



## ***ARC-INSTITUTE FOR SOIL, CLIMATE AND WATER***

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To whom it may concern:

### **Review Report: Marella East and West WEF**

**Background:** ARC-ISCW was requested to review the content of two reports “Land capability and wetland assessment for Marella Wind Energy Facility”, produced by WSP Parsons Brinkerhof, dated September 2016. Two adjoining sites, namely Marella West and Marella East, are proposed, but the two reports are very similar, so the comments are largely applicable to both reports.

The aim of the review is to assess the reports in terms of: completeness, correctness and accuracy and any associated aspect, as stipulated in Regulation 13 and Appendix 6 of the Environmental Impact Assessment Regulations of 2014, in terms of the National Environmental Management Act of 1998. In terms of the area of specialist competence of the reviewer, the aim of this review are aspects of **soils, land capability and agricultural potential**.

**Content of Reports:** while the reports generally address most of the relevant aspects, there are several worrying inconsistencies:

- While it is stated that land type information will be utilized, the soil information referred to (Figure 7, p19) is based on broad soil pattern only, which is a lesser level of detail than the land type survey.
- The references quoted for land capability are confusing. The Chamber of Mines guidelines are somewhat simplistic and are specifically created to look at open-cast mining aspects, including the type of soil to be stockpiled. The correct reference should be the 8-class national Land Capability determination, based on the original USDA work and adapted for SA conditions by ARC. On P22, the land capability class is listed as “Class 3 – grazing land”, while Class 3 land can be used for cultivation under certain circumstances.
- Regarding the soil classification, one of the soil types occurring is described as “singular fine-grained fluvial soil” (Plate 4, P29), while other photos show mainly rock fragments.
- Regarding the soil analyses, it is stated that soils of the same family were mixed before being sent for analysis. However, these soils occur several kilometres apart, and there will be definite difference between such soils. It would make more sense to select one representative soil for each “group”, rather than mixing different soils.
- In the first paragraph on P19, “Figure 8” should be “Figure 7”.
- One of the Plates (Plate 2, p29) shows irrigated cultivated grazing land. However, no mention is given of where this occurs, or how much such land under irrigation is present in the area.
- A lot of information seems to be very similar, if not identical, with the Esizayo WEF report. This report deals with a site some 30+ km away from the two Marella sites, so there will in

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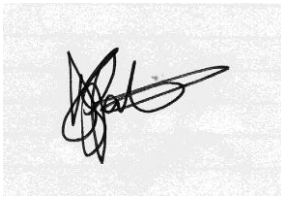
all likelihood be significant changes in soils, terrain and possible land use patterns. It seems strange that these differences have not been adequately distinguished, especially given that there are several different soil types occurring across the various sites.

- In Table 14 (P27), it is stated that “wind erosion is dominant for the region and water erosion is considered limited ...”, which is not true. Despite the dry climate, potential water erosion impacts will be considerably more important in such an environment with sloping topography.

**Conclusion:** while the aspects mentioned above are somewhat concerning, the general conclusion of the reports, which mentions homogeneous soil pattern, low potential, but also the possibility of cumulative impacts from other developments in the vicinity, is valid.

It is the opinion of this reviewer that no serious errors (which could change the overall complexion of any of the reports) were made.

Yours sincerely,



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(Signed)

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