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SITE SENSITIVITY VERIFICATION
AND
AGRICULTURAL COMPLIANCE STATEMENT
FOR THE PROPOSED HERCULES GRID CONNECTION INFRASTRUCTURE
NEAR DE AAR, NORTHERN CAPE PROVINCE

Report by
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24 June 2025

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EXECUTIVE SUMMARY

South Africa needs electricity generation, and renewable energy offers good potential for that, but requires land. Agriculturally zoned land will inevitably need to be used for the renewable energy generation that the country requires. However, to ensure food security, energy facilities should be located where they do not exclude viable crop production from land.

The overall conclusion of this assessment is that the proposed development is acceptable because it leads to no loss of potential cropland and therefore minimal loss of future agricultural production potential.

This assessment confirms the low to medium sensitivity rating of the site by the screening tool because of the site's assessed agricultural production potential and current agricultural land use.

The climate is classified as arid. Climate is therefore the limiting factor for land capability, regardless of the soil and terrain capability, although shallow, rocky soils are an additional limitation. Moisture availability is very limiting to any kind of agricultural production, including grazing and is completely insufficient for rain-fed crop production. The climate constraints mean that the site has very low agricultural potential and its agricultural use is limited to grazing only.

An agricultural impact is a change to the future agricultural production potential of land. This is primarily caused by the exclusion of agriculture from the footprint of the development. In this case, the development footprint is considered to be below the threshold for needing to be conserved as agricultural production land because of the limitations that make it unsuitable as viable cropland. The use of this land for non-agricultural purposes will cause minimal loss of agricultural production potential in terms of national food security.

Due to the facts that the MTS and power line will exclude only an insignificantly small area of land from agricultural production and not occupy any scarce, viable cropland, the overall negative agricultural impact of the development (loss of future agricultural production potential) is assessed here as being of very low significance and as acceptable.

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

1 INTRODUCTION

Environmental and change of land use authorisation is being sought for the proposed Hercules Grid Conneciton near De Aar in the Northern Cape Province (see location in Figure 1). In terms of the National Environmental Management Act (Act No 107 of 1998 - NEMA), an application for environmental authorisation requires an agricultural assessment. In this case, based on the low to medium agricultural sensitivity of the development site (see Section 7), the level of agricultural assessment required by the protocol is an Agricultural Compliance Statement.

Figure 1. *Locality map of the development southeast of De Aar.*

The purpose of an agricultural assessment is to answer the question:

> Will the proposed development cause a significant reduction in future agricultural production potential, and most importantly, will it result in a loss of arable land?

Section 9 of this report unpacks this question, particularly with respect to what constitutes a significant reduction. To answer the above question, it is necessary to determine the existing agricultural production potential of the land that will be impacted, and specifically whether it is viable arable land or not. This is done in Section 8 of this report. Sections 8 and 9 of this report directly address the above question and therefore contain the essence and most important part of the agricultural impact assessment.

2 PROJECT DESCRIPTION

The Hercules grid connection includes an MTS and 132kV powerline corridors (preferred and alternative) that will connect to the Hercules Solar PV facility.

In a low and largely uniform agricultural potential environment like the one being assessed, the exact location and layout of the facility infrastructure across the landscape has no real bearing on the significance of the agricultural impacts.

3 TERMS OF REFERENCE

The terms of reference for this study are to fulfill the requirements of the *Protocol for the specialist assessment and minimum report content requirements of environmental impacts on agricultural resources by onshore wind and/or solar photovoltaic energy generation facilities where the electricity output is 20 megawatts or more*, gazetted on 20 March 2020 in GN No. 320 (in terms of Sections 24(5)(A) and (H) and 44 of NEMA.

The terms of reference for an Agricultural Compliance Statement, as stipulated in GN No. 320, are listed below, and the section number of this report which fulfils each stipulation is given after it in bold.

- The Agricultural Compliance Statement must be prepared by a soil scientist or agricultural specialist registered with the South African Council for Natural Scientific Professions (SACNASP) **- Appendix 3**.
- The compliance statement must:
    - be applicable to the preferred site and proposed development footprint **- Figure 2 and Figure 3)**;
    - confirm that the site is of "low" or "medium" sensitivity for agriculture **- Section 7**; and
    - indicate whether or not the proposed development will have an unacceptable impact on the agricultural production capability of the site **- Section 12**.
- The Agricultural Compliance Statement must contain, as a minimum, the following information:
    - details and relevant experience as well as the SACNASP registration number of the soil scientist or agricultural specialist preparing the statement including a curriculum vitae **- Appendix 1**;
    - a signed statement of independence by the specialist **- Appendix 2**;

- a map showing the proposed development footprint (including supporting infrastructure) with a 50 metre buffered development envelope, overlaid on the agricultural sensitivity map generated by the National Web-Based Environmental Screening Tool (Screening Tool) promulgated in terms of Regulation 16(1)(b)(v) of the EIA Regulations. **Figure 2**;
- calculations of the physical development footprint area for each land parcel as well as the total physical development footprint area of the proposed development including supporting infrastructure - **Section 11.3**;
- confirmation that the development footprint is in line with the allowable development limits contained in Table 1 of the protocol (GN No. 320) - **Section 11.3**;
- 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 11.1**;
- 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 12**;
- any conditions to which this statement is subjected - **Section 12**;
- 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 11.2**;
- where required, proposed impact management outcomes or any monitoring requirements for inclusion in the Environmental Management Programme (EMPr) - **Section 10**; and
- a description of the assumptions made and any uncertainties or gaps in knowledge or data - **Section 5**.

4 METHODOLOGY OF STUDY

The assessment was based on an on-site investigation and verification of current agricultural land use and agricultural conditions conducted from 7 to 10 September 2024. It was also informed by existing climate, soil, and agricultural potential data for the site (see references). The aim of the on-site assessment was to:

1. ground-truth cropland status;
2. ground truth the land type soil data

The level of agricultural assessment is considered entirely adequate for an understanding of on-site agricultural production potential for the purposes of this assessment.

5 ASSUMPTIONS, UNCERTAINTIES OR GAPS IN KNOWLEDGE OR DATA

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

6 APPLICABLE LEGISLATION AND PERMIT REQUIREMENTS

This section identifies all applicable agricultural legislation and permit requirements over and above what is required in terms of NEMA.

If the MTS is part of the facility footprint that has already obtained change of land use authorisation, then no further approval from the National Department of Agriculture, Land Reform and Rural Development (DALRRD) should be needed.

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 unless either of the following two conditions apply:

- if the servitude width does not exceed 15 metres; and
- if Eskom is the applicant for the servitude.

If one or both conditions apply, then no agricultural consent is required. The second condition is likely to apply, even if another entity gets Environmental Authorisation for and constructs the power line, but then hands it over to Eskom for its operation. Eskom is currently exempt from agricultural consent for power line servitudes.

7 SITE SENSITIVITY VERIFICATION

A specialist agricultural assessment is required to include a verification of the agricultural sensitivity of the development site as per the sensitivity categories used by the web-based environmental screening tool of the Department of Forestry, Fisheries and the Environment (DFFE). Agricultural sensitivity is an indication of the capability of the land for agricultural production, based only on its climate, terrain, and soil capabilities and its agricultural land use. The different categories of agricultural sensitivity indicate the priority by which land should be conserved as agricultural production land. However, the screening tool's agricultural sensitivity is often of very limited value for assessing agricultural impact. What is of importance to an agricultural assessment, rather than the site sensitivity verification, is its assessment of the cropping potential and its assessment of the

impact significance, both of which are not necessarily correlated with sensitivity.

The screening tool classifies agricultural sensitivity according to two independent criteria, from two independent data sets, both of which may be indicators of the land's agricultural production potential but are limited in that the first is outdated and the second is fairly course, modelled data. The two criteria are:

1. whether the land is classified as cropland or not on the field crop boundary data set (Crop Estimates Consortium, 2019), and
2. its land capability rating on the land capability data set (DAFF, 2017)

These two inputs operate independently, and agricultural sensitivity is simply determined by whichever of these two gives the highest sensitivity rating. All classified cropland is, by definition, either high or very high sensitivity. Land capability is defined as the combination of soil, climate, and terrain suitability factors for supporting rain-fed agricultural production. It is rated by the Department of Agriculture's updated and refined, country-wide land capability mapping (DAFF, 2017). The higher land capability values (≥8 to 15) are likely to indicate suitability as arable land for crop production, while lower values (<8) are likely to only be suitable as non-arable grazing land, although application to the winter rainfall areas differs. The direct relationship between land capability rating, agricultural sensitivity, and rain-fed cropping suitability is shown in Table 1, including differences between the summer and winter rainfall areas.

Table 1: Relationship between land capability, agricultural sensitivity, and rain-fed cropping suitability.

<table>
<tr><th rowspan="2">Land capability value</th><th rowspan="2">Agricultural sensitivity</th><th colspan="2">Rain-fed cropping suitability</th></tr>
<tr><th>Summer rainfall areas</th><th>Winter rainfall areas</th></tr>
<tr><td>1 - 5</td><td>Low</td><td rowspan="3">Unsuitable</td><td rowspan="2">Unsuitable</td></tr>
<tr><td>6</td><td rowspan="2">Medium</td></tr>
<tr><td>7</td><td rowspan="4">Suitable</td></tr>
<tr><td>8</td><td rowspan="2">High</td><td rowspan="3">Suitable</td></tr>
<tr><td>9 - 10</td></tr>
<tr><td>11 - 15</td><td>Very High</td></tr>
</table>

The agricultural sensitivity of the site, as given by the screening tool, is shown in Figure 2. The screening tool sensitivity requires specialist verification because of the limitations of the data sets on which it is based.

This verification of sensitivity addresses both components that determine it, namely cropping status (that is whether the land is currently or has recently been used for crop production) and land

capability. The screening tool classifies the facility footprint and access road as ranging from low to medium agricultural sensitivity. None of the land is classified as cropland and the rating of agricultural sensitivity is therefore purely a function of classified land capability as per Table 1 above. This assessment verifies that the site is not within crop boundaries and therefore confirms the less than high sensitivity rating by the screening tool that is based on the cropping status component of sensitivity.

The classified land capability of the site ranges from 1 to 7. This assessment verifies the classified land capability, based on the assessment of the cropping potential of the site in this report (see Section 8) and therefore verifies it as being of medium agricultural sensitivity in terms of the land capability component of sensitivity.

In conclusion, this assessment confirms the low to medium sensitivity rating of the site by the screening tool because of the site's assessed agricultural production potential and current agricultural land use.

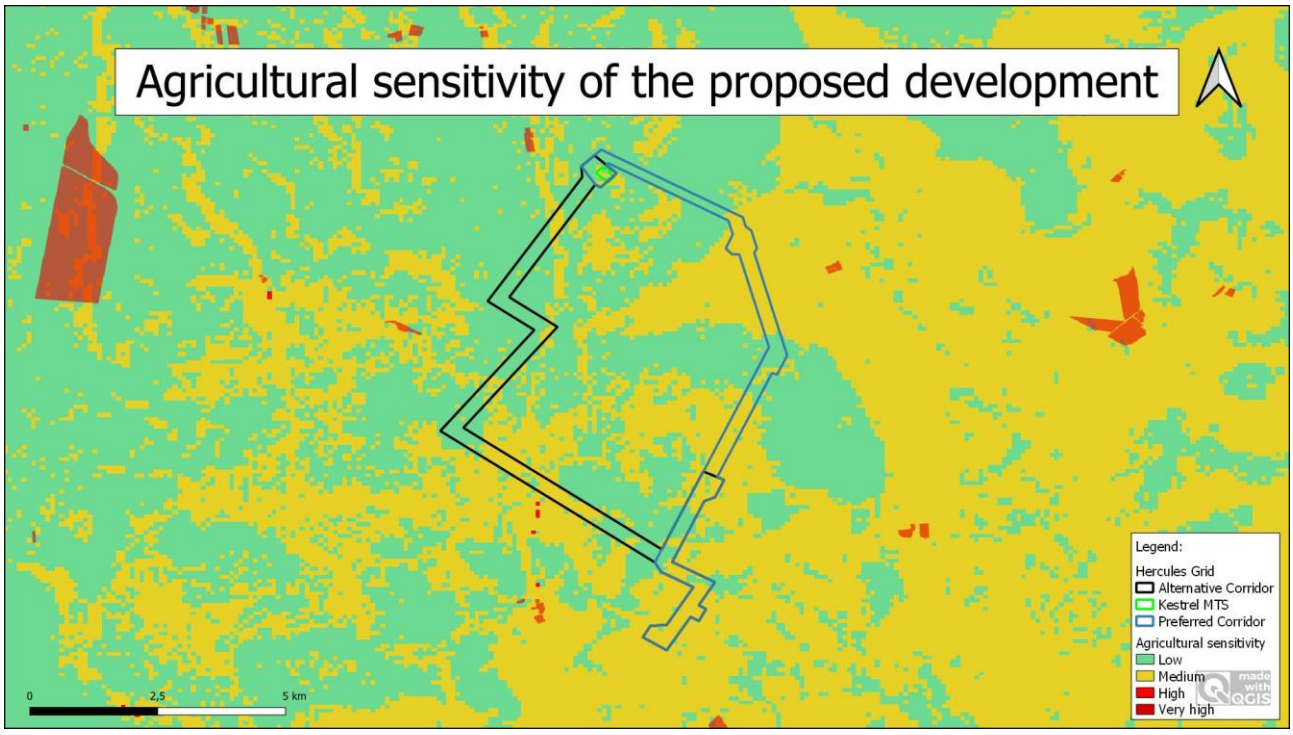

Figure 2. *The grid connection corridors overlaid on agricultural sensitivity, as classified by the screening tool.*

8 BASELINE DESCRIPTION OF THE AGRO-ECOSYSTEM

The purpose of this section is firstly to present the baseline information that controls the agricultural production potential of the site and then to assess that potential. Agricultural production potential, and particularly cropping potential, is one of three factors that determines the significance of an

agricultural impact, together with size of footprint and duration of impact (see Section 9).

The land type soil data are given in Appendix 5. A satellite image map of the development site is given in Figure 3 and site photographs are given from Figures 4 to 5.

The climate is classified as arid (Beck et al, 2018) with a mean annual rainfall of 280 mm and evaporation of 1512 mm (Schulze, 2009). Climate is therefore the limiting factor for land capability, regardless of the soil and terrain capability, although shallow, rocky soils are an additional limitation (DAFF, 2002). Moisture availability is very limiting to any kind of agricultural production, including grazing and is completely insufficient for rain-fed crop production. The climate constraints mean that the site has very low agricultural potential and its agricultural use is limited to grazing only.

The land has a long-term grazing capacity of 20 hectares per large stock unit (DAFF, 2018). Because climate is the limiting factor that controls production potential, it is the only aspect of the agro-ecosystem description that is required for assessing the agricultural impact of this development. All other agricultural potential parameters become irrelevant under the dominant limitation of aridity.

The site is not within a Protected Agricultural Area (PAA) (DALRRD, 2020). A PAA is a demarcated area in which the climate, terrain, and soil are generally conducive for agricultural production and which, historically, or in a regional context, has made important contributions to the production of the various crops that are grown across South Africa. Within PAAs, the protection of arable land, is considered a priority for the protection of food security in South Africa.

Figure 3. *Map of the facility.*

Figure 4. *Typical site conditions*

Figure 5. *Typical site conditions*

9 ASSESSMENT OF THE AGRICULTURAL IMPACT

9.1 Impact identification and assessment

It should be noted that an Agricultural Compliance Statement is not required to formally rate agricultural impacts by way of impact assessment tables.

There is only ever a single agricultural impact of any development, and it is a net change to the future agricultural production potential of land. It occurs as a result of different mechanisms, some of which decrease production potential (for example exclusion of agriculture from land) and some of which increase it (for example increased financial security). Change to the future agricultural production potential of land takes place over the lifetime of a development. What is of relevance is the net change from pre-development to post-development. It is not helpful to distinguish different levels of impact during the different phases of the development such as design, construction, and operation. The total , integrated impact is what matters.

In most developments the decrease in production potential is primarily caused by the exclusion of

agriculture from the footprint of the development. Soil erosion and degradation may also contribute to loss of agricultural production potential, but these can be managed so as not to cause impact. The significance of a loss of agricultural production potential is a direct function of the following three factors:

1. the size of the footprint of land from which agriculture will be excluded (or the footprint that will have its potential decreased)
2. the baseline production potential (particularly cropping potential) of that land
3. the length of time for which agriculture will be excluded (or for which potential will be decreased).

The most significant loss of agricultural land possible, for any development anywhere in the country, is of high yielding cropland, and the least significant possible, is of low carrying capacity grazing land.

Cropping potential is highlighted in factor 2, above, because the threshold, above which it is a priority to conserve land for agricultural production, is determined by the scarcity of arable crop production land in South Africa (approximately only 13% of the country's surface area) and the relative abundance of the rest of agricultural land across the country that is only good enough to be used for grazing. If land can support viable and sustainable crop production, then it is considered to be above the threshold and is a priority for being conserved as agricultural production land. If land is unable to support viable and sustainable crop production, then it is considered to be below the threshold and of much lower priority for being conserved.

In this case, the entire assessed area is considered to be below the threshold for needing to be conserved as agricultural production land because of the limitations that make it unsuitable as viable cropland. The use of this land for non-agricultural purposes will cause minimal loss of future agricultural production potential in terms of national food security.

Only the relatively small footprint of the MTS will be completely lost to agriculture. Due to its small size and that it will not occupy any scarce, viable cropland, the overall negative agricultural impact of the MTS component (loss of future agricultural production potential) is assessed here as being of low significance and as acceptable.

The proposed overhead power line has negligible agricultural impact. The agricultural impact of a power line is negligible in almost all environments but is even more so where agricultural land use is predominantly grazing, which it is in the environment that is the subject of this assessment. All possible agricultural activities can continue entirely unhindered underneath the power line. The direct, permanent, physical footprint that has any potential to interfere with agriculture is confined to pylon bases and a servitude track and is therefore insignificantly small. The only potential source

of impact of the power line is minimal disturbance to the land (erosion and topsoil loss) during construction (and decommissioning). This impact can be completely prevented with standard, generic mitigation measures that are all inherent in the project engineering and/or are standard, best-practice for construction sites, and are included in the generic EMPr developed by DFFE. The power line will result in negligible loss of future agricultural production potential and its agricultural impact is therefore assessed as being of very low significance and as acceptable.

9.2 Cumulative impact assessment

Specialist assessments for environmental authorisation are required to include an assessment of 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.

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 future agricultural production potential. The defining question for assessing the cumulative agricultural impact is this:

> What loss of future agricultural production potential 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?

The Department of Forestry, Fisheries and the Environment (DFFE) requires compliance with a specified methodology for the assessment of cumulative impacts. This is positive in that it ensures engagement with the important issue of cumulative impacts. However, the required compliance has some limitations and can, in the opinion of the author, result in an over-focus on methodological compliance, while missing the more important task of effectively answering the above defining question.

This cumulative impact assessment determines the quantitative loss of agricultural land if all renewable energy project applications within a 30 km radius become operational. These projects are listed in Appendix 4 of this report. Note that electrical grid infrastructure projects do not

contribute to a loss of agricultural land and are not therefore included in this calculation of cumulative land loss. The area of land taken out of agricultural use as a result of all the projects listed in Appendix 4 (total generation capacity of 3544 MW) will amount to a total of approximately 7324 hectares. This is calculated using the industry standards of 2.5 and 0.3 hectares per megawatt for solar and wind energy generation respectively, as per the Department of Environmental Affairs (DEA) Phase 1 Wind and Solar Strategic Environmental Assessment (SEA) (2015). As a proportion of the total area within a 30 km radius (approximately 282,700 ha), this amounts to only 2.59% of the surface area. This is within an acceptable limit in terms of loss of low potential agricultural land, which is only suitable for grazing, and of which there is no scarcity in the country. This is particularly so when considered within the context of the following point.

For South Africa to develop the renewable energy generation that it urgently needs, agriculturally zoned land will need to be used for renewable energy generation. It is preferable to incur a cumulative loss of agricultural land, which has no crop production potential, then to lose agricultural land that has a higher potential, and that is much scarcer, to renewable energy development elsewhere in the country.

All the projects contributing to cumulative impact for this assessment have the same agricultural impacts in a very similar agricultural environment, and therefore the same mitigation measures apply to all.

It should also be noted that renewable energy development can only be located in fairly close proximity to a substation that has available capacity. This creates cumulative impact in such places. However, this is acceptable because it also effectively protects most agricultural land in the country from renewable energy development because only a small proportion of the country's total land surface is in close enough proximity to an available substation to be viable for renewable energy development.

Furthermore, it should be noted that there are few land uses, other than renewable energy, that are competing for agricultural land use in this area. The cumulative impact from developments, other than renewable energy, is therefore likely to be low.

The loss of agricultural potential by soil degradation can effectively be prevented for renewable energy developments by generic mitigation measures that are all inherent in the project engineering and/or are standard, best-practice for construction sites. Soil degradation does not therefore pose a cumulative impact risk.

Due to all the considerations discussed above, the cumulative impact of loss of future agricultural production potential is assessed as low. It will not have an unacceptable negative impact on the agricultural production capability of the area, and it is therefore recommended, from a cumulative

agricultural impact perspective, that the development be approved.

9.3 Assessment of alternatives

Specialist assessments for environmental authorisation are required to include a comparative assessment of alternatives, including the no-go alternative. Because of the insignificant agricultural impact of the power line, there can be no material difference between the agricultural impacts of the proposed corridor alternatives. All have insignificant agricultural impact and are considered equally acceptable in terms of agricultural impact.

The no-go alternative considers impacts that will occur to the agricultural environment in the absence of the proposed development. There are no agricultural impacts of the no-go alternative, but this is not significantly different from the low impact of the development, and so from an agricultural impact perspective, there is no preferred alternative between the no-go and the development. However, the no-go option would prevent the proposed development plus the dependent renewable energy development, which cannot operate without a grid connection, from contributing to the environmental, social, and economic benefits associated with the development of renewable energy in South Africa.

10 MITIGATION

The most important and effective mitigation of agricultural impacts for any development is avoidance of viable, potential cropland. This development has already applied this mitigation by selecting a site on which there is no viable, potential cropland.

There are no additional mitigation measures required, over and above what has already been included in the *Generic Environmental Management Programme (EMPr) For The Development And Expansion For Overhead Electricity Transmission And Distribution Infrastructure* and the *Generic Environmental Management Programme (EMPr) For Substation Infrastructure For The Transmission And Distribution Of Electricity,* as per Government Notice 435, which was published in Government Gazette 42323 on 22 March 2019.

11 ADDITIONAL ASPECTS REQUIRED IN AN AGRICULTURAL ASSESSMENT

11.1 Micro-siting

The agricultural protocol requires confirmation that all reasonable measures have been taken through micro-siting to minimize fragmentation and disturbance of agricultural activities. Because of the uniformly low agricultural potential of the environment, with no cropping, micro-siting will make no material difference to agricultural impacts and disturbance.

11.2 Confirmation of linear activity exclusion

If linear infrastructure has been given exclusion from complying with certain requirements of the agricultural protocol because of its linear nature, the protocol requires confirmation that the land impacted by that linear infrastructure can be returned to the current state within two years of completion of the construction phase. No such exclusion applies to this project.

12 CONCLUSION: AGRICULTURAL COMPLIANCE STATEMENT

The overall conclusion of this assessment is that the proposed development is acceptable because it leads to no loss of potential cropland and therefore minimal loss of future agricultural production potential.

This assessment confirms the low to medium sensitivity rating of the site by the screening tool because of the site's assessed agricultural production potential and current agricultural land use.

The climate is classified as arid. Climate is therefore the limiting factor for land capability, regardless of the soil and terrain capability, although shallow, rocky soils are an additional limitation. Moisture availability is very limiting to any kind of agricultural production, including grazing and is completely insufficient for rain-fed crop production. The climate constraints mean that the site has very low agricultural potential and its agricultural use is limited to grazing only.

An agricultural impact is a change to the future agricultural production potential of land. This is primarily caused by the exclusion of agriculture from the footprint of the development. In this case, the development footprint is considered to be below the threshold for needing to be conserved as agricultural production land because of the limitations that make it unsuitable as viable cropland. The use of this land for non-agricultural purposes will cause minimal loss of agricultural production potential in terms of national food security.

Due to the facts that the MTS and power line will exclude only an insignificantly small area of land from agricultural production and not occupy any scarce, viable cropland, the overall negative agricultural impact of the development (loss of future agricultural production potential) is assessed here as being of very low significance and as acceptable.

From an agricultural impact point of view, it is recommended that the proposed 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, other than implementation of the proposed mitigation measures.

13 REFERENCES

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APPENDIX 1: SPECIALIST CURRICULUM VITAE

Johann Lanz
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**

Within the past 5 years of running my soil and agricultural consulting business, I have completed more than 170 agricultural assessments (EIAs, SEAs, EMPRs) in all 9 provinces for renewable energy, mining, electrical grid infrastructure, urban, and agricultural developments. I was the appointed agricultural specialist for the nation-wide SEAs for wind and solar PV developments, electrical grid infrastructure, and gas pipelines. My regular clients include: Zutari; CSIR; SiVEST; SLR; WSP; Arcus; SRK; Environamics; Royal Haskoning DHV; ABO; Enertrag; WKN-Windcurrent; JG Afrika; 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.
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I am a reviewing scientist for the *South African Journal of Plant and Soil*.

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APPENDIX 2: SPECIALIST DECLARATION FORM AUGUST 2023

Specialist Declaration form for assessments undertaken for 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)

REPORT TITLE: THE PROPOSED HERCULES GRID CONNECTION INFRASTRUCTURE NEAR DE AAR, NORTHERN CAPE PROVINCE

Kindly note the following:

1. This form must always be used for assessment that are in support of applications that must be subjected to Basic Assessment or Scoping & Environmental Impact Reporting, where this Department is the Competent Authority.
2. This form is current as of August 2023. 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.dffe.gov.za/documents/forms.
3. An electronic copy of the signed declaration form must be appended to all Draft and Final Reports submitted to the department for consideration.
4. The specialist must be aware of and comply with '*the 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 act, when applying for environmental authorisation - GN 320/2020)'*, where applicable.

1. SPECIALIST INFORMATION

Title of Specialist Assessment	Agricultural Assessment
Specialist Company Name	SoilZA (sole proprietor)
Specialist Name	Johann Lanz
Specialist Identity Number	6607045174089
Specialist Qualifications:	M.Sc. (Environmental Geochemistry)
Professional affiliation/registration:	Registered Professional Natural Scientist (Pr.Sci.Nat.) Reg. no. 400268/12 Member of the Soil Science Society of South Africa
Physical address:	2 Roeland Terrace, CAPE TOWN, 8001
Postal address:	Postnet Suite #500, Private Bag X16 Constantia, 7848
Telephone	Not applicable
Cell phone	+27 82 927 9018
E-mail	johann@soilza.co.za

2. DECLARATION BY THE SPECIALIST

I, **Johann Lanz** declare that –

- I act as the independent specialist in this application;
- I am aware of the procedures and requirements 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 (NEMA), 1998, as amended, when applying for environmental authorisation which were promulgated in Government Notice No. 320 of 20 March 2020 (i.e. “the Protocols”) and in Government Notice No. 1150 of 30 October 2020.
- 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 NEMA Act.

Signature of the Specialist

SoilZA (sole proprietor)

Name of Company:

22 May 2025

Date

3. UNDERTAKING UNDER OATH/ AFFIRMATION

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

Signature of the Specialist

SoilZA – sole proprietor

Name of Company

22 May 2025

Date

7175165-3

O CAROLUS

Signature of the Commissioner of Oaths

2025-05-22

Date

SUID-AFRIKAANSE POLISIEDIENS
GEMEENSKAPSDIENSSENTRUM
22 MAY 2025
COMMUNITY SERVICE CENTRE
MELKBOSSTRAND
SOUTH AFRICAN POLICE SERVICE

APPENDIX 3: SACNASP REGISTRATION CERTIFICATE

SACNASP

South African Council for Natural Scientific Professions

herewith certifies that

Johan Lanz

Registration Number: 400268/12

is a registered scientist

in terms of section 20(3) of the Natural Scientific Professions Act, 2003
(Act 27 of 2003)
in the following field(s) of practice (Schedule 1 of the Act)

Soil Science (Professional Natural Scientist)

Effective **15 August 2012** Expires **31 March 2026**

Chairperson

Chief Executive Officer

To verify this certificate scan this code

APPENDIX 4: PROJECTS INCLUDED IN CUMULATIVE IMPACT ASSESSMENT

Table 3: Table of all projects that were included in the cumulative impact assessment.

DFFE Reference	Project name	Technology	Capacity (MW)
14/12/16/3/3/2/998	Proposed developmnt of a 225MW solar PV facility on several portions of farms in the Hanover District, Emthanjeni Local Municipality, Pixley Ka Seme District Municipality, Northern Cape Provinc	SEF	225
14/12/16/3/3/2/2267	The proposed development of a 300MW solar PV facility (phase 2) on several portions of the farms in the Hanover District, Emthanjeni local municipality, Pixley Ka Seme District Municipality, Northern Cape Province	SEF	300
12/12/20/2258/4	The Proposed Establishment Of Photovoltaic (Solar Power) Farms In The Northern Cape Province	SEF	100
12/12/20/1651/A2	Proposed establishment of a wind power generating facility near De Aar, Northern Cape.	WEF	100
14/12/16/3/3/2/506	Proposed photovoltaic Soalr energy fascility (PV4) on Badenhost Dam Farm near De Aar in the Northern Cape Province	SEF	75
14/12/16/3/3/2/382/AM4	The Proposed Construction Of Seven Photovoltaic Solar Energy Facilities, Six Facilities Will Be Generating 75mw And The Other Facility 30mw On The Remaining Extent Of The Farm Vetlaagte 4 In De Aar, Northern Cape Province	SEF	480
14/12/16/3/3/2/663	The Proposed Establishment of an 86mw Solar Facility on Portion 4 of the Farm Riet Fountain No. 6 in the Mathanjeni Local Municipality, Northern Cape Province	SEF	86

14/12/16/3/3/2/456	The Proposed Photovoltaic (Solar) Energy Facilities On Du Plessis Dam Farm Near De Aar, Emthanjeni Local Municipality, Nothern Cape Province.	SEF	75
12/12/20/2048/4	Proposed construction of the Ilanga Lethemba 4 PV energy facility in De Aar, Northern Cape Province	SEF	75
14/12/16/3/3/2/2157	The proposed Wagt solar Pv1 facility, Northern Cape	SEF	100
12/12/20/2463/2	Longyuan Mulilo De Aar Maanhaarberg Wind Energy Facility	WEF	258
14/12/16/3/3/2/278	Proposed Castle wind energy facility project, located near De Aar, Northern Cape Province	WEF	140
12/12/20/2463/1/AM5	The Wind Energy Facility (North And South) Situated On The Plateau Near De Aar, Northern Cape Province	WEF	100
12/12/20/2463/2/AM2	The Wind Energy Facility (North And South) Situated On The Plateau Near De Aar, Northern Cape Province	WEF	100
TBC	Hercules PV	SEF	315
TBC	Hartebeeshoek PV	SEF	303
TBC	Jupiter PV	SEF	307
TBC	Roodekraal PV	SEF	405
Total solar			
Total wind			
Total			

Note: Electrical grid infrastructure projects do not contribute to a loss of agricultural land and are not therefore included in this table and in the calculation of cumulative land loss.