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**Agricultural specialist input to  
An Environmental Authorisation Amendment  
for the authorised Beaufort West Solar PV Energy Facility  
Western Cape Province**

The Beaufort West Solar PV Energy Facility has received environmental authorisation (EA). The applicant wishes to amend the Environmental Authorisation for the following:

- The project will remain within the same assessed site. The project components will remain largely unchanged, apart from their configurations / locations and some increases in footprint area.

It is important to note that the exact nature and layout of the different infrastructure within the boundary fence of a solar energy facility has absolutely no bearing on the significance of agricultural impacts. All that is of relevance is simply the total footprint of the facility that excludes agricultural land use, which is the area within the facility fence. The fenced footprint of the facility is assessed in this assessment.

The Agricultural Impact Assessments completed in 2022 rated the significance of the agricultural impact as low. This was because the site was found to have a very low agricultural production potential due to the constraint of the classified arid, desert climate (Beck et al, 2018) as well as soil depth constraints (DAFF, 2002).

It is hereby confirmed that the current status of the site remains exactly as it was in the original assessment. Agricultural production potential is a function of climate, terrain and soils and cannot change significantly in the time period since the original assessment, or even in a much longer time period. Land use (grazing only) has also not changed on the site since the original assessment.

## 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). The screening tool's classification of sensitivity is merely an initial indication of what the sensitivity of a piece of land might be, as indicated by the only data that is available. What the screening tool attempts to indicate is whether the land is suitable for crop production (high and very high sensitivity) or unsuitable for crop production (low and medium sensitivity). To do this, the screening tool uses two independent criteria, from two independent data sets, which are both indicators of suitability for crop production but are limited and were not designed for this purpose. The first is outdated and the second is fairly coarse, modelled data which is not accurate at site scale. 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). All classified cropland is, by definition, either high or very high sensitivity.
2. Its land capability rating as per the Department of Agriculture's updated and refined, country-wide land capability mapping (DAFF, 2017). Land capability is defined as the combination of soil, climate, and terrain suitability factors for supporting rain-fed agricultural production. The direct relationship between land capability rating, agricultural sensitivity, and rain-fed cropping suitability is summarised by this author in Table 1.

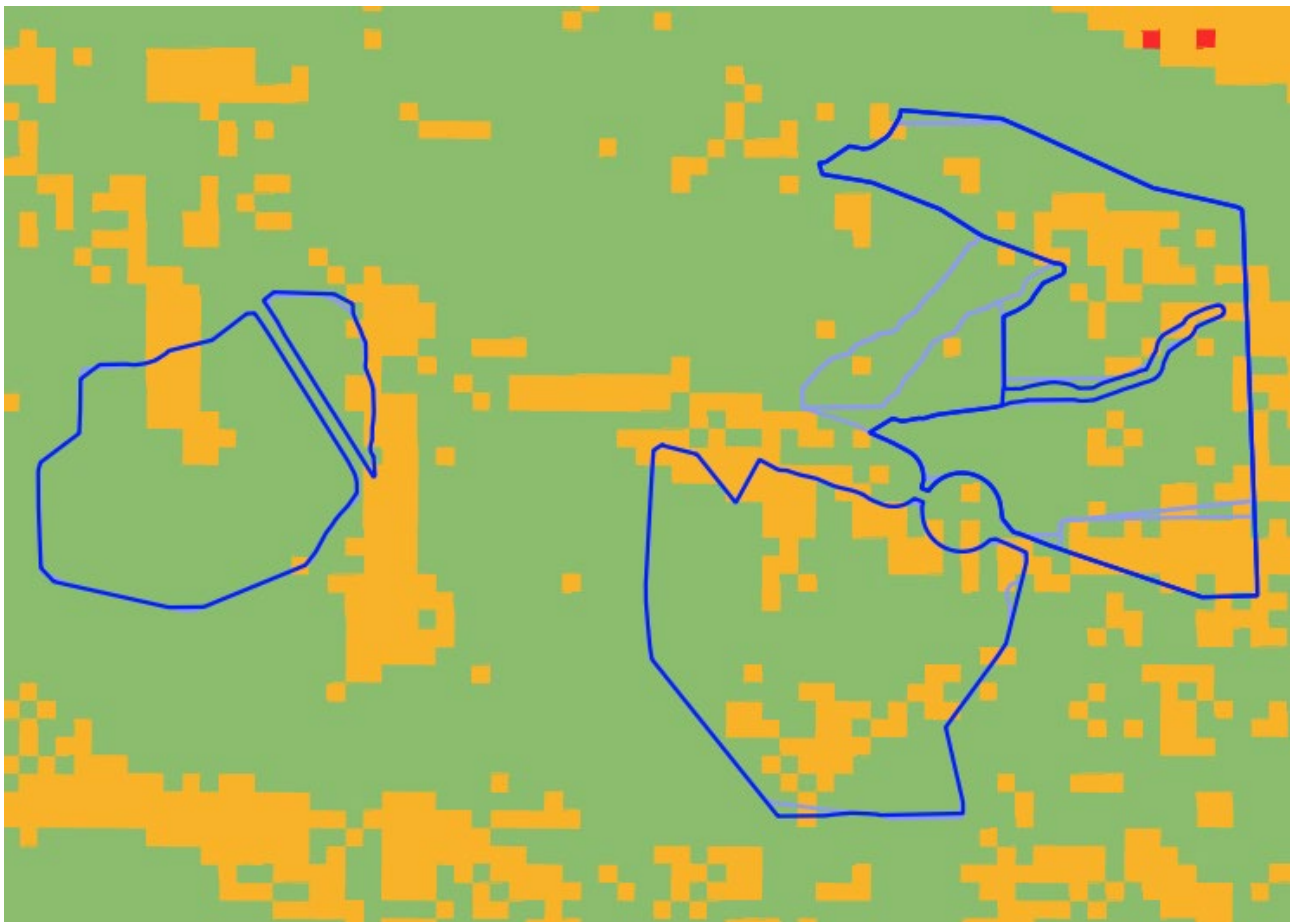
These two inputs operate independently, and the screening tool's agricultural sensitivity is simply determined by whichever of these two gives the highest sensitivity rating. The agricultural sensitivity of the site, as classified by the screening tool, is shown in Figure 1.

The true agricultural sensitivity of any land is equivalent to its actual suitability for crop production on the ground, rather than being determined by a parameter that serves as a proxy for crop suitability in a dataset. The land's suitability for cropping directly determines how important it is to conserve that land as agricultural production land. To determine suitability for crop production, and hence sensitivity, requires a site-specific assessment, as has been conducted in this assessment, rather than a reliance on data sets that have significant limitations.

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

Land capability value	Agricultural sensitivity	Rain-fed cropping suitability	
		Summer rainfall areas	Winter rainfall areas
1 - 5	Low	Unsuitable	Unsuitable
6	Medium		
7			Suitable
8 - 10	High		
11 - 15	Very High		

**Note:** There is an error in the screening tool whereby a land capability of 8 is classified as medium sensitivity, but according to NEMA's agricultural protocol, should in fact be classified as high sensitivity. This assessment follows the agricultural protocol definition and classifies a value of 8 as high sensitivity.



**Figure 1.** The assessed development footprint overlaid on agricultural sensitivity, as classified by the screening tool (green = low; yellow = medium; red = high; dark red = very high). The footprint of the preferred alternative is shown in bold blue and that of the other alternative is shown in pale blue.

The screening tool classifies the assessed site as ranging from low to medium agricultural sensitivity and therefore classifies the overall site sensitivity, which is the highest sensitivity encountered across the site, as medium. The site is not at all suitable for viable crop production due to extreme climate and soil limitations and its true sensitivity, as assessed on the ground, is therefore low/medium. This assessment therefore confirms the low/medium sensitivity classification by the screening tool because of the site's assessed cropping potential. Note that there is no real difference between low and medium agricultural sensitivity and whether land is low or medium, has no implications for agricultural impact.

### **Cumulative Impact**

This cumulative impact assessment of this development determines the quantitative loss of agricultural land if all renewable energy project applications within a 30 km radius become operational, even though not all will necessarily ever become operational. These projects are listed in Table 2 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 Table 2 (total generation capacity of 1120 MW) will amount to a total of approximately 2184 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 0.77% of the surface area. This is assessed as being within an acceptable limit in terms of loss of agricultural land. The cumulative agricultural impact of the proposed development is therefore assessed here as being of low significance and therefore as acceptable. The development 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.

**Table 2:** Table of all projects that were included in the cumulative impact assessment.

<b>DFFE Reference</b>	<b>Project name</b>	<b>Technology</b>	<b>Capacity (MW)</b>
14/12/16/3/3/2/773	Proposed Establishment of the Beaufort West Solar Power Plant Site 2, Western Cape Province	SEF	90
14/12/16/3/3/2/774	Proposed Beaufort West Solar power plant site 3 near Beaufort West, Western Cape Province	SEF	90
14/12/16/3/3/2/2043	Nuweveld West Wind Farm, Beaufort West Municipality, Western Cape Province	WEF	280
12/12/20/2286/AM4	The Proposed Beaufort West Photovoltaic Park On Portion 9 Of The Farm 161 Kuilspoort in The Western Cape Province	SEF	85
14/12/16/3/3/1/2332	Proposed 75MW Beaufort West Photovoltaic (PV) Project, Western Cape Province	SEF	75
14/12/16/3/3/1/2921	The Proposed Development of the Solar Photovoltaic Facility, "Rhino" on Remainder of Farm Rhenosterkop 155 and "Sunnyside" on Farm 400, Beaufort West, Western Cape Province	SEF	500
<b>Total solar</b>			840
<b>Total wind</b>			280
<b>Total</b>			1120

Our assessment of the impacts of the proposed amendments confirms that:

1. The amendments do not change the nature or significance of the impact as previously assessed, including the cumulative impact.
2. There are no required changes or additions to the mitigation measures as a result of the proposed amendments.
3. There are no required changes to the EMPr as a result of the proposed amendments.
4. The proposed amendments are acceptable in terms of agricultural impact.

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

A handwritten signature in black ink, appearing to read 'J. Lanz', with a stylized, flowing script.

Johann Lanz (Pr.Sci.Nat. Reg. no. 400268/12)

19 February 2025

## References

Beck, H.E., N.E. Zimmermann, T.R. McVicar, N. Vergopolan, A. Berg, E.F. Wood. 2018. Present and future Köppen-Geiger climate classification maps at 1-km resolution, Nature Scientific Data. Available at: <https://gis.elenburg.com/apps/cfm/>.

Crop Estimates Consortium, 2019. *Field Crop Boundary data layer, 2019*. Pretoria. Department of Agriculture, Forestry and Fisheries.

Department of Agriculture Forestry and Fisheries (DAFF). 2018. Long-term grazing capacity map for South Africa developed in line with the provisions of Regulation 10 of the Conservation of Agricultural Resources Act, Act no 43 of 1983 (CARA), available on Cape Farm Mapper. Available at: <https://gis.elenburg.com/apps/cfm/>

Department of Agriculture, Forestry and Fisheries (DAFF). 2017. National land capability evaluation raster data layer, 2017. Pretoria.

Department of Agriculture, Forestry and Fisheries (DAFF). 2002. National land type inventories data set. Pretoria.

Department of Environmental Affairs (DEA). 2015. Strategic Environmental Assessment for wind and solar photovoltaic development in South Africa. CSIR Report Number CSIR: CSIR/CAS/EMS/ER/2015/001/B. Stellenbosch.



## forestry, fisheries & the environment

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### **APPENDIX 1: 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: An Environmental Authorisation Amendment for the authorised Beaufort West Solar Energy Facility Western Cape Province**

##### **Kindly note the following:**

- 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.
- 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>.
- An electronic copy of the signed declaration form must be appended to all Draft and Final Reports submitted to the department for consideration.
- 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:	1a Wolfe Street, Wynberg, Cape Town, 7800
Postal address:	1a Wolfe Street, Wynberg, Cape Town, 7800
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 –
  1. any decision to be taken with respect to the application by the competent authority; and;
  2. 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.



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Signature of the Specialist

SoilZA (sole proprietor)

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Name of Company:

18 February 2025

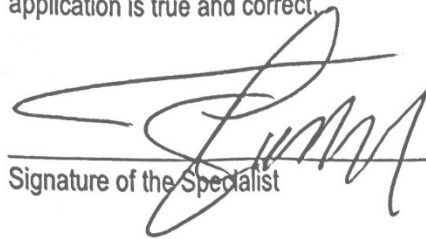
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Date

**SPECIALIST DECLARATION FORM – AUGUST 2023**

**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

**18/02/2025**

Date



Signature of the Commissioner of Oaths

**2023/02/18.**

Date

