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SITE SENSITIVITY VERIFICATION
AND
SCOPING PHASE AGRICULTURAL ASSESSMENT
FOR THE
PROPOSED EZELSJACHT 140 MW WIND ENERGY FACILITY (WEF),
AND ASSOCIATED GRID INFRASTRUCTURE
LOCATED NEAR DE DOORNS, WESTERN CAPE PROVINCE

Report by
Johann Lanz

2 November 2022

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1 INTRODUCTION

South Africa Mainstream Renewable Power Developments (Pty) Ltd ("Mainstream") is proposing to develop, own and operate one (1) Wind Energy Facility (WEF), Battery Energy Storage System (BESS), and associated infrastructure with a generation capacity of up to 140 megawatts (MW).
In order to evacuate the energy generated by the WEF to supplement the national grid, Mainstream is also proposing an electrical grid infrastructure (EGI)/grid connection project which will be assessed in a separate Basic Assessment Processes (i.e. EGI for WEF). The proposed WEF site is located approximately 13 km south-east of the town De Doorns, within the Cape Winelands District Municipality of the Western Cape Province. The site proposed for the WEF component falls within both the Breede Valley and the Langeberg Local Municipalities.

Environmental and agricultural authorisation is being sought for the proposed Ezelsjacht WEF located near De Doorns, Western 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.

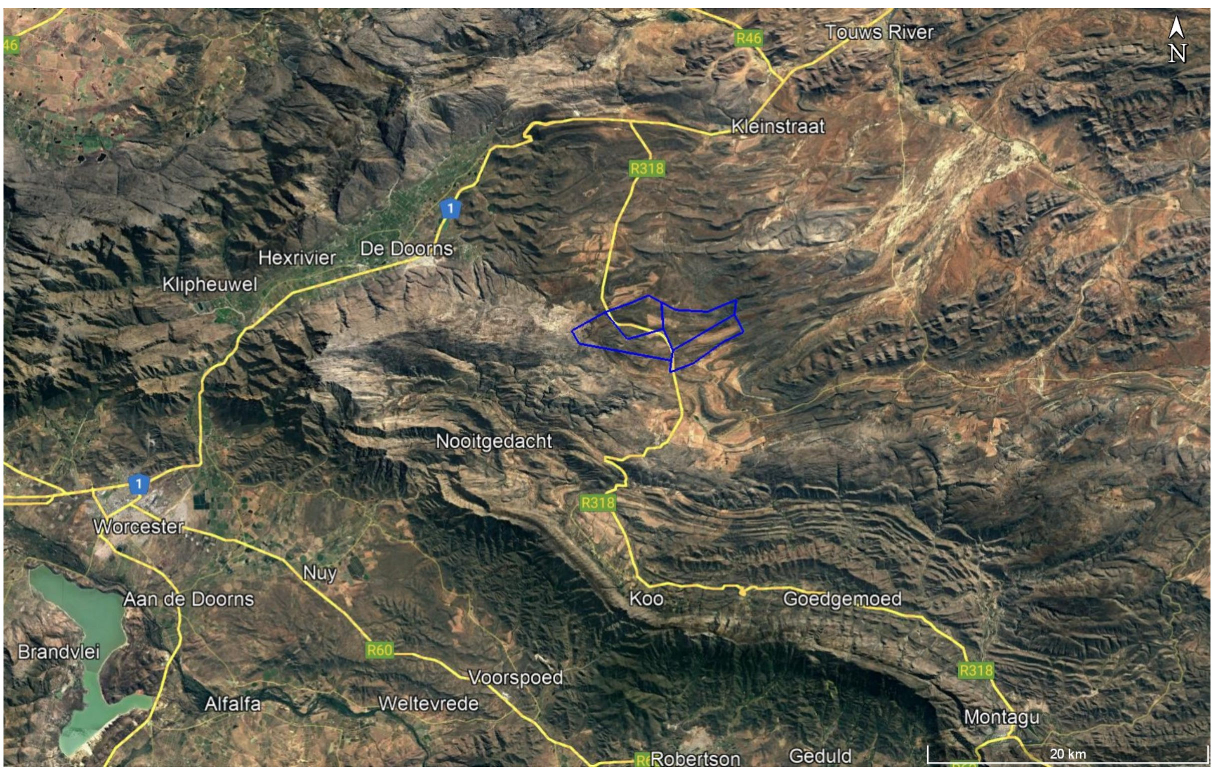

Figure 1. *Locality map of the areas proposed for the wind facility (dark blue outline), east of the town of De Doorns.*

Johann Lanz was appointed as an independent agricultural specialist to conduct the agricultural assessment. The objective and focus of an agricultural assessment is to assess whether or not the proposed development will have an unacceptable agricultural impact, and based on this, to make a recommendation on whether or not it should be approved.

The purpose of the agricultural component in the environmental assessment process is to preserve the agricultural production potential, particularly of scarce arable land, by ensuring that development does not exclude existing or potential agricultural production from such land or impact it to the extent that its future production potential is reduced.

2 PROJECT DESCRIPTION

At this stage it is proposed that the WEF component of the renewable energy facility will consist of up to a maximum of 35 wind turbine generators (WTG), with a hub height and rotor diameter of approximately 200 m respectively. The WEF will also include internal and/or access roads (with a width of up to 12 m during construction), a construction laydown area/camp, Operation & Maintenance (O&M) Building and Independent Power Producer (IPP) portion (33kV portion/yard of the shared 33/132kV onsite substation), amongst other associated infrastructure which is still to be confirmed. As mentioned, the WEF will have a generation capacity of up to 140 MW. The dimensions of infrastructure are listed in the table below.

Technical Component	Approximate Dimensions
Ezelsjacht WEF infrastructure	
Location of the site (centre point)	33°31'41.39"S 19°52'4.52"E
Access Roads	Access to the site will be off the R318 and existing access roads will be utilised as far as possible. The width of the access roads will be up to 12m wide.
Application site area	+/- 3,594 hectares
Affected Farm Portions	Portion 1 of Farm De Braak No. 7 Portion 6 of the Farm Ratelbosch No.149 Farm Zout Riviers No. 170 Remainder of Farm Ezelsjacht No. 171
SG Codes	C05000000000000700001 C08500000000014900006 C08500000000017000000 C08500000000017100000
Number of wind turbines and generation capacity	Up to a maximum of 35 turbines with an export capacity of 140 MW
Wind turbine specifications	• Rotor diameter: up to approximately 200m

Technical Component	Approximate Dimensions
	• Hub height: up to approximately 200m
Turbine Foundations	Each turbine will have a circular foundation of up to 20m (diameter of foundations), and up to 2m (depth of foundations)
Turbine Crane pads/hard stand areas	Up to 0,7 hectares per turbine
Operations and Maintenance Complex (25 hectares): Shared infrastructure with associated grid	• Operations and Maintenance Building approximately 5 hectares • Temporary laydown or staging area, approximately 3ha to be located on the site identified for the substation. It should be noted that no construction camps will be required in order to house workers overnight as all workers will be accommodated in the nearby town. • On-site Grid Connection and Substation: 33kV/132kV shared on site/step up substation with IPP portion (33/132kV transformer) and Eskom portion (132kV switching portion). • A Battery Energy Storage System (BESS) will be located next to the IPP portion / yard of the shared onsite 33/132kV substation and will cover an area of 5 ha. The storage capacity and type of technology would be determined at a later stage during the development phase, but will most likely be either solid state or redox flow.
Fencing	Galvanized steel and 1.8 m in height.
Associated Infrastructure	• Cabling: Underground 33kV cables, buried along internal access roads where feasible; and outside of the road footprints and where there are topography and environmental concerns. Overhead 33kV power lines will be constructed, using monopole structures where burying is not possible due to technical, geological, environmental or topographical constraints. 33kV overhead power lines supported by 132 kV pylons of approximately 22 m high will be required, as well as tracks for access to the pylons. • Electrical transformers will be located adjacent to each wind turbine (typical

Technical Component	Approximate Dimensions
	footprint of up to approximately 2m x 2m) to step up the voltage to between 11kV and 33kV; • Other Associated infrastructure (to be confirmed)

In terms of the wind facility, both the layout and the extent of the total agricultural footprint will influence agricultural impact.

This assessment includes the power line options of the grid connection. However, it is important to note that the power lines have a very different level of agricultural impact than other infrastructure because agriculture is not excluded from the land underneath a power line. The power line corridor is not therefore considered to be part of the agricultural footprint, in keeping with NEMA's agricultural protocol. The agricultural impact of a power line is insignificant in this environment, regardless of its route and design and the agricultural potential of the land it crosses.

3 METHODOLOGY OF STUDY

The assessment was based on an on-site investigation of the soils and agricultural conditions and was also informed by existing soil and agricultural potential data for the site. The following sources of existing 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 Crop Estimates Consortium, 2019. *Field Crop Boundary data layer, 2019*. Pretoria. Department of Agriculture, Forestry and Fisheries.
- 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.

The aim of the on-site Site Sensitivity Verification was to:

1. ground-truth cropland status and consequent agricultural sensitivity;
2. ground truth the land type soil data and achieve an understanding of the general range and distribution patterns of different soil conditions across the site;
3. gain an understanding of overall agricultural production potential across the site.

This was achieved by a drive and walk-over investigation across the site. The site investigation was conducted on 2 November 2022.

The soil investigation was based on the investigation of existing excavations and indications of the surface conditions and topography. Soils were classified according to the South African soil classification system (Soil Classification Working Group, 1991). This level of soil assessment is considered entirely adequate for an understanding of on-site soil potential for the purposes of this assessment.

4 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.

5 APPLICABLE LEGISLATION AND PERMIT REQUIREMENTS

A renewable energy facility requires approval from the National Department of Agriculture, Land Reform and Rural Development (DALRRD) if the facility is on agriculturally zoned land. There are two approvals that apply. The first is a No Objection Letter for the change in land use. This letter is one of the requirements for receiving municipal rezoning. It is advisable to apply for this as early in the development process as possible because not receiving this DALRRD approval is a fatal flaw for a project. Note that a positive EA does not assure DALRRD's approval of this. This application requires a motivation backed by good evidence that the development is acceptable in terms of its impact on the agricultural production potential of the development site. This assessment report will serve that purpose.

The second required approval is a consent for long-term lease in terms of the Subdivision of Agricultural Land Act (Act 70 of 1970) (SALA). If DALRRD approval for the development has already been obtained in the form of the No Objection letter, then SALA approval should not present any difficulties. Note that SALA approval is not required if the lease is over the entire farm portion. SALA approval (if required) can only be applied for once the Municipal Rezoning Certificate and Environmental Authorisation has been obtained.

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 of these 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.

Rehabilitation after disturbance to agricultural land is managed by the Conservation of Agricultural Resources Act (Act 43 of 1983) (CARA). A consent in terms of CARA is required for the cultivation of virgin land. Cultivation is defined in CARA as "any act by means of which the topsoil is disturbed mechanically". The purpose of this consent for the cultivation of virgin land is to ensure that only land that is suitable as arable land is cultivated. Therefore, despite the above definition of cultivation, disturbance to the topsoil that results from the construction of a renewable energy facility and its associated infrastructure does not constitute cultivation as it is understood in CARA. This has been corroborated by Anneliza Collett (Acting Scientific Manager: Natural Resources Inventories and Assessments in the Directorate: Land and Soil Management of the Department of Agriculture, Land Reform and Rural Development (DALRRD)). The construction and operation of the facility will therefore not require consent from the Department of Agriculture, Land Reform and Rural Development in terms of this provision of CARA.

6 SITE SENSITIVITY VERIFICATION

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

4. 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.;
5. contains a motivation and evidence (e.g. photographs) of either the verified or different use of the land and environmental sensitivity.

Agricultural sensitivity is a direct function of the capability of the land for agricultural production. All arable land that can support viable crop production, is classified as high (or very high) sensitivity. This is because there is a scarcity of arable production land in South Africa and its conservation for agricultural use is therefore a priority. Land which cannot support viable crop production is much less of a priority to conserve for agricultural use, and is rated as medium or low agricultural sensitivity.

The screening tool classifies agricultural sensitivity according to only two independent criteria – the land capability rating and whether the land is used for cropland or not. All cropland is classified as at least high sensitivity, based on the logic that if it is under crop production, it is indeed suitable for it, irrespective of its land capability rating.

The screening tool sensitivity categories in terms of land capability are based upon the Department of Agriculture's updated and refined, country-wide land capability mapping, released in 2016. The data is generated by GIS modelling. 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, based on its soil, climate and terrain. The higher land capability values (≥8 to 15) are likely to be suitable as arable land for crop production, while lower values are only likely to be suitable as non-arable grazing land.

A map of the proposed WEF development area overlaid on the screening tool sensitivity is given in Figure 2. The classification of parts of the site as high agricultural sensitivity (red in Figure 2) is because those parts are classified as cropland in the data set used by the screening tool. However that data set is outdated. The verified and updated indication of which lands should be classified as croplands is given in Figure 3. The other lands in Figure 2 are no longer used as cropland and have not been cropped in the last ten years according to the historical imagery available on Google Earth. They should not therefore still be classified as high agricultural sensitivity.

The fact that previously cropped lands are no longer viable for cropping is because the suitability for cropping changes with a changing agricultural economy. Poorer soils or marginal climates that may have been cropped with economic viability in the past, are abandoned as cropland because they become too marginal for viable crop production in a more challenging agricultural economy with higher input costs. Climate change and changes in rainfall patterns have also lead to poorer soils becoming more marginal.

The classified land capability of the site varies from 1 to 7. The variation is largely a function of terrain and rockiness. The land capability of the less mountainous areas is generally 6 to 7.

However, the small scale differences in the modelled land capability across the project area are not very accurate or significant at this scale and are more a function of how the data is generated by modelling, than actual meaningful differences in agricultural potential on the ground. Values of 1 to 5 translate to a low agricultural sensitivity and values of 6 to 8 translate to a medium agricultural sensitivity.

This site sensitivity verification verifies those parts of the site that are indicated as cropland in Figure 3 as being of high agricultural sensitivity. The rest of the site is verified as being of medium and low agricultural sensitivity. Low and medium agricultural sensitivity is appropriate in terms of the site's climate, terrain and soils (see following section).

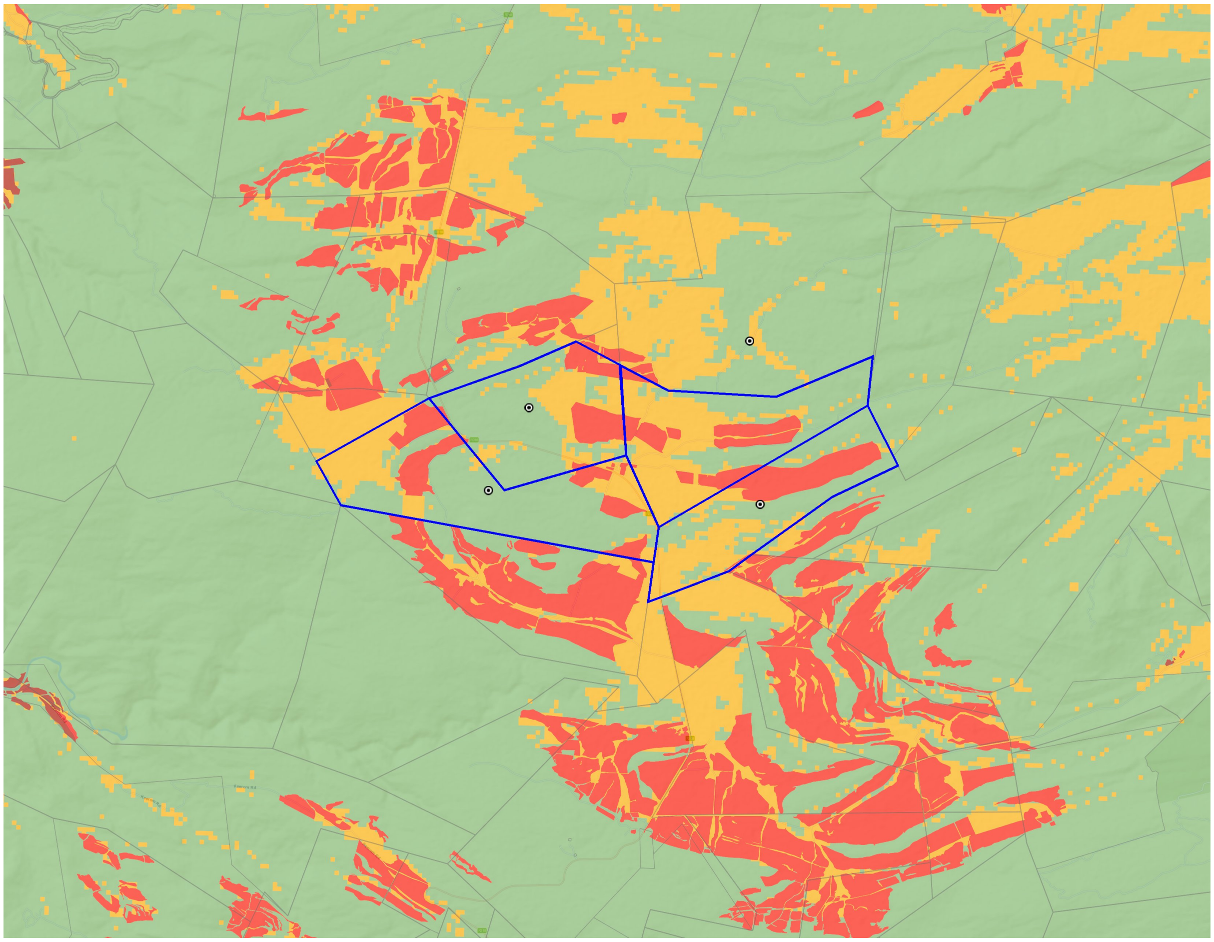

Figure 2. *The proposed development area (dark blue outline = wind) overlaid on agricultural sensitivity, as given by the screening tool (green = low; yellow = medium; red = high).*

Note that the agricultural sensitivity of the power line route has no relevance to this assessment of agricultural impact because of the negligible agricultural impact of the power line, irrespective of the sensitivity of the land it traverses.

7 BASELINE DESCRIPTION OF THE AGRO-ECOSYSTEM

The purpose of this section of the report is to present the baseline information that controls the agricultural production potential of the site so that the significance of the impact on it can be assessed.

A satellite image map of the assessed area is shown in Figure 3 and site photographs are shown in Figures 4 and 5.

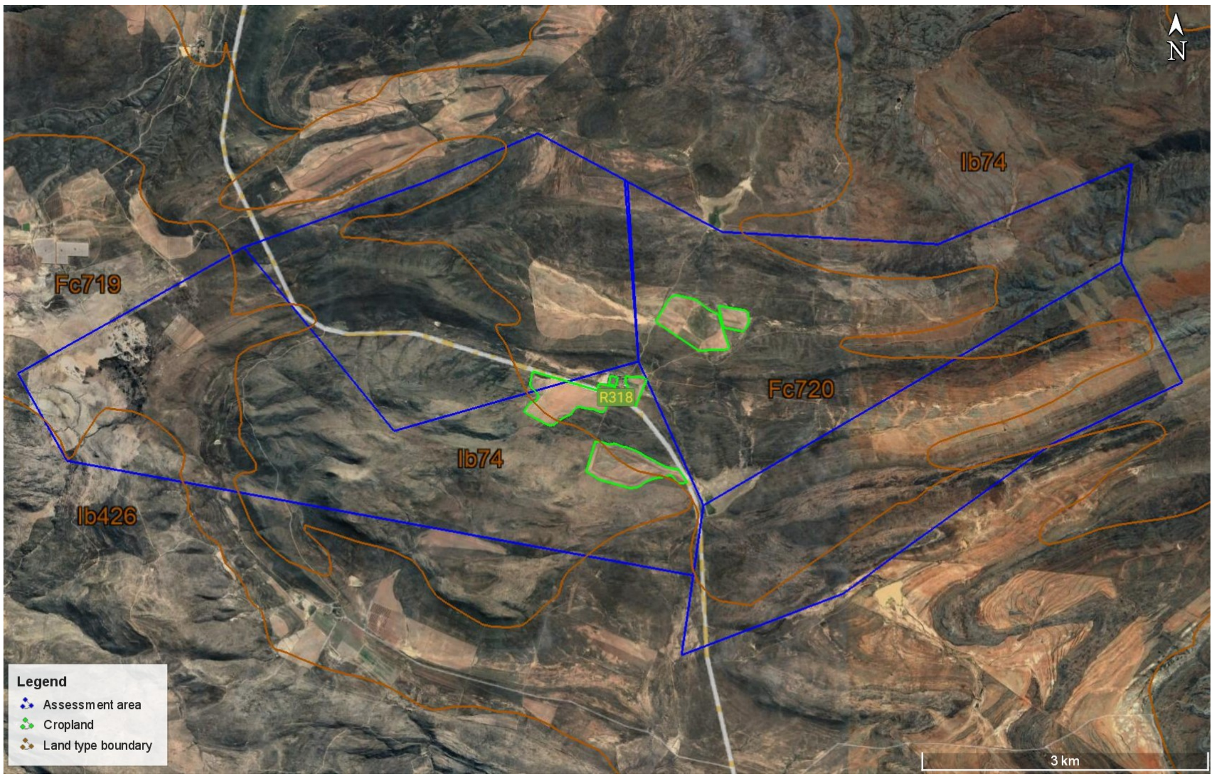

Figure 3. *Satellite image map of the site.*

The site is on a plateau which includes some rocky, mountainous ridges with a wide range of slope gradients and aspects. The geology of the majority of the site is shale and sandstone of the Bokkeveld Group. The geology of the mountainous land on the extreme south western side of the site is quartzitic and feldspathic sandstone of the Skurweberg and Rietvlei Formations, Table Mountain Group. There are four different land types across the site (see Figure 3). The land type soil data is given in Appendix 3. The dominant soils of all four land types are shallow soils on underlying weathered bedrock of the Glenrosa, Hutton, Swartland, and Mispah soil forms. There is a fairly high proportion of rock outcrops in all four of the land types. The soils are limited in their agricultural potential by shallow depths and rockiness. all unsuitable for crop production due to their limited depth.

Figure 4. *Typical site conditions with a view of old cropland in the foreground and natural veld in the background.*

Figure 5. *View of the limited area of cropland.*

The site has a winter rainfall with a low mean annual rainfall of between 254 and 293 mm and a fairly high mean annual evaporation of between 1,000 and 1,120 mm (Schulze, 2009). The combination of fairly shallow, rocky soils with consequent low water holding capacity and low climatic moisture availability mean that the site is at best very marginal for crop production.

Agricultural land use on the wind site is predominantly grazing with relatively small areas of cultivation (see Figure 3). Some of the cropland is under irrigation and some is dryland. The grazing capacity of the site is very low at 72 hectares per large stock unit.

8 ASSESSMENT OF AGRICULTURAL IMPACT

8.1 What constitutes an agricultural impact?

An agricultural impact is a temporary or permanent change to the future production potential of land. A decrease in future production potential is a negative impact and an increase is a positive impact. The significance of the agricultural impact is directly proportional to the extent of the change in production potential.

8.2 The significance of agricultural impact and the factors that determine it

When the agricultural impact of a development involves the permanent or long term non-agricultural use of potential agricultural land, as it does in this case, the focus and defining question of the agricultural impact assessment is:

> Does the loss of future agricultural production potential that will result from this development, justify keeping the land solely for potential agricultural production and therefore not approving the development?

If the loss is small, then it is unlikely to justify non approval. If the loss is big, then it is likely to justify it.

The extent of the loss is a direct function of two things, firstly the amount of land that will be lost and secondly, the production potential of the land that will be lost. In the case of wind farms, the first factor, amount of land loss, is so small that the total extent of the loss of future agricultural production potential is insignificantly small, regardless of how much production potential the land has. This is because the required spacing between turbines means that the amount of land actually excluded from agricultural use is extremely small in relation to the surface area over which a wind farm is distributed. Most wind energy facilities, for which I have recently done assessments, occupy less than 1% of the surface area. All agricultural activities are able to continue unaffectedly on all parts of the farmland other than this small agricultural footprint and the actual loss of production potential is therefore insignificant.

Another aspect to consider is the scale at which the significance of the agricultural impact is assessed. The change in production potential of a farm or significant part of a farm is likely to be highly significant at the scale of that farm, but may be much less so at larger scales. This assessment considers a regional and national scale to be the most appropriate one for assessing the significance of the loss of agricultural production potential because, as has been discussed above, the purpose is to ensure the conservation of agricultural land required for national food security.

8.3 Impact identification and discussion

There is ultimately only ever a single agricultural impact of a development and that is a change to the future agricultural production potential of the land. This impact occurs by way of different mechanisms some of which lead to a decrease in production potential and some of which lead to an increase. It is the net sum of positive and negative effects that determines the overall agricultural impact.

Two direct mechanisms have been identified that lead to decreased agricultural potential by:

1. **occupation of land** - Agricultural land directly occupied by the development infrastructure will become restricted for agricultural use, with consequent potential loss of agricultural productivity for the duration of the project lifetime.
2. **soil erosion and degradation –** Erosion can occur as a result of the alteration of the land surface run-off characteristics, predominantly through the establishment of hard surface areas including roads. Soil erosion is completely preventable. The storm water management that will be an inherent part of the engineering on site and standard, best practice erosion control measures recommended and included in the EMPr, are likely to be effective in preventing soil erosion. Loss of topsoil can result from poor topsoil management during construction related excavations.

Two indirect mechanisms have been identified that lead to increased agricultural potential through:

1. **increased financial security for farming operations -** Reliable and predictable income will be generated by the farming enterprises through the lease of the land to the energy facility. This is likely to increase their cash flow and financial security and could improve farming operations and productivity through increased investment into farming.

2. **improved security against stock theft and other crime** due to the presence of security infrastructure and security personnel at the energy facility.

Considering what is detailed in Section 9.2 above, the extent to which any of these mechanisms is likely to actually affect levels of agricultural production is small and the overall impact of a change in agricultural production potential is therefore small.

Note that the overhead power lines have insignificant agricultural impact in this environment, regardless of their route and design and the agricultural potential of the land they traverse. This is because the direct, permanent, physical footprint of the power line, that has any potential to interfere with agriculture is insignificantly small. A power line does not exclude agriculture from the land, and all agricultural activities can continue completely unhindered underneath a power line. There is therefore no reduction in future agricultural production potential underneath a power line.

9 IMPLICATIONS OF THE SITE SENSITIVITY FOR FACILITY DESIGN AND LAYOUT

A site like this, of low agricultural potential, imposes few constraints on renewable energy development.

On the wind site there are relatively small cultivated areas, shown in Figure 3. It is advisable that all infrastructure (including roads, but excluding overhead power lines) of a renewable energy facility, avoids these areas. However, they are not strictly no-go and if there is a justifiable reason to use some of this land, this is allowed in terms of the allowable development limits. All other land across the site can be used for renewable energy development without restriction.

Note: the allowable development limits for a facility on this land are 2.5 hectares per Megawatt. Wind facilities, that have a much lower footprint, typically use only about one eighth of the allowable development limit on such land. The servitude corridor of a power line is excluded as part of the facility footprint in terms of the allowable development limits.

10 CONCLUSION

This site sensitivity verification verifies those parts of the site that are indicated as cropland in Figure 3 as being of high agricultural sensitivity. The rest of the site is verified as being of medium and low agricultural sensitivity. Low and medium agricultural sensitivity is appropriate in terms of the site's climate, terrain and soils, which limit agricultural potential.

11 REFERENCES

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

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Schulze, R.E. 2009. SA Atlas of Climatology and Agrohydrology, available on Cape Farm Mapper. Available at: https://gis.elsenburg.com/apps/cfm/

Soil Classification Working Group. 1991. Soil classification: a taxonomic system for South Africa. Soil and Irrigation Research Institute, Department of Agricultural Development, Pretoria.

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 (Pr.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.
- 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

APPENDIX 2: DETAILS OF THE SPECIALIST, DECLARATION OF INTEREST AND UNDERTAKING UNDER OATH

	(For official use only)
File Reference Number:	
NEAS Reference Number:	DEA/EIA/
Date Received:	

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

PROPOSED EZELSJACHT 140 MW WIND ENERGY FACILITY (WEF), AND ASSOCIATED GRID INFRASTRUCTURE LOCATED NEAR DE DOORNS, WESTERN CAPE PROVINCE

Kindly note the following:

- This form must always be used for 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 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:	Johann Lanz – Soil Scientist			
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)	4	Percentage Procurement recognition	100%
Specialist name:	Johann Lanz			
Specialist Qualifications:	M.Sc. (Environmental Geochemistry)			
Professional affiliation/registration:	Registered Professional Natural Scientist (Pr.Sci.Nat.) Reg. no. 40026E 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			
Postal code:	7800	Cell:	082 927 9018	
Telephone:	082 927 9018	Fax:	Who still uses a fax?	
E-mail:	johann@johannlanz.co.za			

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

3. UNDERTAKING UNDER OATH/ A

I, **Johann Lanz**, swear under oath information submitted or to be purposes of this application is true an

[signature]

Signature of the Specialist

Johann Lanz – Soil Scientist (sole prop

Name of Company

5 September 2

Date

[signature] SERGEANT WOPULA. A 71520660

Signature of the Commissioner of Oat

2022-09-05.

Date

SUID-AFRIKAANSE POLISIE
STATION WYNBERG
CSC
05 SEP 2022
CSC
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SOUTH AFRICAN POLICE SE

APPENDIX 3: SOIL DATA

Table 1: Table of land type soil data

Land type	Soil series (forms)	Depth (mm)	Clay % A horizon	Clay % B horizon	Depth limiting layer	% of land type
Fc720	Glenrosa	300 - 500	8 - 40	15 - 45	R	30.8
Fc720	Hutton	300 - 700	10 - 25	25 - 35	R	21.1
Fc720	Swartland	350 - 600	5 - 35	30 - 50	vp,vr	17.2
Fc720	Glenrosa	200 - 400	8 - 40	15 - 45	R	10.0
Fc720	Mispah	50 - 100	5 - 35		R,ka	7.3
Fc720	Rock outcrop					6.0
Fc720	Oakleaf	300 - 600	10 - 25	10 - 35	R	2.8
Fc720	T					2.5
Fc720	Hutton	200 - 600	10 - 25	25 - 35	R	1.0
Fc720	Swartland	250 - 500	5 - 35	30 - 50	vp,vr	1.0
Fc720	Dundee	> 1000	5 - 15		R	0.5
Ib74	Rock outcrop					61.5
Ib74	Mispah	50 - 150	3 - 10		R	16.6
Ib74	Glenrosa	100 - 250	6 - 15	15 - 25	so,R	7.2
Ib74	Mispah	50 - 150	3 - 10		R,ka,ca	4.8
Ib74	Hutton	150 - 300	5 - 10	6 - 15	R	3.1
Ib74	Swartland	150 - 300	20 - 30	25 - 55	vr	2.5
Ib74	Oakleaf	700 - 1000	5 - 10	6 - 15	R,so,sr	2.2
Ib74	Dundee/Oakleaf	700 - 1000	5 - 15	10 - 20	R,so,sr	1.3
Ib74	Swartland	150 - 250	25 - 35	40 - 60	vp	0.9
Fc719	Glenrosa	200 - 400	10 - 40	15 - 40	R	25.0
Fc719	Hutton	250 - 700	15 - 30	15 - 35	R	18.8
Fc719	Glenrosa	300 - 600	10 - 40	15 - 40	R	16.7
Fc719	Swartland	400 - 700	10 - 40	25 - 55	R,vp,vr	16.2

Land type	Soil series (forms)	Depth (mm)	Clay % A horizon	Clay % B horizon	Depth limiting layer	% of land type
Fc719	Mispah	50 - 100	10 - 35		R,hp	7.8
Fc719	Rock outcrop					7.0
Fc719	Oakleaf	300 - 600	10 - 30	10 - 35	R,so	6.1
Fc719	Swartland	200 - 600	10 - 40	25 - 55	R,vp,vr	1.0
Fc719	Hutton	200 - 600	15 - 30	15 - 35	R	1.0
Fc719	Dundee	> 1200	6 - 10			0.6
Ib426	Rock outcrop					69.0
Ib426	Mispah	50 - 100	0 - 6		R	14.8
Ib426	Cartref	50 - 100	0 - 6	0 - 6	R	8.3
Ib426	Glenrosa	100 - 300	0 - 6	0 - 6	R	4.5
Ib426	Fernwood	100 - 300	0 - 6		R,so	2.5
Ib426	Dundee	400 - 1000	0 - 10		R	1.0