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**SITE SENSITIVITY VERIFICATION
AND
AGRICULTURAL COMPLIANCE STATEMENT
FOR
THE PROPOSED 132kV OYA POWER LINE
NEAR MATJIESFONTEIN, WESTERN AND NORTHERN CAPE PROVINCE**

**Report by
Johann Lanz**

2 November 2020

Curriculum Vitae

Education

M.Sc. (Environmental Geochemistry)	University of Cape Town	1996 - 1997
B.Sc. Agriculture (Soil Science, Chemistry)	University of Stellenbosch	1992 - 1995
BA (English, Environmental & Geographical Science)	University of Cape Town	1989 - 1991
Matric Exemption	Wynberg Boy's High School	1983

Professional work experience

I have been registered as a Professional Natural Scientist (Pri.Sci.Nat.) in the field of soil science since 2012 (registration number 400268/12) and am a member of the Soil Science Society of South Africa.

Soil & Agricultural Consulting Self employed 2002 - present

In the past 5 years of running my soil and agricultural consulting business, I have completed more than 120 agricultural assessments (EIAs, SEAs, EMPRs) in all 9 provinces for renewable energy, mining, urban, and agricultural developments. My regular clients include: Aurecon; CSIR; SiVEST; Arcus; SRK; Environamics; Royal Haskoning DHV; Jeffares & Green; JG Afrika; Juwi; Mainstream; Redcap; G7; Mulilo; and Tiptrans. Recent agricultural clients for soil resource evaluations and mapping include Cederberg Wines; Western Cape Department of Agriculture; Vogelfontein Citrus; De Grendel Estate; Zewenwacht Wine Estate; and Goedgedacht Olives.

In 2018 I completed a ground-breaking case study that measured the agricultural impact of existing wind farms in the Eastern Cape.

Soil Science Consultant Agricultural Consultors International (Tinie du Preez) 1998 - 2001

Responsible for providing all aspects of a soil science technical consulting service directly to clients in the wine, fruit and environmental industries all over South Africa, and in Chile, South America.

Contracting Soil Scientist De Beers Namaqualand Mines July 1997 - Jan 1998

Completed a contract to advise soil rehabilitation and re-vegetation of mined areas.

Publications

- Lanz, J. 2012. Soil health: sustaining Stellenbosch's roots. In: M Swilling, B Sebitosi & R Loots (eds). *Sustainable Stellenbosch: opening dialogues*. Stellenbosch: SunMedia.
- Lanz, J. 2010. Soil health indicators: physical and chemical. *South African Fruit Journal*, April / May 2010 issue.
- Lanz, J. 2009. Soil health constraints. *South African Fruit Journal*, August / September 2009 issue.
- Lanz, J. 2009. Soil carbon research. *AgriProbe*, Department of Agriculture.
- Lanz, J. 2005. Special Report: Soils and wine quality. *Wineland Magazine*.

I am a reviewing scientist for the *South African Journal of Plant and Soil*.



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF THE SPECIALIST, DECLARATION OF INTEREST AND UNDERTAKING UNDER OATH

(For official use only)

File Reference Number:

NEAS Reference Number:

Date Received:

DEA/EIA/

Application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

PROJECT TITLE

THE PROPOSED 132kV OYA POWER LINE NEAR MATJIESFONTEIN, WESTERN AND NORTHERN CAPE PROVINCE

Kindly note the following:

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- This form is current as of 01 September 2018. It is the responsibility of the Applicant / Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the form have been published or produced by the Competent Authority. The latest available Departmental templates are available at <https://www.environment.gov.za/documents/forms>.
- A copy of this form containing original signatures must be appended to all Draft and Final Reports submitted to the department for consideration.
- All documentation delivered to the physical address contained in this form must be delivered during the official Departmental Officer Hours which is visible on the Departmental gate.
- All EIA related documents (includes application forms, reports or any EIA related submissions) that are faxed; emailed; delivered to Security or placed in the Departmental Tender Box will not be accepted, only hardcopy submissions are accepted.

Departmental Details

Postal address: Department of Environmental Affairs, Attention: Chief Director: Integrated Environmental Authorisations, Private Bag X447, Pretoria, 0001

Physical address: Department of Environmental Affairs, Attention: Chief Director: Integrated Environmental Authorisations, Environment House, 473 Steve Biko Road, Arcadia

Queries must be directed to the Directorate: Coordination, Strategic Planning and Support at:

Email: EIAAdmin@environment.gov.za

1. SPECIALIST INFORMATION

Specialist Company Name: B-BBEE	Johann Lanz – Soil Scientist		
	Contribution level (indicate 1 to 8 or non-compliant)	4	Percentage Procurement recognition
			100%
Specialist name:	Johann Lanz		
Specialist Qualifications:	M.Sc. (Environmental Geochemistry)		
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2. DECLARATION BY THE SPECIALIST

I, **Johann Lanz**, declare that -

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.

3. UNDERTAKING UNDER OATH/ AFFIRMATION

I, **Johann Lanz**, swear under oath / affirm that all the information submitted or to be submitted for the purposes of this application is true and correct.

Signature of the Specialist

Johann Lanz - Soil Scientist (sole proprietor)

Name of Company

Date

Signature of the Commissioner of Oaths

Date

Signature of the Specialist

Johann Lanz - Soil Scientist (sole proprietor)

Name of Company:

Date

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EXECUTIVE SUMMARY

The key findings of this study are:

- The aridity of the area is a significant agricultural constraint that seriously limits the level of agricultural production (including grazing) which is possible across the site.
- Shallow, sandy soils on underlying rock or carbonate hardpan are a further agricultural limitation.
- As a result of these limitations, the study area is unsuitable for cultivation and agricultural land use is limited to low density grazing. The majority of land within the development area is classified as low agricultural sensitivity by the screening tool, but includes areas of medium sensitivity.
- The only possible agricultural impact is minimal soil and land degradation (erosion and topsoil loss) as a result of land disturbance during construction and decommissioning.
- The conclusion of this assessment is that the proposed development will not have an unacceptable negative impact on the agricultural production capability of the site. The proposed development is therefore acceptable. This is substantiated by the facts that the land is of very low agricultural potential, the amount of agricultural land loss is insignificant, and that the proposed development poses a low risk in terms of causing soil degradation.
- From an agricultural impact point of view, it is recommended that the proposed development be approved.

1 INTRODUCTION

Environmental authorisation is being sought for the proposed 132kV Oya power line near Matjiesfontein, Western and Northern Cape Province (see Figure 1). In terms of the National Environmental Management Act (Act No. 107 of 1998) (NEMA) as amended, as well as the Environmental Impact Assessment (EIA) Regulations, 2014 (promulgated in Government Gazette 40772 and GN R326, R327, R325 and R324 on 7 April 2017), an application for environmental authorisation requires an agricultural assessment. In this case, an Agricultural Compliance Statement is required (see terms of reference, below). This report provides all of the inputs required by the *Protocol for the specialist assessment and minimum report content requirements for environmental impacts on agricultural resources*, gazetted on 20 March 2020¹.

Johann Lanz was appointed as an independent agricultural specialist to provide the required Agricultural Compliance Statement and/or inputs. The objective and focus of an Agricultural Compliance Statement is to indicate whether or not the proposed development will have an unacceptable impact on the agricultural production capability of the site, and based on this, to make a statement on whether it is acceptable or not, and a recommendation on whether it should be approved or not.

¹ Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes In terms of Sections 24(5)(A) and (H) and 44 of the National Environmental Management Act (Act No 107 of 1998) (NEMA)

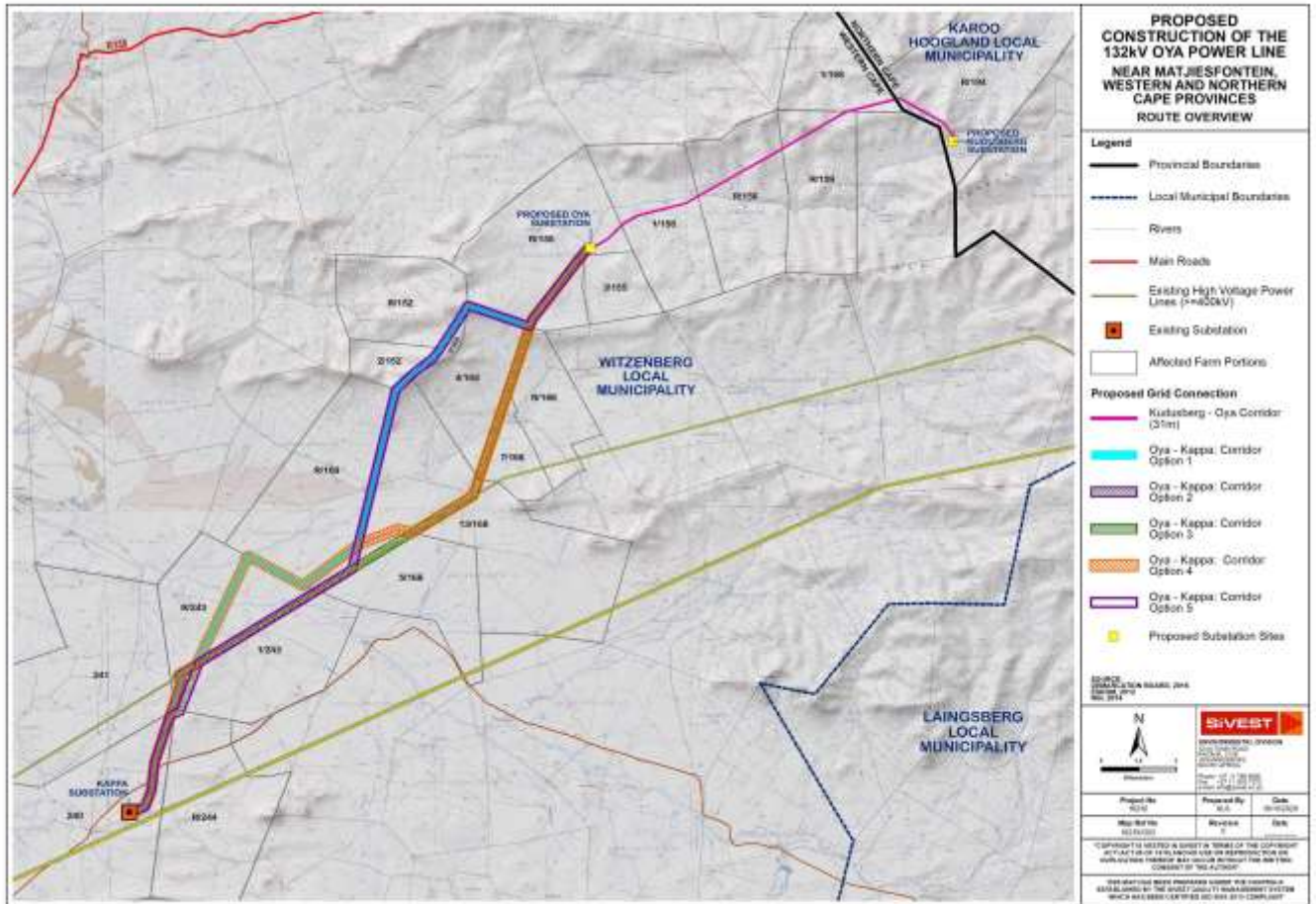


Figure 1. Route overview map for the development, showing all alternatives.

2 PROJECT DESCRIPTION

Oya Energy (Pty) Ltd (hereafter referred to as “Oya Energy”) is proposing to construct a 132kV overhead power line and 33/132kV substation near Matjiesfontein in the Western and Northern Cape Provinces (hereafter referred to as the “proposed development”). The overall objective of the proposed development is to feed the electricity generated by the proposed Oya Energy Facility (part of separate on-going EIA process with DEFF Ref No.: 14/12/16/3/3/2/2009) as well as potentially the nearby developments into the national grid. The grid connection and substation (this application) requires a separate EA, to allow the EA to be handed over to Eskom.

The proposed overhead power line will affect the following properties²:

- Portion 2 of the Farm Bakovens Kloof No 152 (2/152): C01900000000015200002
- Remainder of the Farm Bakovens Kloof No 152 (RE/152): C01900000000015200000
- Portion 3 of the Farm Baakens Rivier No 155 (3/155): C01900000000015500003

² 21-digit surveyor general (SG) codes also provided

- Remainder of the Farm Baakens Rivier No 155 (RE/155): C01900000000015500000
- Portion 1 of the Farm Gats Rivier No 156 (1/156): C01900000000015600001
- Remainder of the Farm Gats Rivier No 156 (RE/156): C01900000000015600000
- Portion 1 of the Farm Amandelboom No 158 (1/158): C01900000000015800001
- Remainder of the Farm Oliviers Berg No 159 (RE/159): C01900000000015900000
- Portion 2 of the Farm Bantamsfontein No 168 (2/168): C01900000000016800002
- Portion 4 of the Farm Bantamsfontein No 168 (4/168): C01900000000016800004
- Portion 5 of the Farm Bantamsfontein No 168 (5/168): C01900000000016800005
- Portion 7 of the Farm Bantamsfontein No 168 (7/168): C01900000000016800007
- Portion 13 of the Farm Bantamsfontein No 168 (13/168): C01900000000016800013
- Remainder of the Farm Bantamsfontein No 168 (RE/168): C01900000000016800000
- Remainder of the Farm Lower Roodewal No 169 (RE/169): C01900000000016900000
- Remainder of the Farm Matjes Fontein No 194 (RE/194): C07200000000019400000
- The Farm Platfontein No 240 (240): C01900000000024000000
- The Farm Die Brak No 241 (241): C01900000000024100000
- Portion 1 of the Farm Rietpoort No 243 (1/243): C01900000000024300001
- Remainder of the Farm Rietpoort No 243 (RE/243): C01900000000024300000
- Remainder of the Farm Toover berg No 244 (RE/244): C01900000000024400000

The proposed power line is in the Witzenberg and Karoo Hoogland Local Municipalities respectively, which fall within the Cape Winelands and Namakwa District Municipalities.

The entire extent of the proposed overhead power line is located within one (1) of the Strategic Transmission Corridors as defined and in terms of the procedures laid out in GN No. 113³, namely the Central Corridor. The proposed overhead power line project is irrespective of this subject to a BA process in terms of the NEMA (as amended) and Appendix 1 of the EIA Regulations, 2014 promulgated in Government Gazette 40772 and GN R326, R327, R325 and R324 on 7 April 2017. The competent authority for this BA is the DEFF.

At this stage, it is anticipated that the proposed development will include a 132kV power line and a 33/132kV substation to feed electricity generated by the renewable energy facilities owned by the applicant into the national grid at the Kappa substation.

The type of power line towers being considered at this stage include both lattice and monopole towers and it is assumed that these towers will be located approximately 200m to 250m apart. The towers will be up to 45m in height, depending on the terrain, but will ensure minimum overhead line clearances from buildings and surrounding infrastructure.

³ Formally gazetted on 16 February 2018 (GN No. 113)

Three-hundred-metre-wide power line corridors (i.e. 150m on either side) are being assessed to allow flexibility when determining the final route alignment. The proposed power line however only requires a 31m wide servitude and as such, this servitude would be positioned within the assessed corridor.

The size of the proposed Oya and Kudusberg on-site Eskom substation and O&M building site will be approximately 4 hectare (ha) each.

Alternatives:

It should be noted that only one (1) route is possible for the section of the proposed power line which connects the Kudusberg WEF on-site substation (authorised under 14/12/16/3/3/1/1976/AM1) to the Oya Energy Facility on-site substation (i.e. Kudusberg to Oya). No alternatives can therefore be provided for this section of the power line. The Kudusberg to Oya power line corridor route is approximately 16.6km in length and runs from the Kudusberg on-site substation along the RE/194, 1/158, RE/159, RE/156, 1/156 and RE/155 properties to the Oya on-site substation.

Five (5) power line corridor route alternatives have however been provided for the section of the proposed overhead power line which connects the Oya Energy Facility on-site substation to the Kappa substation (i.e. Oya to Kappa). The above-mentioned alternatives are described below:

- **Power Line Corridor Alternative 1 (Oya to Kappa):** Approximately 34.14km in length and runs along the RE/155, RE/152, 2/152, RE/169, RE/243, 241, 240 and RE/244 properties to the Kappa substation
- **Power Line Corridor Alternative 2 (Oya to Kappa):** Approximately 32.43km in length and runs along the RE/155, 3/155, RE/152, 2/152, RE/169, 13/168, 5/168, 1/243, RE/243, 241 and 240 properties to the Kappa substation
- **Power Line Corridor Alternative 3 (Oya to Kappa):** Approximately 30.56km in length and runs along the RE/155, 4/168, 13/168, 5/168, 1/243, 240 and RE/244 properties to the Kappa substation
- **Power Line Corridor Alternative 4 (Oya to Kappa):** Approximately 32.94km in length and runs along the RE/155, 4/168, 13/168, RE/169, RE/243, 241 and 240 properties to the Kappa substation
- **Power Line Corridor Alternative 5 (Oya to Kappa):** Approximately 32.26km in length and runs along the RE/155, RE/152, 2/152, RE/169, 5/168, 1/243 and 240 properties to the Kappa substation

The power line corridor routes (Kudusberg to Oya and Oya to Kappa) provide different route alignments contained within an assessment corridor of up to approximately 300m wide. This is to

allow for flexibility to route the power line within the authorised corridor.

Please refer to Figure 1 above for an overview of the above-mentioned proposed power line corridor routes.

3 TERMS OF REFERENCE

The terms of reference for this study is to fulfil the requirements of the *Protocol for the specialist assessment and minimum report content requirements of environmental impacts on agricultural resources*, gazetted on 20 March 2020 in GN 320 (in terms of Sections 24(5)(A) and (H) and 44 of NEMA, 1998).

The proposed site is identified by the national web-based environmental screening tool as being of low and medium sensitivity for agricultural resources, and the protocol therefore requires that the level of agricultural assessment be an Agricultural Compliance Statement. The protocol also requires that a Site Sensitivity Verification be done.

The protocol states that an Agricultural Compliance Statement must be prepared by a competent soil scientist/agricultural specialist registered with the South African Council for Natural Scientific Professions (SACNASP).

The compliance statement must⁴:

1. be applicable to the preferred site and proposed development footprint;
2. confirm that the site is of “low” or “medium” sensitivity for agriculture (Section 7); and
3. indicate whether or not the proposed development will have an unacceptable impact on the agricultural production capability of the site (Section 9.8).

It must contain, as a minimum, the following information:

1. contact details and relevant experience as well as the South African Council for Natural Scientific Professions (SACNASP) registration number of the soil scientist or agricultural specialist preparing the statement including a curriculum vita (CV) (Appendix 1);
2. a signed statement of independence by the specialist (Appendix 2);
3. a map showing the proposed development footprint (including supporting infrastructure) with a 50 m buffered development envelope, overlaid on the agricultural sensitivity map generated by the screening tool (Figure 2);

⁴ The section of this report that fulfils each requirement is given in brackets after it

4. confirmation from the specialist that all reasonable measures have been taken through micro-siting to avoid or minimize fragmentation and disturbance of agricultural activities (Section 9.6);
5. a substantiated statement from the soil scientist or agricultural specialist on the acceptability, or not, of the proposed development and a recommendation on the approval, or not of the proposed development (Section 9.8);
6. any conditions to which this statement is subjected (Section 11);
7. in the case of a linear activity, confirmation from the agricultural specialist or soil scientist, that in their opinion, based on the mitigation and remedial measures proposed, the land can be returned to the current state within two years of completion of the construction phase (Section 9.7);
8. where required, proposed impact management outcomes or any monitoring requirements for inclusion in the EMPr (Section 10); and
9. a description of the assumptions made and any uncertainties or gaps in knowledge or data (Section 5).

4 METHODOLOGY OF STUDY

4.1 Methodology for assessing soils and agricultural potential

This report adheres to the process and content requirements of the gazetted agricultural protocol as outlined in Section 3 above. As per the requirement, the assessment was based on a desktop analysis of existing soil and agricultural potential data for the site.

The following sources of information were used:

- Soil data was sourced from the land type data set, of the Department of Agriculture, Forestry and Fisheries (DAFF). This data set originates from the land type survey that was conducted from the 1970's until 2002. It is the most reliable and comprehensive national database of soil information in South Africa and although the data was collected some time ago, it is still entirely relevant as the soil characteristics included in the land type data do not change within time scales of hundreds of years.
- Land capability data was sourced from the 2017 National land capability evaluation raster data layer produced by the DAFF, Pretoria.
- Field crop boundaries were sourced from the national web-based environmental screening tool.
- Rainfall and evaporation data was sourced from the SA Atlas of Climatology and Agrohydrology (2009, R.E. Schulze) available on Cape Farm Mapper.
- Grazing capacity data was sourced from the 2018 DAFF long-term grazing capacity map for

South Africa, available on Cape Farm Mapper.

- Satellite imagery of the site and surrounds was sourced from Google Earth.

5 ASSUMPTIONS, UNCERTAINTIES OR GAPS IN KNOWLEDGE OR DATA

The study makes the assumption that water for irrigation is not available in the study area. This is based on the assumption that a long history of farming experience in an area will result in the exploitation of viable water sources if they exist, and none have been exploited in the study area.

There are no other specific assumptions, uncertainties or gaps in knowledge or data that affect the findings of this study.

6 APPLICABLE LEGISLATION AND PERMIT REQUIREMENTS

Power lines require the registration of a servitude for each farm portion crossed. In terms of the Subdivision of Agricultural Land Act (Act 70 of 1970) (SALA), the registration of a power line servitude requires written consent of the Minister if the following two conditions apply:

1. if the servitude width exceeds 15 metres; and
2. if Eskom is not the applicant for the servitude.

If one or both of these conditions do not apply, then no agricultural consent is required. Eskom is currently exempt from agricultural consent for power line servitudes.

Rehabilitation after disturbance to agricultural land is managed by the Conservation of Agricultural Resources Act (Act 43 of 1983) (CARA). No application is required in terms of CARA. The BA process covers the required aspects of this.

7 SITE SENSITIVITY VERIFICATION

In terms of the gazetted agricultural protocol (GN 320), a site sensitivity verification must be submitted that:

1. confirms or disputes the current use of the land and the environmental sensitivity as identified by the screening tool, such as new developments or infrastructure, the change in vegetation cover or status etc.;
2. contains a motivation and evidence (e.g. photographs) of either the verified or different use of the land and environmental sensitivity.

Agricultural sensitivity, in terms of environmental impact, is a direct function of the capability of the land for agricultural production. This is because a negative impact, or exclusion of agriculture, on land of higher agricultural capability is more detrimental to agriculture than the same impact on land of low agricultural capability.

The screening tool classifies agricultural sensitivity according to two criteria - the cultivation status and the land capability. All cultivated land is classified as high sensitivity (or very high sensitivity). This is because there is a scarcity of arable production land in South Africa, in terms of how much is required for food security.

Uncultivated land is classified by the screening tool in terms of the land capability. Land capability is defined as the combination of soil, climate and terrain suitability factors for supporting rain fed agricultural production. It is an indication of what level and type of agricultural production can sustainably be achieved on any land. The higher land capability classes are suitable as arable land for the production of cultivated crops, while the lower suitability classes are only suitable as non-arable, grazing land, or at the lowest extreme, not even suitable for grazing. In 2017 DAFF released updated and refined land capability mapping across the whole of South Africa. This has greatly improved the accuracy of the land capability rating for any particular piece of land anywhere in the country. The new land capability mapping divides land capability into 15 different categories with 1 being the lowest and 15 being the highest. This land capability data is used by the screening tool.

The proposed site is identified by the screening tool as being of predominantly low sensitivity for agricultural resources, but it also includes areas of medium sensitivity. A map of the proposed development area overlaid on the screening tool sensitivity is given in Figure 2, below.

The agricultural capability of all land in the study area is severely constrained by the aridity of the climate. It is further constrained by shallow, sandy soils on underlying rock or hard-pan carbonate.

The differences in land capability across the project area are largely a function of terrain, but also of how the land capability data is generated. They are not very significant in terms of actual meaningful differences in agricultural potential on the ground.

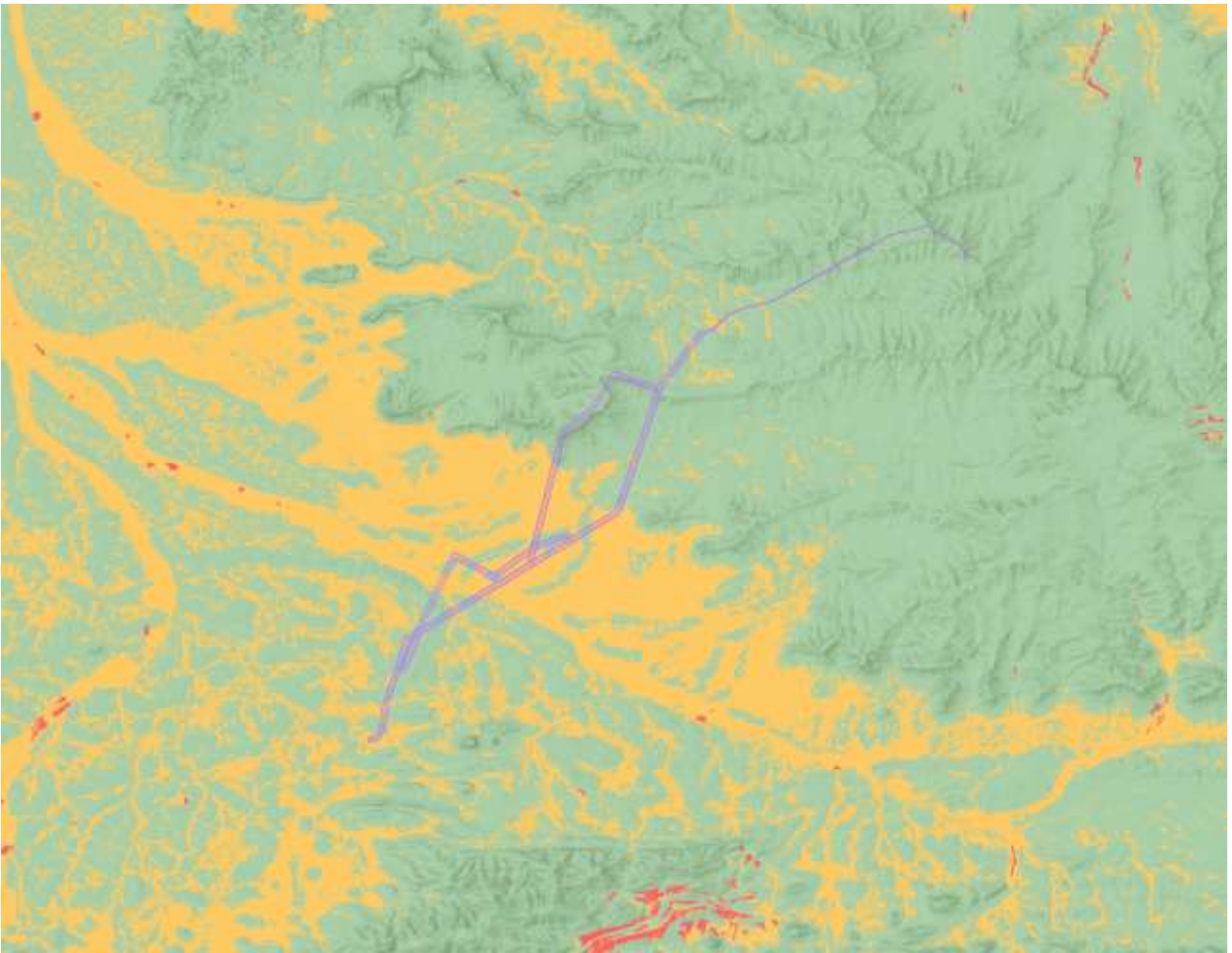


Figure 2. The total footprint of all the development alternatives, including substations, overlaid on agricultural sensitivity, as given by the screening tool.

The agricultural sensitivity, as identified by the screening tool, is confirmed by this assessment. The motivation for confirming the sensitivity is predominantly that the climate data (low rainfall of approximately 140 mm per annum and high evaporation of approximately 1,600 mm per annum) proves the area to be arid, and therefore of limited land capability. In addition, the land type data shows the dominant soils to be shallow, sandy soils on underlying rock or hard-pan carbonate. The land of the study area, therefore, without doubt, corresponds to the definitions of the different screening tool sensitivity categories in terms of its land capability and cultivation status.

The protocol requirement of doing a site sensitivity verification for agriculture, particularly where climate is the predominant agricultural limitation, is nonsensical because there is only one way in which a sensitivity category different from that of the screening tool could possibly be arrived at. The only way in which sensitivity in the field could differ from the screening tool, and therefore need verification, is if new cultivated lands had recently been established on the site. In an area where the soils, climate and water availability are known to be completely unsuitable for cultivation, this is an impossibility.

Agricultural sensitivity of a particular development is also a function of the severity of the impact which that development poses to agriculture. This is not recognised in the screening tool, but is relevant for transmission lines, because the impact is negligible (see impact assessment section), even on areas identified by the screening tool as being of high agricultural sensitivity for impacts on agricultural resources, such as cultivated lands.

8 AGRICULTURAL LAND USE

The area is a sheep and game farming area. Low density, natural grazing is by far the predominant agricultural activity in the area. The climate does not support cultivation without irrigation. Grazing capacity of the site varies from low at 45 hectares per large stock unit in the north east to very low at 90 hectares per large stock unit in the south west.

There are existing wind farms in close proximity to the proposed power line.

9 ASSESSMENT OF AGRICULTURAL IMPACT

9.1 General

The focus and defining question of an agricultural impact assessment is to determine to what extent a proposed development will compromise (negative impacts) or enhance (positive impacts) current and/or potential future agricultural production. The significance of an impact is therefore a direct function of the degree to which that impact will affect current or potential future agricultural production. If there will be no impact on production, then there is no agricultural impact. Impacts that degrade the agricultural resource base, pose a threat to production and therefore are within the scope of an agricultural impact assessment. Lifestyle impacts on the resident farming community, for example visual impacts, do not necessarily impact agricultural production and, if they do not, are not relevant to and within the scope of an agricultural impact assessment.

For agricultural impacts, the exact nature of the different infrastructure within a development has very little bearing on the significance of impacts. What is of most relevance is simply the occupation of the land, and whether it is being occupied by a pylon base or a substation makes no difference. What is of most relevance therefore is simply the total footprint of the facility.

9.2 Impact identification and description

Electrical grid infrastructure has negligible agricultural impact in this study area for two reasons:

1. Overhead transmission lines have no agricultural impact because all agricultural activities that are viable in this environment (grazing) can continue completely unhindered underneath transmission lines.
2. The direct, permanent, physical footprint of the development that has any potential to interfere with agriculture, is restricted to pylon bases and a small substation that, in the context of the agricultural environment of low density grazing on farms which are typically thousands of hectares large, is entirely insignificant.

The only possible source of impact is minimal disturbance to the land during construction and decommissioning. The single agricultural impact is therefore minimal soil and land degradation (erosion and topsoil loss) as a result of land disturbance. Erosion can occur as a result of the alteration of the land surface run-off characteristics, which can be caused by construction related land surface disturbance, vegetation removal, and the establishment of hard surface areas including roads. Loss of topsoil can result from poor topsoil management during excavations. Soil degradation will reduce the ability of the soil to support vegetation growth. This is a direct, negative impact that applies to only two of the phases of the development (construction and decommissioning).

9.3 Cumulative impacts

The cumulative impact of a development is the impact that development will have when its impact is added to the incremental impacts of other past, present or reasonably foreseeable future activities that will affect the same environment. It is important to note that the cumulative impact assessment for a particular project, like what is being done here, is not the same as an assessment of the impact of all surrounding projects. The cumulative assessment for this project is an assessment only of the impacts associated with this project, but seen in the context of all surrounding impacts. It is concerned with this project's contribution to the overall impact, within the context of the overall impact. But it is not simply the overall impact itself.

The most important concept related to a cumulative impact is that of an acceptable level of change to an environment. A cumulative impact only becomes relevant when the impact of the proposed development will lead directly to the sum of impacts of all developments causing an acceptable level of change to be exceeded in the surrounding area. If the impact of the development being assessed does not cause that level to be exceeded, then the cumulative impact associated with that development is not significant.

The potential cumulative agricultural impact of importance is a regional loss (including by degradation) of agricultural land, with a consequent decrease in agricultural production. The defining question for assessing the cumulative agricultural impact is this:

What level of loss of agricultural land use and associated loss of agricultural production is acceptable in the area, and will the loss associated with the proposed development, when considered in the context of all past, present or reasonably foreseeable future impacts, cause that level in the area to be exceeded?

Because of the negligible agricultural impact of the proposed development in such an agricultural environment, far more electricity grid infrastructure than currently exists, or is currently proposed, can be accommodated before acceptable levels of change are exceeded. Acceptable levels of change in terms of other types of impact, for example visual impact, would be exceeded long before the levels for agricultural impact became an issue. For the above reasons, the cumulative agricultural impact of the proposed development can confidently be assessed as negligible.

9.4 Comparative assessment of alternatives

Five power line corridor route alternatives have been provided (see Section 2, above) for the section of the proposed overhead power line which connects the Oya Energy Facility on-site substation to the Kappa substation (i.e. Oya to Kappa). The power line corridor route alternatives provide different route alignments contained within an assessment corridor of up to approximately 300m wide. This is to allow for flexibility to route the power line within the authorised corridor.

Due to the low agricultural sensitivity of the site, and the effectively uniform agricultural conditions across the site, there will be absolutely no material difference between the agricultural impacts of any of the alternatives. All alternatives are considered acceptable.

9.5 Impacts of the 'no-go' alternative

The 'no-go' alternative considers impacts that will occur to the agricultural environment in the absence of the proposed development. There is no agricultural impact of the 'no-go' option. Therefore, the extent to which the development and the 'no-go' alternative will impact agricultural production are more or less equal, which results in there being, from an agricultural impact perspective only, no preferred alternative between the development and the 'no-go'.

The 'no-go' option is a feasible option. However, it would prevent the proposed development plus the dependent renewable energy developments from contributing to the environmental, social and economic benefits associated with the development of renewable energy.

9.6 Micro-siting to minimize fragmentation and disturbance of agricultural activities

The agricultural protocol requires confirmation that all reasonable measures have been taken through micro-siting to minimize fragmentation and disturbance of agricultural activities. However,

the agricultural uniformity and low agricultural potential of the environment, means that the exact positions of all infrastructure will make no material difference to agricultural impacts. It is therefore unnecessary to check whether siting of infrastructure, and any layout of infrastructure within the assessed area is acceptable in terms of agricultural impact.

9.7 Confirmation of linear activity impact

The protocol provision of a linear impact confirmation only makes sense when the requirement for an Agricultural Compliance Statement is based on the fact that the development is a linear activity. In this case the low and medium agricultural sensitivity determines that an Agricultural Compliance Statement suffices. Nevertheless, it is hereby confirmed that, due to the low impact of this linear activity, the land can be returned to the current state within two years of completion of the construction phase.

9.8 Impact assessment and statement

An Agricultural Compliance Statement is not required to formally rate agricultural impacts. It is only required to indicate whether or not the proposed development will have an unacceptable impact on the agricultural production capability of the site. It must provide a substantiated statement on the acceptability, or not, of the proposed development and a recommendation on the approval, or not of the proposed development.

The conclusion of this assessment is that the proposed development will not have an unacceptable negative impact on the agricultural production capability of the site. The proposed development is therefore acceptable. This is substantiated by the following points:

- The proposed development is on land of very low agricultural potential.
- The amount of agricultural land loss is completely insignificant within the agricultural context.
- The proposed development poses a low risk in terms of causing soil degradation, which can be adequately and fairly easily managed by mitigation management actions. In addition, the degradation risk is only to land of low agricultural value, and the significance of the impact is therefore low.

Therefore, from an agricultural impact point of view, it is recommended that the development be approved.

10 ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) INPUTS

There are no additional mitigation measures required, over and above what has already been included in the Generic EMPr for overhead electricity transmission and distribution infrastructure as per Government Notice 435, which was published in Government Gazette 42323 on 22 March 2019.

11 CONCLUSIONS

The site has very low agricultural potential because of, predominantly, aridity constraints, but also due to soil constraints. It is totally unsuitable for cultivation, and agricultural land use is limited to low density grazing. The majority of land within the development area is of low agricultural sensitivity, but it includes areas of medium sensitivity.

The only possible agricultural impact is minimal soil and land degradation (erosion and topsoil loss) as a result of land disturbance during construction and decommissioning.

The conclusion of this assessment is that the proposed development will not have an unacceptable negative impact on the agricultural production capability of the site. The proposed development is therefore acceptable. This is substantiated by the facts that the land is of very low agricultural potential, the amount of agricultural land loss is insignificant, and that the proposed development poses a low risk in terms of causing soil degradation.

From an agricultural impact point of view, it is recommended that the development be approved.

The conclusion of this assessment on the acceptability of the proposed development and the recommendation for its approval is not subject to any conditions.

12 REFERENCES

Cape Farm Mapper. Available at: <https://gis.elsenburg.com/apps/cfm/>

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