Johann Lanz
Soil Scientist (Pri.Sci.Nat.)
Reg. no. 400268/12

Cell: 082 927 9018
Tel: 021 866 1518
e-mail: johann@johannlanz.co.za

PO Box 6209
Uniedal
7612
Stellenbosch
South Africa

AGRICULTURAL IMPACT STUDY FOR PROPOSED INYANDA - ROODEPLAAT WIND ENERGY FACILITY NEAR UITENHAGE EASTERN CAPE PROVINCE

EIA PHASE REPORT

Report by
Johann Lanz

February 2016

Table of Contents

Executive Summary

The proposed development is on land zoned for agriculture. South Africa has very limited arable land and it is therefore critical to ensure that development does not lead to an inappropriate loss of land that may be valuable for agricultural production. This assessment has found that the proposed site is on land of extremely limited agricultural potential that is, at best, only suitable for low intensity grazing.

The key findings of this study are:

- The development of the energy facility will have low negative impacts on agricultural resources and productivity.
- There are two important factors that cause the significance of all agricultural impacts of the proposed development to be low. The first is that the actual footprint of disturbance of the wind farm (including all infrastructure) is very small in relation to the available land (<1% of the surface area of the farms), and all agricultural activities could be able to continue unaffected on all parts of the farm other than the actual development footprint. The second is the fact that the proposed site is on land of extremely limited agricultural potential that is, at best, only suitable for low intensity grazing.
- Within the proposed development footprint there are no areas of agricultural sensitivity and so no parts of it need to be excluded from development.
- In terms of soils, the mountain area is dominated by rock outcrop with some very shallow, sandy soils on underlying rock (Cartref, Glenrosa and Mispah soil forms). On the southern side of the mountain there are also some shallow soils on underlying clay (Kroonstad and Estcourt soil forms). The lower parts of the farm on the Bokkeveld geology has less rock outcrop but is also dominated by shallow soils on underlying rock, that are more clay rich than the mountain soils (Glenrosa, Hutton, Oakleaf and Mispah soil forms).
- The entire Roodeplaat Farm has a land capability classification, on the 8 category scale, of Class 8 (the mountainous land) and 7 (the lower lying parts of the farm). Class 7 is defned as non-arable, low potential grazing land and 8 is defined as non-utilisable wilderness land.
- The limitations to agriculture are terrain, climate and soil related, all of which make the farm totally unsuited to any form of cultivation.
- The grazing capacity of the farm is low, and varies from 14-30 hectares per large stock unit.
- Three potential negative impacts of the development on agricultural resources and productivity were identified as:
    - Loss of agricultural land use caused by direct occupation of land by the energy facility footprint.
    - Soil Erosion caused by alteration of the surface characteristics.
    - Loss of topsoil in disturbed areas, causing a decline in soil fertility.
- Loss of agricultural land was assessed as having low significance and the other two

impacts were assessed as having very low significance.

- General mitigation measures are proposed for loss of topsoil and erosion.
- Because of the extremely low agricultural potential of the site, and the consequent low impact on agriculture, the development should, from an agricultural impact perspective, be authorised.
- There are no conditions resulting from this assessment that need to be included in the environmental authorisation.

2 INTRODUCTION

Inyanda Energy Projects (Pty) Ltd proposes to construct a Wind Energy Facility (WEF) of up to 140 MW installed capacity on a number of properties, referred to collectively in this report as the farm Roodeplaat, situated in the Groot Winterhoek Mountains west of the town of Uitenhage in the Eastern Cape (see Figure 1).

The facility will have 55 turbines with concrete foundations, hard standing areas at each turbine, internal access roads, cabling, an on-site substation, control buildings, a temporary lay down, a borrow pit, and a 132kV power line connection to the Eskom transmission network. The farm Roodeplaat is 12,270 hectares in extent, but the actual footprint of the energy facility will be less than 1% of the total farm area.

The objectives of the study are to identify and assess all potential impacts of the proposed development on agricultural resources, including soils, and agricultural production potential, and to provide recommended mitigation measures, monitoring requirements, and rehabilitation guidelines for all identified impacts. Johann Lanz was appointed by SRK Consulting as an independent specialist to conduct this Agricultural Impact Study.

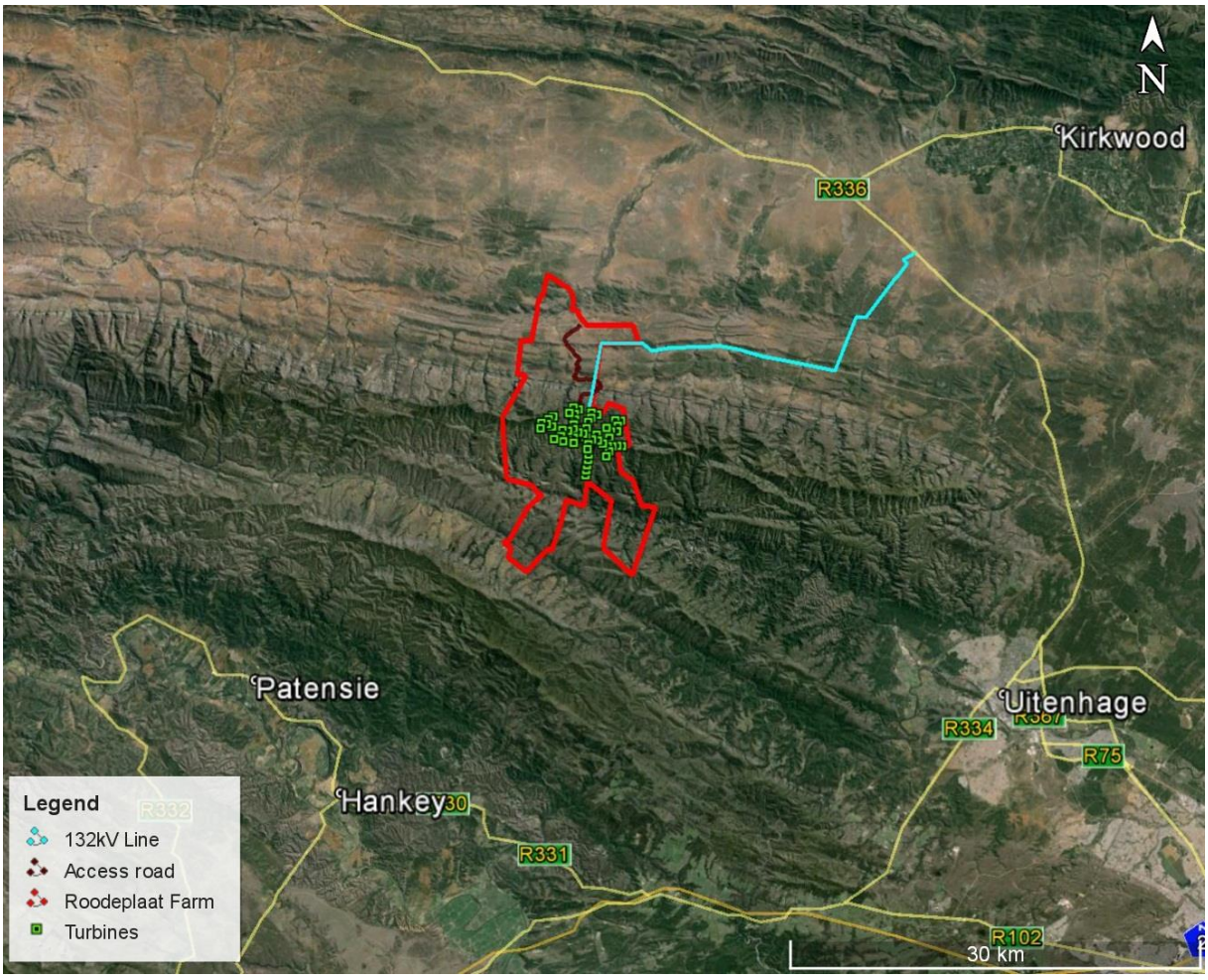

Figure 1. *Location map of the proposed development, north west of the town of Uitenhage.*

3 TERMS OF REFERENCE

The terms of reference for the study fulfills the requirements for a soils and agricultural study as described in the National Department of Agriculture's document, *Regulations for the evaluation and review of applications pertaining to renewable energy on agricultural land*, dated September 2011.

The study applies an appropriate level of detail for the agricultural suitability on site. A detailed soil survey, as per the requirement in the above document, is appropriate for arable land only. It is not appropriate for this site, where terrain in particular but also soil and climate constraints make cultivation completely non-viable. Conducting a soil survey at the required level of detail would be very time consuming but would also be a complete waste of that time as it would add no value to the impact assessment. The level of soil assessment that was conducted for this report (reconnaissance ground proofing of land type data) is considered more than adequate for a thorough assessment of all agricultural impacts.

The above requirements together with requirements for an EIA specialist report may be summarised as:

- Identify and assess all potential impacts (direct, indirect and cumulative) of the proposed development on soils and agricultural potential.
- Describe and map soil types (soil forms) and characteristics (soil depth, soil colour, limiting factors, and clay content of the top and sub soil layers).
- Describe the topography of the site.
- Describe the climate in terms of agricultural suitability.
- Summarise available water sources for agriculture.
- Describe historical and current land use, agricultural infrastructure, as well as possible alternative land use options.
- Describe the erosion, vegetation and degradation status of the land.
- Determine the agricultural potential across the site.
- Determine the agricultural sensitivity to development across the site.
- Provide recommended mitigation measures, monitoring requirements, and rehabilitation guidelines for all identified impacts.

4 METHODOLOGY OF STUDY

4.1 Methodology for assessing soils and agricultural potential

The pre-fieldwork assessment was based on existing soil and agricultural potential data for the site. The source of this data was the online Agricultural Geo-Referenced Information System (AGIS), produced by the Institute of Soil, Climate and Water (Agricultural Research Council, undated). Satellite imagery of the site available on Google Earth was also used for evaluation.

The AGIS data was supplemented by a field investigation. This was aimed at ground-proofing

the AGIS data and achieving an understanding of specific soil and agricultural conditions, and the variation of these across the site. The field investigation involved a drive and walk over of the site using assessment of surface conditions and existing cuttings. The field assessment was done on 25 January 2016. An assessment of soils (soil mapping) and long term agricultural potential is in no way affected by the season in which the assessment is made, and therefore the fact that the assessment was done in summer has no bearing on its results.

4.2 **Methodology for assessing impacts and determining impact significance**

The significance of an impact is defined as a combination of the consequence of the impact occurring and the probability that the impact will occur. The criteria used to determine impact consequences are presented in Table 6-1 below.

Table 1. Criteria used to determine the Consequence of the Impact

Rating	Definition of Rating	Score
A. Extent– the area over which the impact will be experienced		
None		0
Local	Confined to project or study area or part thereof (e.g. site)	1
Regional	The region, which may be defined in various ways, e.g. cadastral, catchment, topographic	2
(Inter) national	Nationally or beyond	3
B. Intensity– the magnitude of the impact in relation to the sensitivity of the receiving environment		
None		0
Low	Site-specific and wider natural and/or social functions and processes are negligibly altered	1
Medium	Site-specific and wider natural and/or social functions and processes continue albeit in a modified way	2
High	Site-specific and wider natural and/or social functions or processes are severely altered	3
C. Duration– the time frame for which the impact will be experienced		
None		0
Short-term	Up to 2 years	1
Medium-term	2 to 15 years	2
Long-term	More than 15 years	3

The combined score of these three criteria corresponds to a **Consequence Rating**, as follows:

Table 2. Method used to determine the Consequence Score

Combined Score (A+B+C)	0 – 2	3 – 4	5	6	7	8 – 9
Consequence Rating	Not significant	Very low	Low	Medium	High	Very high

Once the consequence has been derived, the probability of the impact occurring will be considered using the probability classifications presented in Table 6-3.

Table -3. Probability Classification

Probability– the likelihood of the impact occurring	
Improbable	< 40% chance of occurring
Possible	40% - 70% chance of occurring
Probable	> 70% - 90% chance of occurring
Definite	> 90% chance of occurring

The overall **significance** of impacts will be determined by considering consequence and probability using the rating system prescribed in the table below.

Table -4. Impact Significance Ratings

Significance Rating	Possible Impact Combinations		
	Consequence		Probability
Insignificant	Very Low	&	Improbable
	Very Low	&	Possible
Very Low	Very Low	&	Probable
	Very Low	&	Definite
	Low	&	Improbable
	Low	&	Possible
Low	Low	&	Probable
	Low	&	Definite
	Medium	&	Improbable
	Medium	&	Possible
Medium	Medium	&	Probable
	Medium	&	Definite
	High	&	Improbable
	High	&	Possible
High	High	&	Probable
	High	&	Definite
	Very High	&	Improbable
	Very High	&	Possible

Significance Rating	Possible Impact Combinations		
	Consequence		Probability
Very High	Very High	&	Probable
	Very High	&	Definite

Finally, the impacts will also be considered in terms of their status (positive or negative impact) and the confidence in the ascribed impact significance rating. The system for considering impact status and confidence (in assessment) is laid out in the table below.

Table -5. Impact status and confidence classification

Status of impact	
Indication whether the impact is adverse (negative) or beneficial (positive).	+ ve (positive – a 'benefit')
	– ve (negative – a 'cost')
Confidence of assessment	
The degree of confidence in predictions based on available information, SRK's judgment and/or specialist knowledge.	Low
	Medium
	High

The impact significance rating should be considered by authorities in their decision-making process based on the implications of ratings ascribed below:

- **Insignificant:** the potential impact is negligible and will not have an influence on the decision regarding the proposed activity/development.
- **Very Low:** the potential impact is very small and should not have any meaningful influence on the decision regarding the proposed activity/development.
- **Low:** the potential impact may not have any meaningful influence on the decision regarding the proposed activity/development.
- **Medium:** the potential impact should influence the decision regarding the proposed activity/development.
- **High:** the potential impact will affect the decision regarding the proposed activity/development.
- **Very High:** The proposed activity should only be approved under special circumstances.

Practicable mitigation measures will be recommended and impacts will be rated in the prescribed way both with and without the assumed effective implementation of mitigation measures. Mitigation measures will be classified as either:

- **Essential**: must be implemented and are non-negotiable; or
- **Optional:** must be shown to have been considered and sound reasons provided by the proponent, if not implemented.

5 CONSTRAINTS AND LIMITATIONS OF STUDY

Data on the spatial distribution of soil types is dependent on the resolution of sampling points. Investigations for different purposes will use different resolutions. These will record the degree of soil variation that occurs naturally, at different levels of accuracy. The intensity of sample points used in this assessment is considered more than adequate for the purposes of this study. A more detailed soil investigation is not considered likely to have added anything significant to the assessment of agricultural soil suitability for the purposes of determining the impact of the facility on agricultural resources and productivity.

The assessment rating of impacts is not an absolute measure. It is based on the subjective considerations and experience of the specialist, but is done with due regard and as accurately as possible within these constraints.

There are no other specific constraints, uncertainties and gaps in knowledge for this study.

6 APPLICABLE LEGISLATION AND PERMIT REQUIREMENTS

A change of land use (re-zoning) for the development on agricultural land needs to be approved in terms of the Subdivision of Agricultural Land Act (Act 70 of 1970) (SALA). This is required for long term lease, even if no subdivision is required. Rehabilitation after disturbance to agricultural land is managed by the Conservation of Agricultural Resources Act (Act 43 of 1983) (CARA). No application is required in terms of CARA. The EIA process covers the required aspects of this. The Department of Agriculture, Forestry and Fisheries reviews and approves applications in terms of these Acts according to their Guidelines for the evaluation and review of applications pertaining to renewable energy on agricultural land, dated September 2011.

7 DESCRIPTION OF THE SOILS AND AGRICULTURAL CAPABILITY OF THE AFFECTED ENVIRONMENT

All the information on soils and agricultural potential in this report has been obtained from the online Agricultural Geo-Referenced Information System (AGIS), produced by the Institute of Soil, Climate and Water (Agricultural Research Council, undated).

7.1 Climate and water availability

Rainfall for the site is given as 387 mm per annum (The World Bank Climate Change Knowledge Portal, undated). The average monthly distribution of rainfall is shown in Figure 3. One of the most important climate parameter for agriculture in a South African context is moisture availability, which is the ratio of rainfall to evapotranspiration. Moisture availability is classified into 6 categories across the country (see Table 1). The part of the site at the base of the mountain falls into the highest class, 6, which is labelled as a very severe limitation to

agriculture. Both rainfall and moisture availability are higher up on the mountain. The mountain top is classified as moisture availability category 3, which is labelled as a moderate limitation to agriculture.

There are kloofs running down the mountain that drain water and these are the source of water to the farms in the area. Water quantity is limited and there is insufficient for any significant amount of irrigation.

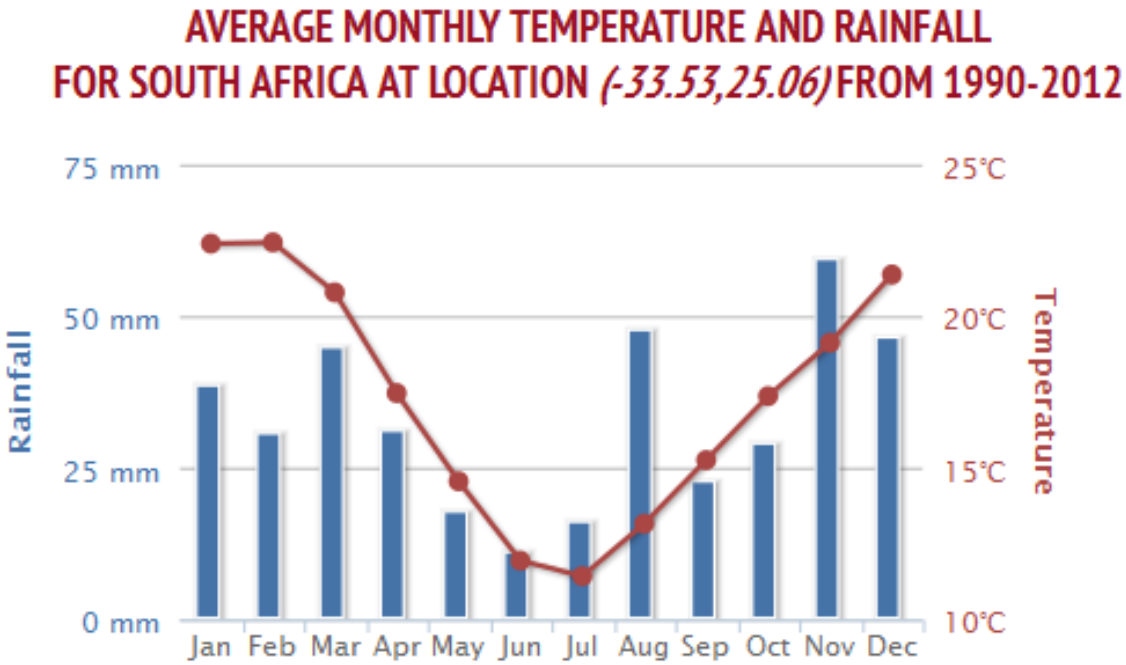

Figure 2. *Average monthly temperature and rainfall for the site (The World Bank Climate Change Knowledge Portal, undated).*

Table 1. The classification of moisture availability climate classes for summer rainfall areas across South Africa (Agricultural Research Council, Undated)

Climate class	Moisture availability (Rainfall/0.25 PET)	Description of agricultural limitation
C1	>34	None to slight
C2	27-34	Slight
C3	19-26	Moderate
C4	12-18	Moderate to severe
C5	6-12	Severe
C6	<6	Very severe

7.2 **Terrain, topography and drainage**

The proposed turbine development is located in high, rugged, mountainous terrain at an

altitude of between 720 and 1,050 metres. The bottom of the access road off the public road is at an altitude of 340 metres. This lower part of the farm, where the lay down area is proposed is also rugged terrain of high hills and ridges intersected by fairly narrow kloofs. Slopes are very variable in the rugged terrain, up to maximum slopes of vertical cliffs.

A satellite image map of the site is shown in Figure 3. Photographs of site conditions are shown in Figures 4 to 6.

The geology of the mountain area is quartzitic sandstone of the Table Mountain Group with influence of conglomerate, subordinate sandstone and mudstone of the Enon Formation, Uitenhage Group with silcrete. The geology of the lower part of the farm is shale, siltstone and sandstone of the Bokkeveld Group.

There are several non perennial drainage courses in kloofs running northwards from the mountains to the Kariega River, which lies to the north of the public road at the bottom of the farm.

7.3 **Soils**

The land type classification is a nationwide survey that groups areas of similar soil, terrain and climate conditions into different land types. There are four land types across the farm, two very similar (Fc360 and Fc359) on the Bokkeveld geology in the lower parts of the farm and another two very similar (Ib94 and Ib98) in the Table Mountain geology, one each side of the east-west running watershed along the mountain top.

The mountain area is dominated by rock outcrop with some very shallow, sandy soils on underlying rock (Cartref, Glenrosa and Mispah soil forms). On the southern side of the mountain there are also some shallow soils on underlying clay (Kroonstad and Estcourt soil forms). The lower parts of the farm on the Bokkeveld geology has less rock outcrop but is also dominated by shallow soils on underlying rock, that are more clay rich than the mountain soils (Glenrosa, Hutton, Oakleaf and Mispah soil forms). The soils of these land types fall predominantly into the Lithic soil group according to the classification of Fey (2010).

A summary detailing soil data for the land type is provided in Table A1. The field investigation confirmed the dominance of very shallow soils on underlying rock (see Figure 5).

The land is classified as having high susceptibility to water erosion because of the very steep slopes. The sandstone mountain soils have a lower inherent erodibility than the Bokkeveld soils.

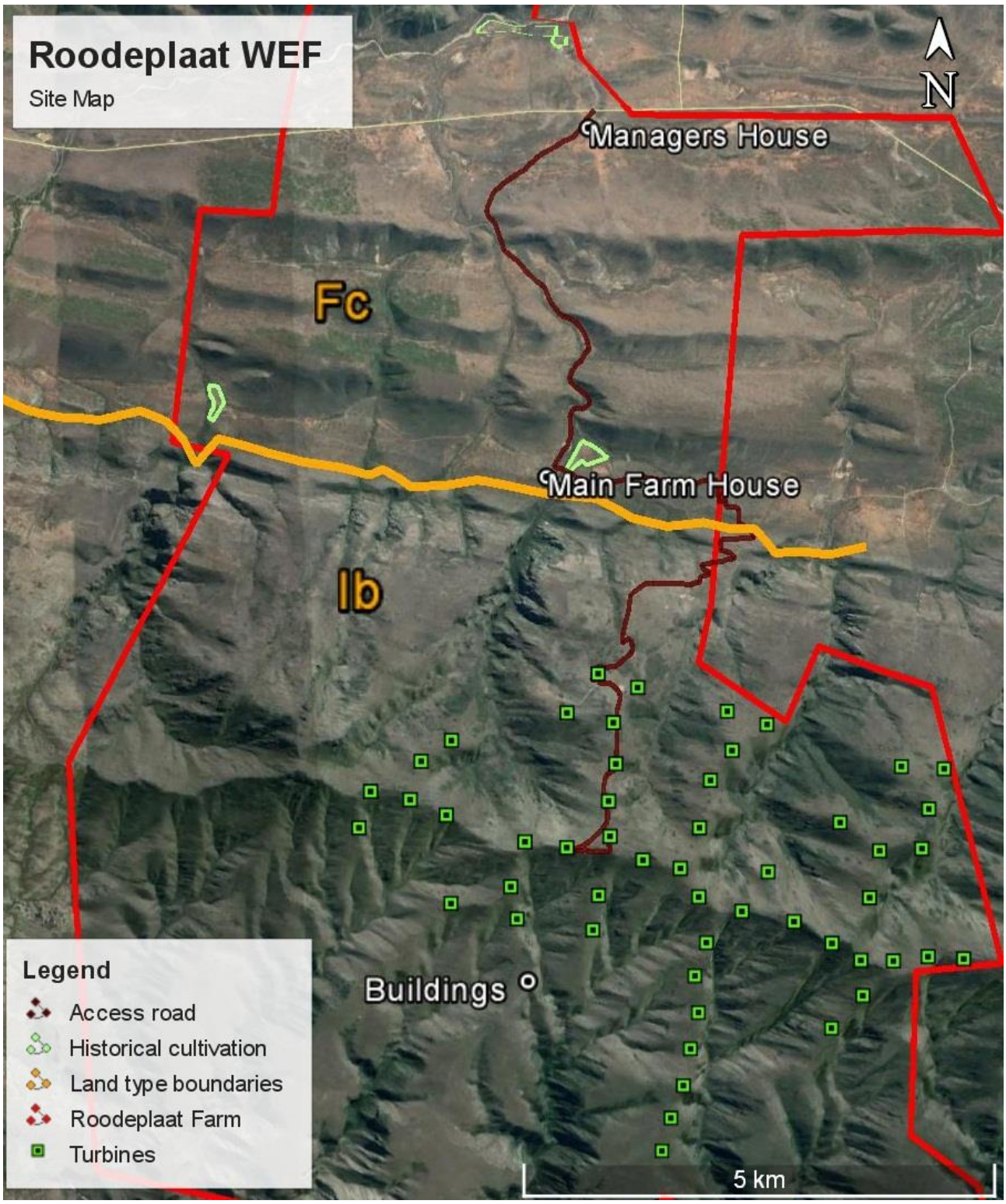

Figure 2. *Satellite image* site map of the proposed development.

Figure 4. *View from the top of the mountain showing the site conditions where turbines will be located, the existing access road, and in the background, the lower parts of the farm.*

Figure 5. *Photo of typical, shallow Mispah soil on underlying, hard sandstone rock.*

Figure 6. *Photo of typical site conditions in the lower part of the farm.*

7.4 **Agricultural capability**

Land capability is the combination of soil suitability and climate factors. The entire Roodeplaat Farm has a land capability classification, on the 8 category scale, of Class 8 (the mountainous land) and 7 (the lower lying parts of the farm). Class 7 is classified as non-arable, low potential grazing land and 8 is classified as non-utilisable wilderness land.

The limitations to agriculture are terrain, climate and soil related, all of which make the farm totally unsuited to any form of cultivation. Furthermore the fynbos vegetation type over most of the farm has a very low grazing capacity. The grazing capacity for the lower lying parts of the farm are given on AGIS as 14-17 hectares per large stock unit. For the mountainous parts it is given as 18-30 hectares per large stock unit.

7.5 **Land use and development on and surrounding the site**

The farm is currently used only for grazing, mostly game. There have been small patches of historical cultivation on the farm (see Figure 3). These are confined to small patches of level ground in proximity to water courses. There are three separate areas totalling 18.3 hectares. Given their isolated geographical distribution and the climate and terrain constraints, they are not commercially viable.

The surrounding area is similar land use to Roodeplaat and almost entirely grazing land with some small, isolated patches of cultivation.

There are three areas of housing on the farm and some other farm buildings. There is no other

working agricultural infrastructure on the farm.

Road access to the site is via the east-west running public gravel road at the bottom of the farm. Access to the turbine area is via an existing farm road that runs up the mountain.

7.6 **Status of the land**

The vegetation on most of the farm is fynbos and on the lower lying area is thicket. The biome classifications, in order of decreasing altitude, are Kouga Sandstone Fynbos; Kouga Grassy Sandstone Fynbos; Groot Thicket; and Sundays Thicket. There is no evidence of significant erosion or other land degradation on the site.

7.7 **Possible land use options for the site**

Because of the terrain, climate and soil limitations and lack of access to water for irrigation, the farm is totally unsuited to cultivated crops. Agricultural land use is limited to low intensity grazing only.

7.8 **Agricultural sensitivity**

The areas of historical cultivation have a higher agricultural potential than the rest of the farm but because of the economic non-viability of cultivation, the difference is largely academic. Furthermore, none of them are affected in any way by the proposed footprint of the development.

Within the proposed development footprint there are no areas of agricultural sensitivity and so no parts of it need to be excluded from development.

There are no required buffers.

8 **IDENTIFICATION AND ASSESSMENT OF IMPACTS ON AGRICULTURE**

The components of the project that can impact on soils, agricultural resources and productivity are:

- Occupation of the site by the footprint of the facility
- Constructional activities that disturb the soil profile and vegetation, for example for levelling, excavations, etc.

The proposed development is on land zoned but not currently used for agriculture. South Africa has very limited arable land and it is therefore critical to ensure that development does not lead to an inappropriate loss of land that may be valuable and important for agricultural production.

There are two important factors that cause the significance of all agricultural impacts of the

proposed development to be low. The first is that the actual footprint of disturbance of the wind farm (including all infrastructure) is very small in relation to the available land (<1% of the surface area of the farms), and all agricultural activities could be able to continue unaffected on all parts of the farm other than the actual development footprint. The second is the fact that the proposed site is on land of extremely limited agricultural potential, that is at best only suitable for low intensity grazing.

The footprint of the facility includes the power line connections that occur beyond the farm portions (see Figure 1). The power line has a very tiny footprint, however, as it is only the pylon bases that have agricultural impact under the site conditions. All viable agricultural activities can continue undisturbed under the power lines.

Because of the low significance of agricultural impacts, the cumulative impact that may result from the combined effect of numerous other projects on agricultural land in the area, is also of low significance.

The following four potential impacts of the development on agricultural resources and productivity are identified, and assessed in the table formats below. Mitigation and monitoring recommendations are included in the table for each impact. All four impacts are associated with all the phases of the development - construction, operation, and decommissioning.

1. Nature: Loss of agricultural land use Caused by: direct occupation of land by total footprint of energy facility infrastructure; And having the effect of: taking affected portions of land out of agricultural production.		
Geographical extent	Local (1)	
Intensity / Magnitude	Low (1)	
Duration	Long term (3)	
Consequence rating	Low (5)	
Probability	Definite	
Significance	Low	
Status	Negative	
Confidence	High	
Mitigation: No mitigation possible		
Monitoring: None		

2. Nature: Erosion due to alteration of the land surface run-off characteristics. Alteration of run-off characteristics may be caused by construction related land surface disturbance, vegetation removal, and the establishment of hard standing areas and roads. Erosion will cause loss and deterioration of soil resources

	Without mitigation	**With mitigation**
Geographical extent	Local (1)	Local (1)
Intensity / Magnitude	Low (1)	Low (1)
Duration	Long term (3)	Long term (3)
Consequence rating	Low (5)	Low (5)
Probability	Possible	Improbable
Significance	Very Low	Very Low
Status	Negative	Negative
Confidence	High	High
Mitigation: (Essential, where it applies) Implement an effective system of run-off control, where it is required (for example on roads and hard standing areas), that collects and safely disseminates run-off water from all hardened surfaces and prevents potential down slope erosion.		
Monitoring: Include periodical site inspection in environmental performance reporting that inspects the effectiveness of the run-off control system and specifically records occurrence or not of any erosion on site or downstream.		

3. Nature: Loss of topsoil Caused by: poor topsoil management (burial, erosion, etc) during construction related soil profile disturbance (levelling, excavations, disposal of spoils from excavations etc.) And having the effect of: reduction in the soil's ability to support vegetation on disturbed areas after rehabilitation.		
	Without mitigation	**With mitigation**
Geographical extent	Local (1)	Local (1)
Intensity / Magnitude	Low (1)	Low (1)
Duration	Long term (3)	Long term (3)
Consequence rating	Low (5)	Low (5)
Probability	Possible	Improbable
Significance	Very Low	Very Low
Status	Negative	Negative
Confidence	High	High
Mitigation: (Essential, where it applies) If an activity will mechanically disturb below surface in any way, then any available topsoil should first be stripped from the entire surface to be disturbed and stockpiled for re-spreading during rehabilitation. Topsoil stockpiles must be conserved against losses through erosion by establishing vegetation		

cover on them. Dispose of all subsurface spoils from excavations where they will not impact on undisturbed land. During rehabilitation, the stockpiled topsoil must be evenly spread over the entire disturbed surface. Erosion must be controlled where necessary on topsoiled areas.
Monitoring: Establish an effective record keeping system for each area where soil is disturbed below surface for constructional purposes. These records should be included in environmental performance reports, and should include all the records below. Record the GPS coordinates of each area. Record the date of topsoil stripping. Record the GPS coordinates of where the topsoil is stockpiled. Record the date of cessation of constructional (or operational) activities at the particular site. Photograph the area on cessation of constructional activities. Record date and depth of re-spreading of topsoil. Photograph the area on completion of rehabilitation and on an annual basis thereafter to show vegetation establishment and evaluate progress of restoration over time.

8.1 **Comparative assessment of alternatives**

The 'do nothing' alternative has zero impact on agriculture, compared to the low impact for the development.

9 **CONCLUSION AND RECOMMENDATIONS**

Because of the extremely low agricultural potential of the site, and the consequent low impact on agriculture, the development should, from an agricultural impact perspective, be authorised.

Within the proposed development footprint there are no areas of agricultural sensitivity and so no parts of it need to be set aside from development.

There are no conditions resulting from this assessment that need to be included in the environmental authorisation.

10 **REFERENCES**

Agricultural Research Council. Undated. AGIS Agricultural Geo-Referenced Information System available at http://www.agis.agric.za/.

Fey, M. 2010. Soils of South Africa. Cambridge University Press, Cape Town.

The World Bank Climate Change Knowledge Portal available at http://sdwebx.worldbank.org/climateportal/

APPENDIX 1: SOIL DATA

Table A1. Land type soil data for site.

Land type	Land capability class	Soil series (forms)	Depth (cm)	Clay % A horizon	Clay % B horizon	Depth limiting layer	% of land type
Ib94	8	Rock outcrop	0			R	69
		Cartref	0-30	3-6		R, so	17
		Glenrosa	0-20	4-10		so	5
		Mispah	0-10	6-10		R	5
		Swartland	30-45	10-15	20-40	vp	2
Ib98	8	Rock outcrop	0			R	67
		Cartref	20-30	3-10	3-6	so	15
		Kroonstad	30-60	5-10	3-10	gc	6
		Estcourt	30-45	5-10	5-10	pr	4
		Glenrosa	0-20	3-10		R, so	3
		Mispah	0-20	3-10		R	2
Fc359	7	Glenrosa	20-40	20-45		so	60
		Rock outcrop	0			R	25
		Hutton	20-50	15-30	30-55	R, ca	7
		Oakleaf	80->120	15-30	35-55		6
		Mispah	10-20	15-20		R	1
Fc360	7	Glenrosa	25-60	25-50		so	38
		Hutton	30-50	30-40	45-55	so, db	23
		Oakleaf	>120	20-35	30-60		21
		Rock outcrop	0			R	17
		Hutton	30-50	30-40	45-55	so, db	2
		Mispah	20-45	0-20		R, ca	1

Land capability classes: 7 = non-arable, low potential grazing land;
8 = non-utilisable wilderness land.

Depth limiting layers: R = hard rock; so = partially weathered bedrock; ca = hardpan carbonate; db = dorbank hardpan; pr = dense, prismatic clay layer; vp = dense, structured clay layer; gc = dense clay horizon that is frequently saturated.