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

Review of Agriculture Specialist Report for EIA for Proposed Hartebeest Wind Farm near Moorreesburg

1. Introduction

Johann Lanz was contracted to review the above report by CR Lubbe, dated November 2016. The review is conducted in terms of two different sets of criteria, firstly questions stipulated by DEA that must be answered in a review, and secondly the DEA requirements for agricultural studies.

Following an initial review in December 2016, the report was updated to take account of review comments. Section 4 of this review addresses the changes that were made in that report update (January 2017). Section 2 and 3 below, remain as they were in the original review.

2. DEA review questions

DEA stipulates that a number of questions are answered by the reviewer in such a review. Each of these questions is listed below, with the reviewer's answer and comments directly below it.

1. Does the report meet the requirements of Appendix 6 of the EIA Regs?

The table below indicates in which section of the report each requirement is met.

Section	*NEMA 2014 Regs - Appendix 6(1) Requirement*	Position in report
1	A specialist report prepared in terms of these Regulations must contain—	
(a)	details of-	
	(i) the specialist who prepared the report; and	Section 1
	(ii) the expertise of that specialist to compile a specialist report;	Section 1
(b)	a declaration that the person is independent in a form as may be specified by the competent authority;	Not included in report but presumably supplied as

Section	*NEMA 2014 Regs - Appendix 6(1) Requirement*	Position in report
		separate document
(c)	an indication of the scope of, and the purpose for which, the report was prepared;	Section 2 and 3.1
(d)	the date and season of the site investigation and the relevance of the season to the outcome of the assessment;	Section 1
(e)	a description of the methodology adopted in preparing the report or carrying out the specialised process;	Section 3
(f)	the specific identified sensitivities of the site related to the activity and its associated structures and infrastructure;	Section 4
(g)	an identification of any areas to be avoided, including buffers;	Section 6.7.5 and 8.1.3
(h)	a map superimposing the activity including the associated structures and infrastructure on the environmental sensitive of the site including areas to be avoided, including buffers;	Fig 1
(i)	a description of any assumptions made and any uncertainties or gaps in knowledge;	Section 5
(j)	a description of the findings and potential implications of such findings on the impact of the proposed activity, including identified alternatives on the environment;	Section 8
(k)	any mitigation measures for inclusion in the EMPr;	Section 8 and 10
(l)	any conditions for inclusion in the environmental authorization;	Not applicable
(m)	any monitoring requirements for inclusion in the EMPr or environmental authorisation;	Section 10
(n)	a reasoned opinion- (i) as to whether the proposed activity or portions thereof should be authorized and (ii) if the opinion is that the proposed activity of portion thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan;	Section 8 and 10
(o)	a description of any consultation process that was undertaken during the course of preparing the specialist report;	None undertaken
(p)	a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	Not applicable
(q)	any other information requested by the competent authority.	None requested

Based on the above it is the reviewer's opinion that the report meets these requirements.

2. Are the ToRs acceptable?

ToR as described in sections 2 and 3.1, is acceptable.

3. Is the methodology clearly explained and acceptable?

Methodology as described in section 3 is acceptable.

4. Are the findings correct (data evidence). Is the reviewer convinced of the results?

Yes, however a report is not like an arithmetic sum, where there is a definitive right or wrong answer, and there is a degree of subjectivity in such an assessment. Different authors will express different elements of an assessment differently and will emphasise certain aspects over others. Therefore I would report the same assessment slightly differently. As reviewer, I am satisfied that the results are acceptable. I agree with the overall finding that the agricultural impact will be of low significance.

5. Were all impacts identified correctly?

I consider the following to be an additional positive impact, that is not identified in the report:

> Generation of alternative / additional land use income through rental for energy facility. This will provide the farming enterprise with increased cash flow and rural livelihood, and thereby improve its financial sustainability.

Otherwise, within the constraint identified in the previous point, all impacts were identified correctly.

6. Were all impacts assessed in an unbiased manner, using the correct assessment methodology?

Yes.

7. Do you agree with the impact ratings?

Yes

8. Have sufficient mitigation measures been proposed?

The issue of mitigating run-off that could cause erosion is insufficiently dealt with. The report emphasises changing the positioning of access roads and turbines in relation to erosionally sensitive landscape features. But it does not emphasise the perfectly viable mitigation measure of implementing an effective run-off control system, which might include repairs (following construction disturbance) alterations and improvements to the integrity of the existing contour bank system. All access roads and hard standing areas must be engineered with appropriate run-off control measures in place.

9. Are the mitigation measures and recommendations appropriate?

Replacement of topsoil is recommended as a mitigation for contaminated topsoil. I do not consider that viable as there is no source of available topsoil.

10. Does the report make reference to appropriate literature?

Yes.

11. Is the article well-written and easy to understand?

Personally I find the structure of the report (what is included in certain sections under the various section and sub-section headings) and some of the language used, as well as the emphasis placed, to be confusing in places. Not all the statements made in the report are completely clear. Some statements seem misplaced. The report comes across as somewhat muddled in places.

12. Identify any short comings.

Sensitivity is addressed in section 4. In my opinion the distinction between an overall agricultural sensitivity and a sensitivity to specific issues such as erosion is not clearly expressed. The mining area for example has a low agricultural sensitivity because it is not agriculturally valuable land, even if it is sensitive to erosion.

The neocutanic B of Oakleaf soil form is identified as a depth limitation. Under most conditions such an horizon would not form a depth limitation.

It is not clear to the reader what all the information contained in Tables 4 to 7 is exactly, for example the columns P1 and P2.

It is preferable to include all soil data collected in the soil survey in the report. Soil data from each sample point should be included in an Appendix so that there is an available record of all relevant, collected data.

Potential erosion problems are more a function of the nature of the disturbance and its tendency to channel run-off water, than on the mappable soil type in an area. Erosion can occur anywhere on the site, irrespective of its rated erodibility. I therefore consider the rating of erosion sensitivity to be slightly misleading, in that it may not emphasise the need to manage potential erosion problems across the entire site.

13. Indicate whether a site-inspection was carried out as part of the peer review.

A site inspection was not carried out and was not deemed necessary in order to effectively review the report. This is because the reviewer is familiar with the environment and has completed his own agricultural assessments in the area.

3. Requirements for agricultural studies

In addition to the questions listed above, DEA has requirements for Agricultural studies that need to be included in an EIA Agricultural Assessment Report. These requirements are taken verbatim from a DAFF document, *Regulations for the evaluation and review of applications pertaining to renewable energy on agricultural land*. Unfortunately however, DEA still uses an earlier draft of this document, which was since updated by DAFF in September 2011.

As in the previous section, each of these requirements is listed below, with any applicable reviewer's comments directly below it. Where no comment is included, the reviewer considers that the reviewed report has met the particular requirement, and no further comment is needed.

1. Detailed soil assessment of the site in question, incorporating a radius of 50 m surrounding the site, on a scale of 1:10 000 or finer.

It is my opinion that the soil survey (resolution of soil sampling points) and description of soil types across the site has been completed at a sufficient level of detail to accurately assess all potential agricultural impacts. A more detailed soil assessment, while providing more detailed delineation of soil map units, would not practically add to or alter the findings and accuracy of the assessment.

2. Identification of the soil forms present on site.
3. The size of the area where a particular soil form is found.

The hectares of each soil form are not specifically given in the report, but the soil map gives an indication of their sizes.

4. GPS readings of soil survey points.

These are mapped, although the actual GPS coordinates are not given for all sample points.

5. The depth of the soil at each survey point.

General depths for soil types are given, but not the specific depth per soil sample point.

6. Soil colour.
7. Limiting factors.
8. Clay content.
9. Slope of the site.
10. A detailed map indicating the locality of the soil forms within the specified area.
11. Size of the site.
12. Exact locality of the site.
13. Current activities on the site, including developments or buildings.
14. Surrounding developments/land uses and activities in a radius of 500 m of the site.
15. Access routes and the condition thereof.
16. Current status of the land (including erosion, vegetation, and a degradation assessment).
17. Possible land use options for the site.
18. Water availability, source and quality (if available).

Rainfall data is included. No other sources of water are included, but based on long term farming experience in the area, these are highly unlikely to be significant.

19. Detailed descriptions of why agriculture should or should not be the land use of choice.

This is not specifically included in the report. However, for this development the land use would remain agriculture. It would simply have the additional land use of energy generation integrated with it.

20. Impact of the change of land use on the surrounding area.
21. A shape file containing the soil forms and relevant attribute data as depicted on the map.

The reviewer has not had access to a shape file.

4. Review comments on updated report

Following an initial review in December 2016, the report was updated to take account of review comments. The changes that were made in the report update (January 2017) are addressed here. Any report updates that address the original review comments are indicated here, numbered by the original point number in sections 2 and 3.

2.5 Reviewer's suggestion not added.
2.8 Some emphasis has been placed on storm water control.
2.9 Report identifies sources of replacement soil as “excavations nearby.” This is still not considered optimal as only subsoil is likely to be available from excavations.
2.11 The clarity of the report has been improved
2.12 Sensitivity is still only understood as sensitivity to erosion, not agricultural sensitivity to development.
Root impeding layer clarified as being luvic.
The entries have been clearly identified in the appendices.
All data has been included in appendices.
The need to manage potential erosion problems across the entire site, regardless of erosion sensitivity has been included.

All the review comments that required addressing in section 3 have been sufficiently addressed.

5. Conclusions of review

I agree with the general finding of the report that agricultural impact will not be of high significance and that from an agricultural impact perspective the development can therefore be authorized, subject to effective mitigation measures being implemented.

Johann Lanz (Pri. Sci. Nat.)
24 January 2016

Johann Lanz
Curriculum Vitae

Education

• M.Sc. (Environmental Geochemistry)	University of Cape Town	1996 - June 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 am registered as a Professional Natural Scientist (Pri.Sci.Nat.) in the field of soil science, registration number 400268/12.

- **Soil Science Consultant** **Self employed** **2002 - present**

  I run a soil science consulting business, servicing clients in both the environmental and agricultural industries. Typical consulting projects involve:

- Soil specialist study inputs to EIA's, SEA's and EMPR's. These have focused on impact assessments and rehabilitation on agricultural land, rehabilitation and re-vegetation of mining and industrially disturbed and contaminated soils, as well as more general aspects of soil resource management. Recent clients include: CSIR; SRK Consulting; Aurecon; Mainstream Renewable Power; SiVEST; Savannah Environmental; Subsolar; Red Cap Investments; MBB Consulting Engineers; Enviroworks; Sharples Environmental Services; Haw & Inglis; BioTherm Energy; Tiptrans.
- Soil resource evaluations and mapping for agricultural land use planning and management. Recent clients include: Cederberg Wines; Unit for Technical Assistance - Western Cape Department of Agriculture; Wedderwill Estate; Goedgedacht Olives; Zewenwacht Wine Estate, Lourensford Fruit Company; Kaarsten Boerdery; Thelema Mountain Vineyards; Rudera Wines; Flagstone Wines; Solms Delta Wines; Dornier Wines.
- I have conducted several research projects focused on conservation farming, soil health and carbon sequestration.

- **Soil Science Consultant** **Agricultural Consultors International (Tinie du Preez)** **1998 - end 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 make recommendations on 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*.