipated electricity demand. This will support economic development in the area;
- Significant proposed Job creation (Construction Phase).

Cumulative Impacts

Cumulative impacts on ground- and surface water could result if hazardous substances are leaked, compounding the impact of contaminants that have entered water resources from other sources.

No-Go Areas

No specific No-Go Areas were identified within the proposed construction footprint. Construction activities must be restricted to the boundary of the site.

Impact Statement

Following a thorough investigation the EAP found that from an environmental perspective the proposed powerline deviation route alignments will have an acceptable impact with the implementation of mitigation measures. The development is expected to improve the stability of the electricity supply to Rietfontein and surrounds, assisting to meet the expected increase in electricity demand and assisting during maintenance of the site.

Validity Period of Environmental Authorisation

The construction of the Power line Deviation will be concluded within five (5) years and the Environmental Authorisation is required to be valid for a period of ten (10) years as per Appendix 1(3)(1)(q) of the NEAM EIA Regulations, 2014, as amended.

6 SECTION F: APPENDICES

Appendix A - Maps of the Study Area;

Appendix B - Photographs of the Study Area;

Appendix C - Facility Illustration of the Proposed Development;

Appendix D - Specialist Reports;

Appendix E - Impact Assessment;

Appendix F - Environmental Management Plan;

Appendix G - Motivation for Exemption from Assessing Alternatives

Appendix H - Details of the Environmental Assessment Practitioner;

Appendix I - Declarations; and,

Appendix J - Additional Information.

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