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Att: Ashlin Bodasing

31 January 2018

**SPECIALIST STATEMENT WITH REGARDS TO THE REVISED LAYOUT OF THE UMSINDE EMOYENI WEF PHASE ONE AND PHASE TWO PROJECTS**

This statement letter is in reference to the proposed Umsinde Emojeni WEF Phase One and Phase Two Projects located near to Murraysburg along the Northern Cape – Western Cape border.

In April 2016, Arcus submitted the final environmental impact assessment (EIA) report to the Department of Environmental Affairs (DEA) for authorisation. In September 2017, the DEA, rejected the submission of the report. The reason for this rejection, is noncompliance with Regulation 34 (1) (a) of the EIA Regulation, 2010 (EAP did not afford I&APs the opportunity to review and comment on the final EIA report, prior to submission to the DEA). The DEA therefore require that the final EIA report be made available for public review and comment for a period of 30 days, prior to the submission for authorisation. In light of the above, the applicant Windlab Developments SA (Pty) Ltd (Windlab), have decided to use this opportunity to decrease the size of the proposed development, and reduce the number of turbines applied for. As this has potential to change the assessed impacts of the development, Arcus have requested comments from the specialists involved on the project on the revised layouts and the validity of the original findings of the specialist studies. This ecological specialist statement is provided in this regard and is intended to form an addendum to the original report and as such should be read with such as well.

The Scope of Work and Terms of Reference for the statement include the following:

- Assess the new layout / project description against baseline environment and the assessment that was conducted previously.
- Update the impact assessment as applicable, should there be no change in your assessment, please state this clearly.

The Statement should also include the following:

- New project description
- Confirmation that the study and the assessment complies with relevant legislation and guidelines;
- Findings of the site visit, if undertaken;
- Updated impact assessment, should any of the assessment rating change and an explanation of the change in rating, this must include the cumulative assessment of the proposed development as well;
- Additional buffers and no go areas, if applicable;
- Confirmation of no-go areas, and buffers;
- Clear indication of what infrastructure is permitted / not permitted in buffer areas (for example, a road may be acceptable to pass through a bat buffer area);
- In indication of which turbines must be moved or which if they are acceptable to keep, and must be micro-sited;
- A reasoned opinion as to whether the proposed project should be authorised; and
- Any conditions that should be included in the environmental authorisation.

### **REVIEW OF REVISED LAYOUTS**

The original layout of the Phase 1 and Phase 2 projects each made provision for 98 turbines, this has been reduced to 35 turbines each. The revised layouts of the Umsinde Emoyeni WEF Phase One and Phase Two Projects will consist of the following basic infrastructure:

- Up to 35 turbines per phase with a hub height of 135m maximum and rotor diameter up to 150m.
- The same grid connection as previously assessed.

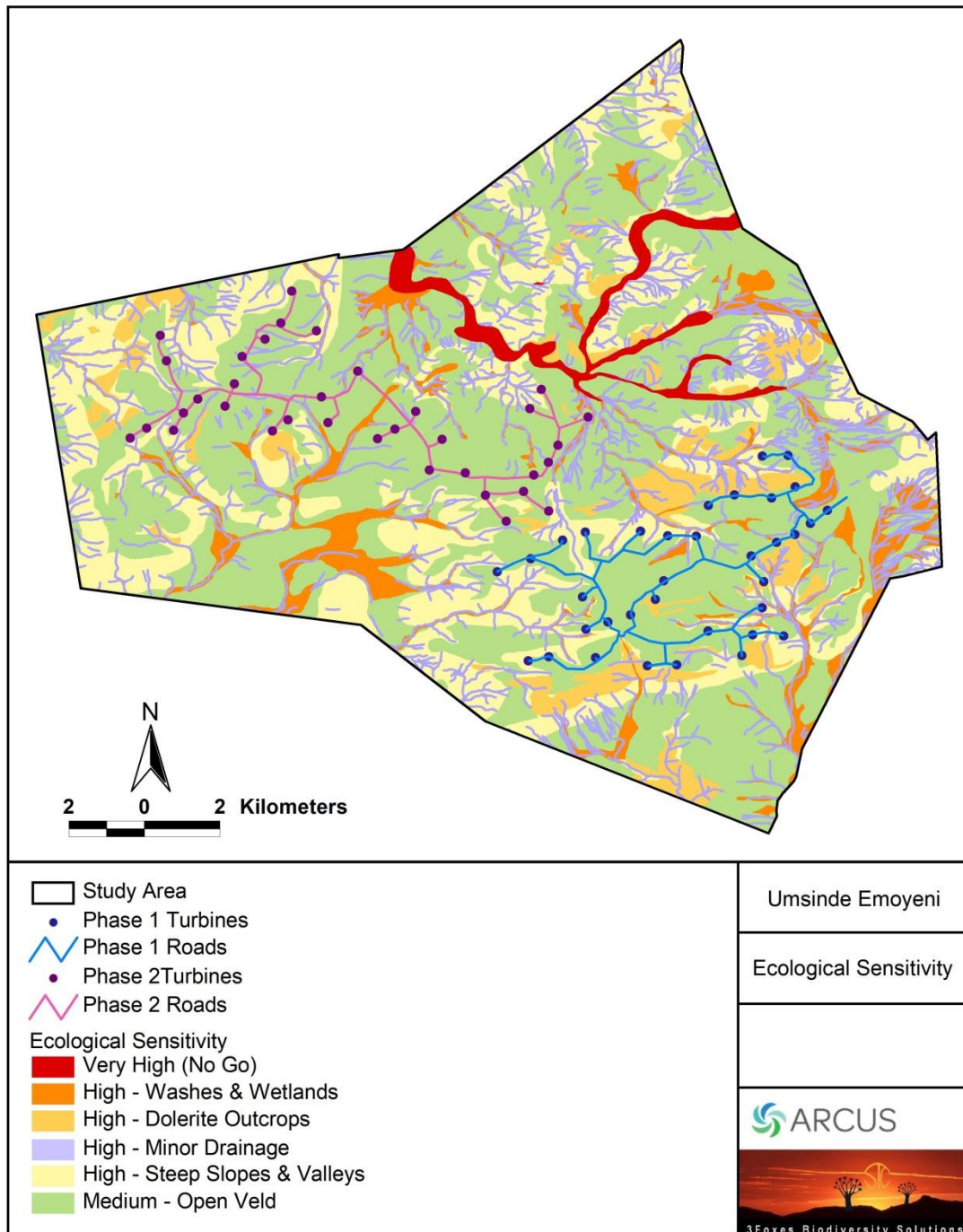
Given the above project description, the major change that has resulted from the revised layout is the large reduction in the number of turbines. This will significantly reduce the footprint of the proposed projects both in terms of the footprint areas required for the turbines, as well as the extent of access roads required which is usually the dominant source of impact on the terrestrial environment from wind farm development. The reduction in access roads, which are seen as being of particular significance for terrestrial impacts have changed as follows:

- The Phase 1 road network has been reduced from 67.08 km down to 33.65 km.
- The Phase 2 road network has been reduced from 100.9 km down the 29.63 km.

Similarly, the footprint areas required for the turbines would also be significantly reduced and an overall reduction in the footprint for the turbines in the order of 50-60% can be expected.

The revised layout of the Phase 1 and Phase 2 projects are illustrated below in Figure 1, with the sensitivity map of the study area. The revised layout has been carefully inspected and reviewed to assess potential impacts to sensitive features at the site. Compared to the original layout, significant improvements are evident with regards to avoidance of sensitive ecological features at the site. There

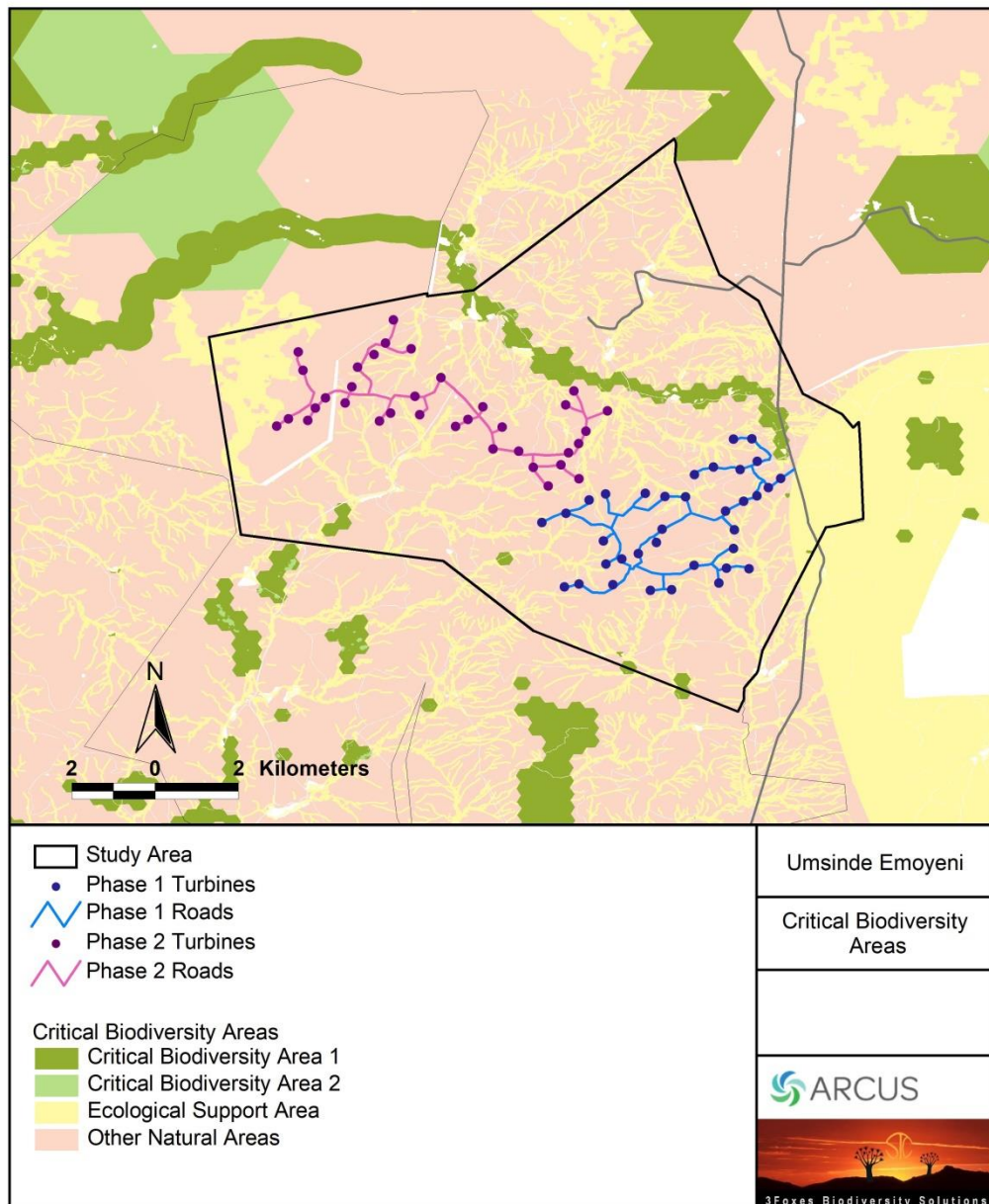
are no turbines in no-go areas or areas considered unsuitable for turbine placement. Apart from the large reduction in the extent of the road network, which is seen as a positive step, there are no roads which traverse no-go areas. While there are some roads which traverse minor drainage systems, crossings have been reduced as far as possible and the remaining crossings are not avoidable and are considered acceptable. As such, the revised layouts are considered well-mitigated and will significantly reduce the impact of the development on the terrestrial environment compared to the original project layouts.



**Figure 1.** Ecological sensitivity map of the Umsinde Emoyeni site, showing the Phase 1 and Phase 2 layouts with 35 turbines each.

## BASELINE ENVIRONMENT

In terms of the baseline environment as described in the fauna and flora specialist study, the major change that has occurred since the EIA was submitted is that a new set of CBA maps has been published for both the Northern and Western Cape. Apart from this there have been no changes to the national vegetation map for the area and the habitats described in the EIA study do not change over short time scales and no significant changes in this regard can be expected. The changes to the regional conservation planning is however significant and has implications for the study. The combined Northern and Western Cape CBA map for the study area is illustrated below in Figure 2.



**Figure 2.** Combined CBA map for the study area, taken from the Beaufort West section of the Western Cape 2017 BSP and 2016 Northern Cape Conservation Plan.

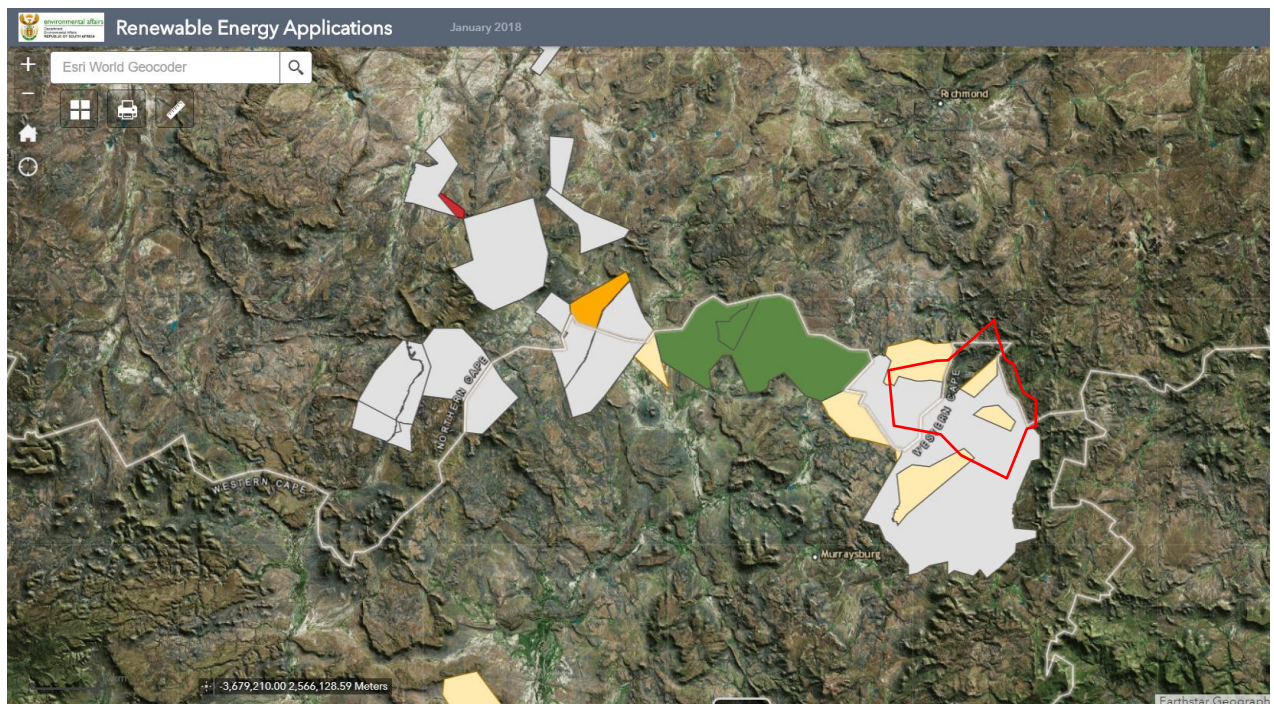
There have been significant changes to the CBA since the original EIA study was conducted and while parts of both Phase 1 and Phase 2 were within CBAs and ESAs, the extent of these areas has been significantly reduced. Under the final revised layouts, there are no turbines within either development within CBAs or within ESAs. There is minimal impingement of drainage line ESAs by access roads and significant impact on ESAs is not likely. Overall, due to the changes in the CBA maps as well as changes to the layout, the impact on CBAs has been reduced and no significant impacts on CBAs is likely to occur under the layouts provided.

## **CUMULATIVE IMPACT**

A map of the DEA-registered renewable energy projects for the area is illustrated below in Figure 3. Although the map has changed from the EIA stage, this is due to updates to the map rather than real changes to renewable energy development in the area. The main projects in the area include the adjacent Trouberg Wind Energy Facility and further to the west around the Gamma Substation is the Mainstream Victoria West Wind Energy Facility which would consist of several 140MW phases. The only built project in the area is the Noblesfontein WEF which is about 75 km to the west of Umsinde. There are also a number of solar PV projects in the area, most notably the Aurora Power Solutions Betelgeuse projects at the junction of the N1 and R63 and the 19MW Biesiesfontein PV Project.

Regarding the interpretation of cumulative impact and the contribution of the current projects, there are a number of factors to be considered. The majority of projects in the area are located within the Eastern Upper Karoo vegetation type, which is the most extensive vegetation type in South Africa. As a result, the total cumulative impact of all renewable energy development within this vegetation type is very low when considered at the national scale. However, this vegetation type is very broadly conceptualized and contains a number of different subtypes, some of which may later prove to be different vegetation types altogether when properly studied. Thus, some consideration of local habitat types that are affected by the different renewable energy projects is required. In the area, the main drivers of vegetation change are soils and climate. In terms of soils, the Upper Karoo Hardeveld vegetation types occupies dolerite ridges that occur embedded within the Eastern Upper Karoo and as such are already captured as a different unit. However, there are also some strong altitudinal gradients in the area which affect the vegetation. The Umsinde Emoyeni projects are located at relatively high elevation and the majority of the development footprint is located at 1500-1600m. The other projects in the area tend to be on the lower elevation plains at 1200-1300m. As this is a somewhat different environment to Umsinde Emoyeni, these projects all contribute to cumulative impacts in the area, but there are some differences in the affected environment with the result that some habitats may be more affected than others. As the lower elevation plains is the predominant type in the area, the higher elevation areas are less extensive and considered more vulnerable to cumulative impact. Currently, there are the two Umsinde Emoyeni phases within this habitat type as well as the adjacent 140MW Ishwati Emoyeni WEF. However, the extent of this habitat is large and the Ishwati and Emoyeni developments would generate less than 300ha of habitat loss which is not significant. The areas to the east and especially the areas above 1800m are considered locally significant and contain a number of local endemics or species of conservation concern

such as the Plain Mountain Adder *Bitis inornata* which is restricted to the high elevation peaks of the Nuweveldberge. These high elevation habitats would not be affected by the current developments.



**Figure 3.** DEA-registered renewable energy projects as at January 2018 from the broad area around the Umsinde Emoyeni study area, which is outlined in red. The green area indicates the affected properties along the Umsinde Grid Connection route, while the other grey areas indicate other wind energy projects in the area.

### ASSESSED IMPACTS

The assessed impacts of the Umsinde Phase 1 and Phase 2 WEF as assessed in the original EIA study are considered here in terms of whether or not any changes to the assessed impacts are justified as a result of the changes to the layout of the facilities. A summary of the revised impacts of the development is provided below in Table 1. The original impacts are generally considered representative of the likely impacts of the development. Although some of the pre-mitigation impacts could justifiably be reduced for the current assessment, the original layout is considered to represent the pre-mitigated layout and as such the pre-mitigation impacts are not altered. However, as the revised layouts are considered to represent mitigated layouts which have made significant attempts to reduce and avoid sensitive areas as far as possible, these are subject to reconsideration. In this regard, it is clear that the impacts on CBAs and broad-scale processes has been significantly reduced and this is now considered to be Low after mitigation. Although some of the other impacts, in particular impacts on vegetation during construction and fauna during operation are reduced from the original impacts, the assessment methodology is coarse and does not result in a decrease from Medium to Low in either case. This is largely because although these impacts would be of Local influence only, they would be of Medium intensity and operate over the long-term, with limited scope for avoidance. As such, compared to the original assessment, only the cumulative impacts are reduced here from the original assessment and all the other assessed impacts are considered equivalent post-mitigation. The recommended mitigation measures as described in the

original study have been reviewed and no changes are recommended in this regard. As such, all the stipulated mitigation and avoidance measures listed remain valid for the revised layout, but no additional mitigation measures are recommended either.

**Table 1.** Revised summary assessment of impacts associated with the Umsinde Emoyeni wind farm development. Impacts are applicable to both Phase 1 and Phase 2 of the development.

Impact		Consequence	Probability	Significance	Status	Confidence
<b>Planning &amp; Construction Phase</b>						
<b>Impact 1:</b> Impacts on vegetation and listed or protected plant species resulting from construction activities	Before Mitigation	High	Probable	High	- ve	High
	After Mitigation	Medium	Probable	Medium	- ve	High
<b>Impact 2:</b> Alien Plant Invasion Risk	Before Mitigation	Medium	Probable	Medium	- ve	High
	After Mitigation	Very Low	Probable	Low	- ve	High
<b>Impact 3:</b> Increased Erosion Risk	Before Mitigation	Medium	Probable	Medium	- ve	High
	After Mitigation	V Low	Probable	V Low	- ve	High
<b>Impact 4.</b> Direct faunal impacts during construction	Before Mitigation	Medium	Probable	Medium	- ve	High
	After Mitigation	Low	Probable	Low	- ve	High
<b>Operational Phase</b>						
<b>Impact 1.</b> Alien plant invasion risk	Before Mitigation	Medium	Definite	Medium	- ve	High
	After Mitigation	Low	Probable	Low	- ve	High
<b>Impact 2.</b> Increased erosion risk	Before Mitigation	Medium	Definite	Medium	- ve	High
	After Mitigation	Low	Probable	Low	- ve	High
<b>Impact 3</b> Faunal impacts during operation	Before Mitigation	Medium	Probable	Medium	- ve	High
	After Mitigation	Medium	Probable	Medium	- ve	High
<b>Decommissioning Phase</b>						
<b>Impact 1.</b> Alien plant invasion risk	Before Mitigation	Medium	Definite	Medium	- ve	High
	After Mitigation	Low	Probable	Low	- ve	High
<b>Impact 2.</b> Increased erosion risk	Before Mitigation	Medium	Definite	Medium	- ve	High
	After Mitigation	Low	Probable	Low	- ve	High
<b>Cumulative Impacts</b>						
<b>Impact 1.</b> Impact on CBAs and Broad-Scale Ecological Processes	Before Mitigation	Medium	Probable	High	- ve	High
	After Mitigation	Medium	Probable	Low	- ve	High

## CONCLUSIONS AND RECOMMENDATIONS

The major change in the layout of the Umsinde Emoyeni Phase 1 and Phase 2 projects is a significant reduction in the overall footprint of each facility as a result of a decrease in the number of turbines as well as a reduction in the required length of access roads. In addition, significant further adjustment of the turbine and access road locations has been conducted to reduce impacts as far as possible. Examination of the revised layouts revealed that there are no turbines in no-go areas or high sensitivity areas considered unsuitable for turbine placement. Apart from the large reduction in the extent of the road network, which is seen as a positive step, there are also no roads which traverse no-go areas. While there are some roads which traverse minor drainage systems, such crossings have been reduced as far as possible and the remaining crossings are not avoidable and are considered acceptable. As such, the revised layouts are considered well-mitigated and will significantly reduce the impact of the development on the terrestrial environment compared to the original project layouts.

The current specialist statement, when read in conjunction with the original EIA study, fulfils the requirements for the contents of specialist studies as detailed in the 2014 EIA regulations. There are no significant limitations or assumptions that would compromise the results and conclusions of the current studies. Fieldwork took place at a favourable time of year and the results are considered reliable and additional fieldwork at the site would not be likely to reveal any additional features of significance. The assessed impacts as assessed in the original study were reviewed based on the revised layouts and changes in baseline information for the study area. The review indicated that the only impact that warranted change as the cumulative impact of the Umsinde Emoyeni project on CBAs and broad-scale ecological process, which was adjusted from the previous assessed impact of HIGH to the revised impact of LOW. This change is warranted as a result of both the change in the layout of the two projects which has significantly reduced impact compared to the original projects and also the change in the CBA status of large parts of the site based on the latest CBA mapping for the Northern and Western Cape. Apart from the cumulative impacts on CBAs, cumulative impacts overall can be considered to be LOW as the affected vegetation type is very extensive and local-level cumulative impacts are still low and the more sensitive parts of the wider landscape are not within the development area.

Based on the above considerations, the original assessed impacts on fauna and flora and their significance are considered still applicable and relevant. Cumulative impacts on CBAs have been reduced from a HIGH potential impact to the LOW likely impact. The original study concluded that *“Overall the development will have a moderate impact after mitigation and some kind of on-site conservation management is recommended to mitigate the negative impacts of the development on ecological processes in the area.”* Based on the changes that have occurred and which have been described in this statement, the following conclusions is reached for the revised layouts ***“Overall the development will have a moderate to low impact after mitigation and with the implementation of the recommended mitigation measures, impacts will be reduced to acceptable level.”*** As the impacts on broad-scale processes in particular have been reduced, the need for some sort of on-site conservation management action as originally recommended is seen as no longer necessary. The overall conclusion reached with regards to the Umsinde Emoyeni Phase 1 and Phase 2 projects are that *“The ecological impacts associated with the*



development of the Umsinde Emoyeni Phase 1 and Phase2 projects will generally be low after mitigation. There are no fatal flaws or high impacts associated with the development that cannot be reduced to a low level. As such, the development of the Umsinde Emoyeni Phase 1 and Phase 2 WEFs are considered to be ecologically acceptable and there are no ecological considerations that should prevent the projects from being approved.”

Prepared by Simon Todd

31 January 2018

A handwritten signature in black ink, appearing to read 'Simon Todd', with a stylized flourish at the end.

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SACNASP 400425/11.

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