

Review of BRANDVALLEY WIND FARM EIA: Agricultural and Soil Assessment

Johann Lanz was contracted by EOH Coastal and Environmental Services to review their report: BRANDVALLEY WIND FARM EIA: Agricultural and Soil Assessment by Roy de Kock, dated 7 March 2016, and amended according to my review comments.

My initial review made the following recommendations (indicated in red) in terms of each of the stipulated requirements of the review:

1. the report meets the requirements of Appendix 6 of the EIA Regs (see table overleaf which indicates on which page of the report each requirement is met). **Except that 2 points need t be made more explicit: (d) The relevance of the season has not been stated. The season is not relevant, but in order to comply with the regulations this should be stated.; (g) It has not been specifically stated whether any areas should be avoided by the development. If none need to be avoided, this should be specifically stated. I would suggest that all cultivated land needs to be avoided.**
2. all impacts were identified correctly, **except error in Table 9.1 - erosion not indicated as applicable to the construction phase.**
3. all impacts were assessed in an unbiased manner using the correct assessment methodology
4. I agree with the impact ratings, **except that I think any pre-mitigation significance of greater than moderate is an overestimate. In my opinion the significance of an agricultural impact is directly proportional to the reduction in agricultural production that it may cause. I think the following points limit the significance of all agricultural impacts: 1.) the land has extremely low agricultural potential; 2.) the proportion of surface area likely to be affected is very minimal and therefore the overall impact on the carrying capacity / agricultural potential of the site will be minimal. I think the fire significance is overestimated in an environment which is not, as far as I know, particularly fire prone. I think the pre-mitigation significance of all agricultural impacts should be moderate at most.**
5. sufficient mitigation measures have been proposed

I have reviewed the amended report and confirm that the above have all been addressed,

except (d) The relevance of the season has not been stated. The season is not relevant, but in order to comply with the regulations this should be stated.

In terms of alternatives, it is my opinion that there is negligible difference between the agricultural impacts of the project alternatives: access routes, site camps and substations. I conclude that I agree with the report's conclusion that, in terms of agricultural impact, the WEF can commence.

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	p10
	(ii) the expertise of that specialist to compile a specialist report;	P10 & 11
(b)	a declaration that the person is independent in a form as may be specified by the competent authority;	p11
(c)	an indication of the scope of, and the purpose for which, the report was prepared;	P15 & 16 & 20
(d)	the date and season of the site investigation and the relevance of the season to the outcome of the assessment;	p21
(e)	a description of the methodology adopted in preparing the report or carrying out the specialised process;	p20-23
(f)	the specific identified sensitivities of the site related to the activity and its associated structures and infrastructure;	p26-40
(g)	an identification of any areas to be avoided, including buffers;	Not applicable
(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;	Figures 6.5; 7.2; 8.1
(i)	a description of any assumptions made and any uncertainties or gaps in knowledge;	p21
(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;	p42-53
(k)	any mitigation measures for inclusion in the EMPr;	p55
(l)	any conditions for inclusion in the environmental authorization;	Not applicable
(m)	any monitoring requirements for inclusion in the EMPr or environmental authorisation;	p54
(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	P56

Section	NEMA 2014 Regs - Appendix 6(1) Requirement	Position in report
	should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan;	p55
(o)	a description of any consultation process that was undertaken during the course of preparing the specialist report;	Not applicable
(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.	Not applicable

In addition to the regulations listed above, DEA has requirements for Agricultural studies that need to be included in an EIA Agricultural Assessment Report. It is likely that DEA will stipulate these requirements in their response to the scoping 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.

These requirements are:

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. The soil assessment should include the following:

1. Identification of the soil forms present on site;
2. The size of the area where a particular soil form is found;
3. GPS readings of soil survey points;
4. The depth of the soil at each survey point;
5. Soil colour;
6. Limiting factors;
7. Clay content;
8. Slope of the site;
9. A detailed map indicating the locality of the soil forms within the specified area; and
10. Size of the site.
11. Exact locality of the site
12. Current activities on the site, including developments or buildings.
13. Surrounding developments/land uses and activities in a radius of 500 m of the site.

14. Access routes and the condition thereof.
15. Current status of the land (including erosion, vegetation, and a degradation assessment).
16. Possible land use options for the site.
17. Water availability, source and quality (if available).
18. Detailed descriptions of why agriculture should or should not be the land use of choice.
19. Impact of the change of land use on the surrounding area.
20. A shape file containing the soil forms and relevant attribute data as depicted on the map.

It is my opinion that the level of detail in the DEA (and DAFF) requirement is appropriate for arable land only. It is not appropriate for this site. Detailed soil mapping has little relevance to an assessment of agricultural potential in this environment, where cultivation potential is extremely limited, soil conditions are generally poor and the agricultural limitations are overwhelmingly climatic. In such an environment, even where soils suitable for cultivation may occur, they cannot be cultivated because of the aridity constraints. Conducting a soil assessment at the required level of detail would be very time consuming and be a complete waste of that time. It would add absolutely no value to the assessment. The level of soil assessment that was conducted for this report is considered more than adequate for a thorough assessment of all agricultural impacts.

My initial review made the following recommendations (indicated in red) in terms of each of the stipulated DEA requirements:

1. point 2 above – give the size in hectares of the different mapped soil forms and of the total mapped area.
2. Point 12 above – identify any buildings on site and include in map.
3. Point 14 above – comment on the condition of any existing access routes that will be used for the development ie. whether they will need to be upgraded or not.
4. Point 15 above – comment on the condition of the land in terms of erosion and degradation.
5. Point 17 above – comment on the water availability for agriculture – is there borehole water on site used for stock watering?
6. Point 18 above – comment.
7. Point 20 above – include shapefile.

I confirm that the above DEA requirements have been adequately addressed in the report.

My initial review also made the following additional recommendations (indicated in red)

Three additional points that should be stated more specifically in the report are:

1. that the land capability classification of the site includes only class 7 and 8 land.
2. that the wind farm infrastructure will not disturb any cultivated land, or any land with cultivation potential.
3. that the major factor determining the significance of all agricultural impacts is the fact that all potentially impacted land is of extremely low agricultural potential.

I confirm that these points were addressed in the amended report.

Since completing the initial review, DEA requested that the following points also be addressed by the review. My comments in relation to each point is inserted below it.

The peer review must address the following:

1. Are the ToRs acceptable?
Yes
2. Is the methodology clearly explained and acceptable?
Yes
3. 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.
4. Are the mitigation measures and recommendations appropriate?
Yes
5. Does the report make reference to appropriate literature?
Yes
6. Is the article well-written and easy to understand?
It is acceptable in this regard
7. Identify any short comings.
The short comings have already been addressed in the review above.

A handwritten signature in black ink, appearing to read 'J Lanz', with a long horizontal stroke extending to the left.

Johann Lanz (Pri. Sci. Nat.)

28 April 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 Consultants** **1998 - end 2001**
International (Tinie du Preez)
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*.