



**REVISED FINAL ENVIRONMENTAL IMPACT ASSESSMENT
REPORT FOR THE PROPOSED UMSINDE EMOYENI WIND
ENERGY FACILITY**

PHASE TWO

WESTERN AND NORTHERN CAPE PROVINCES

DEA REF: 14/12/16/3/3/2/687

**On behalf of
EMOYENI WIND FARM PROJECT (PTY) LTD**

February 2018



EXECUTIVE SUMMARY

Proposed Development

Emoyeni Wind Farm Project (Pty) Ltd (the applicant) is proposing the development of the 140 MW Umsinde Emoyeni Wind Energy Facility Phase Two, located near the town of Murraysburg in the Western Cape and Northern Cape Provinces. The proposed development will consist of up to 35 turbines, a hub height of 135 m, and rotor diameter of 150 m and the blade tip height of 210 m.

Project Background

Arcus Consultancy Services Ltd (Arcus) have been appointed to undertake the environmental impact assessment ("EIA") process, incorporating both the scoping and EIA phase, for the Umsinde Emoyeni WEF, including the proposed grid connection. The scoping process was conducted through a combined exercise for all four components of the Umsinde Emoyeni WEF, with each component being subject to a separate application for Environmental Authorisation to the DEA. One Draft Scoping Report (DSR) was prepared for all four components of the Umsinde Emoyeni WEF in June 2014 and subsequently went through public consultation. A Final Scoping Report (FSR) and Plan of Study for the EIA (PSEIA) taking into account comments received during the consultation period on the DSR was prepared in December 2014.

In April 2014, an application for environmental authorisation was submitted to the DEA. In December 2014 the Final Scoping Report was submitted to the DEA and was approved in April 2015.

In April 2016, the final EIA report was submitted to the DEA for environmental authorisation. The application submitted was for up to 98 turbines with each turbine having a generation capacity of between 1.5 MW and 4 MW.

During the public participation on the draft EIA report comments from BirdLife SA and the Black Eagle Project (BEP) were received. The applicant, the EAP and the bird specialist engaged with BLSA and BEP to discuss their comments and concerns on the project.

The main concern was the potential impact to Verreaux's Eagle, should the development be authorised. BLSA and BEP recommended that an additional 12 months of bird monitoring be conducted on site. The additional monitoring followed the yet unpublished Draft Verreaux's Eagle Guidelines and commenced in July 2016 and concluded in August 2017¹.

In September 2017, the DEA rejected the submission of the final EIA report submitted in April 2016. The EIA report was rejected due to non-compliance with Regulation 56(2) of the EIA Regulations, 2010 (the report was submitted on the same day to the DEA and interested and affected parties) (See Appendix C for the Rejection Letter).

A meeting was held with the DEA to discuss the Letter of Rejection and the way forward for the application (Appendix C - minutes of Meeting with DEA). The DEA requested that a revised Final EIA report be submitted. This Revised report would require 30 days public participation for all registered I&APs and further specialist input where necessary.

As new information regarding avifauna in the area became available due to the additional 12 months of bird monitoring, and turbine technology changed since the submission of the report, the applicant decided to update the project description and revise the layout. The DEA advised that any new information must be contained in a Revised / Amended Final EIA Report and will still be subjected to the same 30 day comment and review period, as required in the Letter of Rejection (minutes of the meeting and the letter of rejection are included as Appendix C).

Project Layout Evolution

¹ The Final version of the Guidelines were released and published in March 2017.

The original layout consisted of 98 turbines. The applicant, after taking into consideration the findings and recommendations of the additional avifauna information, revised the turbine layout and reduced the number of turbines to 55.

This 55 turbine layout was provided to all specialists to review and to provide updated impact assessments. The specialists updated their assessments where necessary and provided revised buffer areas and no go areas of high sensitivity. Through an iterative process that took into account all the recommendations and conclusions put forward by the specialists (including **additional constraints, sensitive areas and no go areas**) **a Revised Final layout was produced, which consists of 35 turbines for Phase 1 of the development.**

The specialists have all provided comment on the 35 turbine layout, in an addendum to their original reports (Volume III – Specialist Reports, Part 2).

Specialists Studies

During the EIA process, impacts on both the biophysical and socio-economic environments were assessed. The following specialist's studies were commissioned based on the sensitivities of the site, the potential impacts of the proposed development and in line with the relevant EIA Regulations:

- Visual;
- Terrestrial Ecology (Flora and Fauna);
- Bats;
- Wetlands and Freshwater;
- Birds;
- Soils, Land Use and Agricultural Potential;
- Heritage and Palaeontology;
- Noise; and
- Socio-Economic.

All specialists had the opportunity to review and comment on the revised layouts (both the 55 turbine layout and the 35 turbine layout). The specialists concluded the following:

The major change in the layout of the Umsinde Emoyeni Phase 2 is a significant reduction in the overall footprint of WEF 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.

The proposed development of a wind energy facility on the site will have a small impact on agricultural activities as the soils are of very low potential and only suited to extensive grazing. The turbine footprints are limited to rocky and shallow soil areas with very limited grazing potential.

The impacts on the site need to be viewed in the context of the country's energy mix and the negative externalities associated with current dominant energy sources such as coal, often in areas of high potential soils – such as the Eastern Highveld and the pollution that they produce. Indeed wind energy is associated with positive externalities in the form of rural Economic Development benefits distributed across regions and a decline in the tariff at which power is sold to the off-taker.

The potential noise impact was evaluated using a sound propagation model. Conceptual scenarios were developed for a construction and operational phase. The output of the modelling exercise indicated that there is low risk of a noise impact (low significance during all phases of the development).

While the new layout was not modelled, the closest wind turbines are located further than 1,250m from the closest potential noise-sensitive receptors, further than with the previous layouts. Considering the location of the wind turbines and the potential noise impact, it is my opinion that the change will not increase the significance of the noise impact. A full noise impact assessment

with new modelling will not be required and the recommendations as contained in the previous document will still be valid

From an ecological perspective examination of the revised layout 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 layout is considered well-mitigated and will significantly reduce the impact of the development on the terrestrial environment compared to the original project layouts. 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 was 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.

The proposed layouts for the facility would seem to have limited impact on the aquatic environment as many of the proposed structures will avoid the delineated watercourses. Based on the condition of some of the present crossings, the project thus presents an opportunity to improve the flow and erosion protection where existing culverts / crossings do exist.

No aquatic protected or species of special concern (flora) were observed during the site visit, as well as any natural wetlands. Therefore, based on the site visit the significance of the impacts assessed for the aquatic systems after mitigation would be LOW. This is based on the assumption that the projects will have a limited impact on the aquatic environment and with monitoring of flows, erosion and sedimentation, although unlikely, downstream fish populations will not be impacted upon. This is also coupled to the fact that all of the project components have avoided the alluvial systems.

There are seven potentially affected water courses crossing points that would trigger the need for a Water Use License application (a potential GA) in terms of Section 21 c and i of the National Water Act, should any construction take place within these areas. **However, during the micro-siting process the four crossings could be reduced by moving some of the roads just outside of the buffer, i.e. these are not actual river crossing, and the proposed the road is only within the buffer. This would also apply to the transmission line, once the positions of the towers are known**

An additional 12 months of bird monitoring was conducted on site. Numerous Red Data species, endemic or near-endemic species and priority species were again recorded on the Umsinde Emoyeni WEF site in 2016/17. Generally, activity of these and other target species was found to be similar to the initial monitoring programme (Pearson, 2015). However, a slight increase in flight activity (per hour of VP survey effort) was noted for Verreaux's Eagle, while an increase in Blue Crane records and abundance was observed on the WEF site, which may be partly attributable to an increase in survey effort in certain locations favoured by this species. While no additional Verreaux's Eagle nests were located in 2016/17, activity of this species remained high on the WEF site. Some species of potential concern, e.g. Amur Falcon, Lesser Kestrel, Steppe Buzzard, Booted Eagle, Secretarybird and Black Harrier, were not recorded (or were recorded in lower than expected numbers/activity) during the additional monitoring.

The results of 12 months of avifaunal monitoring were combined with the results of the initial monitoring and used to produce an updated and combined Flight Sensitivity Map and to identify no-go areas. It was recommended that turbines and overhead power lines are not placed within

the “No-go for turbine and overhead powerline placement”. No turbines should be constructed in all Avifaunal No-go Buffers. The current proposed layout adheres to this recommendation (see Figure 9.10).

These areas informed the placement of turbines in the revised turbine layout, with all turbines in the revised layout being placed outside of high or medium-high flight sensitivity areas. It was recommended that the hierarchy of sensitivity scores presented in the Flight Sensitivity Map be considered, with preferential turbine placement in areas with Low Sensitivity areas, followed by Medium Sensitivity areas. This, to a large degree has been adhered to in the revised layout, with most turbines located in low flight sensitivity zones, some in medium zones, and none in medium-high or high sensitivity zones.

After consideration of the additional monitoring findings, and recent data regarding mortality of species at operational WEFs in South Africa, it was the specialists opinion that the initially proposed 196 turbines (across both phases combined) would cause (if all turbines are built) an unacceptably high impact to the regions avifauna, particularly on a cumulative level. The number of turbines has significantly reduced from 196 to 70 turbines, across two phases, this from an avifauna perspective, is an acceptable number of turbines across the two phases of Umsinde.

If unsustainable levels of mortality to key threatened species are realised (as agreed between the specialist in consultations with DEA, BLSA and the BARESG group), mitigations including turbine shutdown, and even possible turbine relocation may need to be considered (and enforced by the DEA where required).

It is noted here that as technology improves, the use of fewer, more powerful machines is possible, potentially resulting in a smaller development footprint and a lower probability of collision impacts for birds. Therefore it is unlikely that 70 turbines will be constructed, as the proposed project is ‘up to 35 turbines per phase’ and it is more likely that a lower number would be constructed.

All applicable mitigation measures and recommendations (where they are not in contradiction to, or superseded by those given in this report) in the avifaunal impact assessment report (Pearson, 2015) must be adhered to.

Several turbines that were originally situated in high bat sensitive areas have been moved to Low-Medium and Medium areas. No turbines, nor their full rotor swept zone are in or within 75 m of a High or Medium-High bat sensitive area. IWS does not object to the 70 turbine project proceeding assuming all the recommendations in the report are met. The specialist also noted that in the context of cumulative impacts it would be important to assume a staggered approach to the environmental authorisations in a region, so learning can adequately inform future approvals. Perrold and MacEwan (2017) collated bat fatality data from across Year 1 studies at 10 operational WEFs from the Eastern, Northern and Western Cape Provinces of South Africa. For just that one year and only for a sub-set of the facilities, well over 1000 bats had been killed and this number continues to increase. The greater the number of turbines, the greater the potential for cumulative impact. Hence, keeping the number of turbines or the rotor swept zone as low as possible in order to meet the power requirements would be beneficial to bat populations. All mitigation measures in IWS (2015) and those specific measures superseded by IWS (2018) should be adhered to. The environmental authorisation (EA) to please also include all essential and best practise mitigation measures listed in this current report (IWS 2018) and those not amended from IWS (2015).

Cultural landscapes are highly sensitive to accumulative impacts and large scale development activities that change the character and public memory of a place. In terms of the National Heritage Resources Act, a cultural landscape may also include a natural landscape of high rarity value, aesthetic and scientific significance. The construction of a large facility can result in changes to the overall sense of place of a locality, if not a region. There will be high visibility of some turbines for a distance along local roads. A tangible change to sense of place will be experienced by farmer and road user however the impact will be reduced due to the lower number of turbines proposed. Major visual impacts to the R63 are avoided.

The findings of the Social Impact Assessment (SIA) (Barbour December 2015) indicated that the development of the proposed Umsinde Emoyeni WEF (Phase 1 and 2) would create employment and business opportunities for the local economy, specifically during the construction phase. However, for the community of Murraysburg and other local towns in the area to benefit from these opportunities will require the implementation of an effective training and skills development programme prior to the commencement of the construction phase and a commitment from the proponent to achieve local employment targets for low and semi-skilled jobs. The establishment of a Community Trust would also benefit the local community. The proposed development also represented an investment in clean, renewable energy infrastructure, which, given the challenges created by climate change, represents a positive social benefit for society as a whole.

The SIA also noted that the potential visual impacts associated with the proposed Umsinde Emoyeni WEF could be effectively addressed by ensuring that no wind turbines are visible from the Farm Badsfontein. The Phase 2 development, will be marginally visible from Badsfontein Farm (gate, opstal and dam).

The recommendations contained in the VIA should be implemented.

Based on these findings the Social Impact Assessment (SIA) recommended that the Umsinde Emoyeni WEF (Phase 1 and 2) be supported, subject to the implementation of the recommended mitigation measures and management actions contained in the SIA and VIA Report.

The Revised Layout for Phase 2 will result in the total number of wind turbines being reduced from 98 Phase (original proposal) to 35. The total number of wind turbines associated with Phase 1 and 2 will therefore be 70 as opposed to 196. This represents a significant reduction. While the reduction in wind turbines will reduce the number of employment opportunities associated with the construction and operational phase, it will also reduce the visual and cumulative impacts of the proposed Umsinde WEF on the areas sense of place. This is regarded as an overall improvement.

The recommendations contained in the December 2015 SIA (Barbour, December 2015) remain valid, namely that the establishment of the Umsinde Emoyeni WEF (Revised Layout 2) be supported, subject to the implementation of the recommended mitigation measures and management actions contained in the SIA (December 2015) and VIA Report.

It was therefore recommended that the Umsinde WEF (Phase 2) be supported, subject to the implementation of the recommended mitigation measures and management actions contained in the SIA and VIA Report and the EMPR.

It is difficult to mitigate the visual effect of a wind energy facility of this size, except by eliminating or relocating some of the turbines, which to a large extent has been done, with the reduction in the number of turbines from 98 to 35.

The visual impact significance of Phase 2 would be high in intensity because of the location of the wind turbines, and because the proposed WEF would be visible from a range of viewpoints as can be seen in the photomontages. The significance has been reduced from high to medium through similar mitigations to those in Phase 1, including the elimination of many of the previously proposed turbines and through micro-siting.

Associated infrastructure, such as access roads, substation and maintenance buildings could also be mitigated and would have a similar medium significance rating.

The construction phase of the WEF and associated infrastructure would be short-term (<2 years) and would potentially have a low visual significance rating.

There are now significantly fewer turbines (35) than in the previous WEF proposal of 2015, the turbines have been moved further north, away from the Trouberg and sensitive receptors, distances from sensitive receptors have increased in many cases, and the viewshed is slightly less extensive, particularly towards the south. In addition, the fewer turbines would potentially result

in slightly less visual clutter on the skyline, as well as fewer access roads and assembly platforms being required.

Therefore, the current layout is preferred for the reasons given above. It follows that the cumulative visual impact would also be slightly less for the current WEF proposals than for the previous 2015 proposals. Any approvals should be subject to the recommended visual mitigations.

The visual impact and the significance thereof associated with a 140 MW WEF on the areas sense of place is likely to vary from individual to individual.

Although this landscape has been assigned a high grade in terms of its quality, the proponent has gone to some lengths to design phase 1 to involve the most inhospitable and remote parts of the project area which means that much of the high scenic amenity value areas will be conserved albeit that elements of the proposed facilities will be visible, in the current layout there are only two potential visual receptors. Farms situated on the valley floors will probably not be seriously impacted to changes in sense of place, although the overall natural qualities of the project areas and aesthetic qualities will be impacted.

The remoteness of areas selected for especially phase 1 and the reduced number of turbines of Umsinde Emoyeni has mitigated this impact.

Assessment of Alternatives

Different alternatives ranging from site location, transportation, design, turbine technologies, and the No Development alternative have all been considered for the proposed WEF. When considering the alternatives the applicant needs to consider environmental, social and economic factors and technical factors. Considering the above mentioned factors, the applicant intends to use the best available technology to satisfy these factors.

The preferred site was chosen based on the following: because the site is located within an area that has a good wind resource, the four components of the proposed development have been located in the sections of the site that are of low-medium areas of ecological sensitivity. The No Development alternative was identified as having a high negative social cost to South Africa: firstly in terms of the country meeting its energy needs with clean, renewable energy and secondly a medium negative social cost in terms of lost employment and business opportunities and the benefits associated with the establishment of a Community Trust.

The No Development scenario is that the Umsinde Emoyeni WEF: Phase 2 cannot be constructed. This result will include the following:

- The land-use remains agricultural with no further benefits derived from the implementation of a complementary land use;
- There is no change in the current landscape or environmental baseline;
- Whilst no WEF development will occur on site, other wind energy projects go ahead as planned in the surrounding area;
- No additional electricity will be generated onsite or supplied through means of renewable energy resources. This would have implications for the South African Government in achieving its proposed renewable energy target;
- There is no opportunity for additional employment (albeit temporary) in the local area where job creation is identified as a key priority; and
- The local Economic Development benefits associated with the WEF development's REIPPPP commitments will not be realised.

The No Development alternative was not considered feasible in the context of the proposed development and the needed power that will be generated from this renewable resource.

Summary of Comments to date:

- Perceived exclusion of landowner occupiers from involvement in the EIA process;
- Objection to the content and the acceptance of the scoping land value report;
- Concern about the perceived manipulation of the EIA process by the EAP;

- Current struggles with power supply from Eskom;
- Request to be registered;
- Information requests and availability of the Draft EIA Report;
- Concern about the proximity of the proposed Ishwati Emoyeni WEF to the Umsinde Emoyeni WEF and cumulative impacts, particularly on bird species;
- Concerns about the adequacy of the avifauna specialist report;
- Request for extension of Draft EIA Report comment period;
- Request for clarity on the proposed Community Trust and development shareholding;
- Safety and security concerns during the construction phase of the project;
- Request for details on business opportunities during the operational phase of the project;
- Request for clarification of the impact assessment ratings (Methodology);
- Enquiry on whether additional public meeting/s will take place in Richmond or another venue;
- Enquiry on employment opportunities during the operational phase of the project;
- Concern about loss of current jobs due to the proposed Umsinde Emoyeni WEF;
- Concern regarding the negative impacts of the proposed project on current businesses (eco-tourism, local farming practices, game hunting, and other local businesses);
- Requests for examples of business opportunities that can arise from the proposed development and from operational wind farms.
- Enquiry regarding a specialist study on bees;
- Enquiry on the determination of a project approval;
- Concerns regarding the impact of the proposed development on the land prices/ value of affected and surrounding farms;
- Request for exclusion of very high sensitive areas from the development footprint;
- Inclusion of Beaufort West and Richmond towns to positive economic development of the WEF as they have their own WEFs;
- Clarification on whether or not heritage resources are to be impacted by the proposed turbine positions or access roads;
- Enquiry if the EIA process determines whether or not the development will go ahead or if it is people's views, it seems like it is mostly the farmers and land owners that have issues with the proposed development.
- Concerns about presence of important birds species and habitat within the development study;
- Concern about social impacts on the town due to influx of workers;
- Concerns about negative visual impacts, ecological impacts and Sense of place;
- Concerns about dust and air pollution;
- Concern about noise impact;
- Concern about the impact of the proposed development and existing infrastructure;
- Clarification on who comprises "project team";
- Avoidance of dusty areas from construction may affect the grazing rotation systems;
- Short term benefits versus long term impacts of the proposed project and
- Alternative renewable energy projects.

Summary of the Impact Assessment

Potential environmental impacts were evaluated according to their extent, duration, intensity and magnitude. Negative impacts of the proposed project on the biophysical environment include clearing of vegetation that leads to habitat fragmentation, potential loss of species of concern, soil erosion, surface water pollution; while social-economic impacts being minimal loss of agricultural land, disruption of social relations within the proposed area by the introduction of contractor workers from different areas, spread of diseases, loss of potential heritage resources and impact on sense of place.

All impacts have been identified and assessed at different stages (design/planning, construction, operation and decommission) and possible mitigation measures assigned to ensure low significance (for negative impacts) or high significance (for positive impacts) as outlined in the Environmental Management Programme (Appendix B). These impacts have been summarised in the tables below for construction phase and operational phase.

Summary of Construction Phase Impacts

Construction Phase	Consequence	Probability	Significance	Status	Confidence
Geology, Soils and Agricultural Potential Impact					
<i>Impact Assessments that remained the same after updated 35 Turbine Layout</i>					
Impact 1: Turbine footprint construction	Low	Definite	Low	- ve	High
With Mitigation	Low	Definite	LOW	- ve	High
Impact 2: Construction of buildings and infrastructure	Low	Definite	Low	- ve	High
With Mitigation	Low	Definite	LOW	- ve	High
Impact 3: Construction of roads	Low	Definite	Low	- ve	High
With Mitigation	Low	Definite	LOW	- ve	High
Impact 4: Vehicle operation and spillages	Very Low	Definite	Low	- ve	High
With Mitigation	Very Low	Improbable	Insignificant	- ve	High
Impact 5: Dust generation	Low	Definite	Low	- ve	High
With Mitigation	Very Low	Improbable	Insignificant	- ve	High
Terrestrial Ecological Impacts					
<i>Impact Assessments that remained the same after updated 35 Turbine Layout</i>					
Impacts on vegetation and listed or protected plant species resulting from construction activities	High	Probable	High	Negative	High
After Mitigation:	Medium	Probable	Medium	Negative	High
Alien Plant Invasion Risk	Medium	Probable	Medium	Negative	High
After Mitigation:	Very Low	Probable	Low	Negative	High
Increased Erosion Risk	Medium	Probable	Medium	Negative	High
After Mitigation:	Very Low	Probable	Very Low	Negative	High
Direct faunal impacts during construction	Medium	Probable	Medium	Negative	High
After Mitigation:	Low	Probable	Low	Negative	High
Bats					
<i>Impact Assessments that remained the same after updated 35 Turbine Layout</i>					
Impact 1: Roost disturbance and/or destruction due to wind turbine, O&M building and sub-station construction	Medium	Probable	Medium	Negative	High
With Mitigation:	Very Low	Possible	Insignificant	Negative	High

Construction Phase	Consequence	Probability	Significance	Status	Confidence
Impact 2: Disturbance to and displacement from foraging habitat due to wind turbine, O&M building and sub-station construction	Medium	Definite	Medium	Negative	High
With Mitigation:	Low	Definite	Low	Negative	High
Birds					
<i>Impact Assessments that remained the same after updated 35 Turbine Layout</i>					
Habitat Destruction	Medium	Definite	Medium	Negative	High
With Mitigation:	Low	Definite	Low	Negative	High
Disturbance and Displacement	Low	Definite	Low	Negative	High
With Mitigation:	Very low	Definite	Very low	Negative	High
Heritage					
<i>Impact Assessments that remained the same after updated 35 Turbine Layout</i>					
Palaeontology	Medium-high	Probable	Med - High	Negative	Medium
With Mitigation:	Medium	Probable	Medium	Positive and Negative	Medium
Pre-colonial heritage	Medium	Probable	Medium	Negative	High
With Mitigation:	Low	Improbable	V low	Neutral	High
Landscape/setting	Medium	Likely	Medium	Negative	High
With Mitigation:	Medium	Likely	Medium	Negative	High
<i>Impact Assessments that changed after updated 35 Turbine Layout</i>					
Colonial heritage at 98 Turbine Layout	Medium	Probable	Medium	Negative	High
With Mitigation at 98 Turbine Layout:	Medium	Probable	Medium	Positive	High
Colonial heritage	Medium	Possible	Medium	Negative	High
With Mitigation:	Medium	Probable	Medium	Positive	High
Palaeontological Heritage Impact					
<i>Impact Assessments that remained the same after updated 35 Turbine Layout</i>					
Disturbance, damage or destruction of well-preserved fossils at or beneath the ground surface during the construction phase (especially due to bedrock excavations, ground clearance)	High	Possible	Medium	Negative	Medium
With Mitigation	Medium	Possible	Low	Positive and Negative	Medium
Noise					

Construction Phase	Consequence	Probability	Significance	Status	Confidence
<i>Impact Assessments that remained the same after updated 35 Turbine Layout</i>					
Construction Noise	Low	Improbable	Very Low	Negative	High
Visual					
<i>Impact Assessments that remained the same after updated 35 Turbine Layout</i>					
Construction of Turbines	Low	Probable	Low	Negative	Medium
With Mitigation:	Low	Probable	Low	Negative	Medium
Wetlands and freshwater					
<i>Impact Assessments that remained the same after updated 35 Turbine Layout</i>					
Loss of riparian systems and water course		High	Medium	Negative	High
With Mitigation:		High	Low	Negative	High
Impact on riparian systems through the possible increase in surface water runoff from hard surfaces and or roads on riparian form and function		High	Medium	Negative	High
With Mitigation:		High	Low	Negative	High
Increase in sedimentation and erosion within the development footprint		High	Medium	Negative	High
With Mitigation:		High	Low	Negative	High
Impact on localized surface water quality		High	Medium	Negative	High
With Mitigation:		High	Low	Negative	High
Social Impacts					
<i>Impact Assessments that remained the same after updated 35 Turbine Layout</i>					
Benefits associated with providing technical advice to local farmers and municipalities	Low	Probable	N/A	Negative	High
With Mitigation/Enhancement:	Low	Probable	Low (Positive)	Positive	High
Improved cell-phone coverage	Low	Probable	Low (Positive)	Positive	High
With Mitigation/Enhancement:	Low	Probable	Low (Positive)	Positive	High
Presence of construction workers and potential impacts on family structures and social networks	Medium	Probable	Medium (Negative for community as a whole)	Negative	High
With Mitigation/Enhancement:	Low	Probable	Low (Negative for a community as a whole)	Negative	High
Influx of job seekers	Low	Probable	Low (Negative)	Negative	Medium

Construction Phase	Consequence	Probability	Significance	Status	Confidence
With Mitigation/Enhancement:	Low	Probable	Low (Negative)	Negative	Medium
Safety risk, stock theft and damage to farm infrastructure associated with presence of construction workers	Low	Definite	Low (Negative)	Negative	High
With Mitigation/Enhancement:	Very low	Definite	Very low (Negative)	Negative	High
Increased risk of veld fires	Medium	Probable	Medium (Negative)	Negative	High
With Mitigation/Enhancement:	Low	Probable	Low (Negative)	Negative	High
Impact of heavy vehicles and construction activities	Medium	Definite	Medium (Negative)	Negative	High
With Mitigation/Enhancement:	Low	Definite	Low (Negative)	Negative	High
Loss of farmland	Low	Definite	Low (Negative)	Negative	High
With Mitigation/Enhancement:	Very low	Definite	Very Low (Negative)	Negative	High
<i>Impact Assessments that changed after updated 35 Turbine Layout</i>					
Creation of employment and business opportunities at 98 Turbine Layout	Low	Probable	Low (Positive)	Positive	High
With Mitigation/Enhancement at 98 Turbine Layout:	High	Probable	High (Positive)	Positive	High
Creation of employment and business opportunities	Low	Probable	Low (Positive)	Positive	High
With Mitigation/Enhancement:	High	Probable	Medium (Positive)	Positive	High

Summary of Operation Phase Impacts

Operational Phase	Consequence	Probability	Significance	Status	Confidence
Terrestrial Ecological Impacts					
<i>Impact Assessments that remained the same after updated 35 Turbine Layout</i>					
Alien plant invasion risk	Medium	Definite	Medium	Negative	High
After Mitigation:	Low	Probable	Low	Negative	High
Increased erosion risk	Medium	Definite	Medium	Negative	High
After Mitigation:	Low	Probable	Low	Negative	High
Faunal impacts during operation	Medium	Probable	Medium	Negative	High
After Mitigation:	Medium	Probable	Medium	Negative	High
Bats					
<i>Impact Assessments that remained the same after updated 35 Turbine Layout</i>					

Fragmentation of foraging habitat or migration routes due to the presence of the operating wind turbines and general WEF activity	High	Probably	HIGH	Negative	High
With Mitigation	Low	Probably	LOW	Negative	High
Fatalities of Medium-High and High risk bat species due to collision or barotrauma during foraging activity, attraction to turbines and during seasonal movements or migration events.	Very High	Probable	VERY HIGH	Negative	High
With Mitigation:	Medium	Possible	LOW	Negative	High
Birds					
<i>Impact Assessments that remained the same after updated 35 Turbine Layout</i>					
Disturbance and Displacement	Medium	Probable	Medium	Negative	High
With Mitigation:	Low	Probable	Low	Negative	High
Power Line Collisions	High	Probable	High	Negative	High
With Mitigation:	High	Possible	Medium	Negative	High
Wind Turbine Collisions	Very High	Probable	Very high	Negative	Medium
With Mitigation:	High	Possible	Medium	Negative	Medium
<i>Impact Assessments that changed after updated 35 Turbine Layout</i>					
Electrocution at 98 Turbine Layout	High	Probable	High	Negative	High
With Mitigation at 98 Turbine Layout:	High	Improbable	Medium	Negative	High
Electrocution	High	Probable	Medium	Negative	High
With Mitigation:	High	Improbable	Low	Negative	High
Visual					
<i>Impact Assessments that remained the same after updated 35 Turbine Layout</i>					
Wind Turbines	Very High	Definite	High	Negative	High
With Mitigation:	Medium	Probable	Medium	Negative	Medium
Powerlines / Infrastructure	Medium	Definite	Medium	Negative	High
With Mitigation:	Low	Probable	Low	Negative	Medium
Noise					
<i>Impact Assessments that remained the same after updated 35 Turbine Layout</i>					
Operational Noise	Low	Possible	Low	Negative	High
Social					
<i>Impact Assessments that remained the same after updated 35 Turbine Layout</i>					
Establishment of Community Trust	Medium	Definite	Medium (Positive)	Positive	High
With Mitigation:	High	Definite	High (Positive)	Positive	High

Promotion of renewable energy projects	Medium	Definite	Medium (Positive)	Negative	High
With Mitigation:	Medium	Definite	Medium (Positive)	Positive	High
Visual impact and impact on sense of place	High	Definite	High (Negative)	Negative	High
With Mitigation:	Medium	Definite	Medium (Negative)	Negative	High
Impact on tourism	Medium	Definite	Medium	Negative	High
With Mitigation:	Low	Definite	Low	Negative	High
<i>Impact Assessments that changed after updated 35 Turbine Layout</i>					
Creation of employment and business opportunities at 98 Turbine Layout	Low	Definite	Low (Positive)	Positive	High
With Mitigation at 98 Turbine Layout:	Medium	Definite	Medium (Positive)	Positive	High
Creation of employment and business opportunities	Low	Definite	Low (Positive)	Positive	High
With Mitigation:	Medium	Definite	Low (Positive)	Positive	High

Summary of Findings

From the assessment, it is evident that the construction and the operation of the WEF and grid connections will have negative impacts both socially and environmentally but when appropriate mitigation measures applied negative impacts are outweighed by positive impacts. Overall the project has a positive economic impact regionally and for South Africa through the generation of clean power, the creation of job opportunities in a extremely rural and economically depressed area, and contribute to the local and regional economy. All identified negative impacts can be successfully mitigated and there are no impacts with an assigned significance rating of "High" after mitigation has been implemented.

Throughout the process for Umsinde Emoyeni WEF sensitive areas and constraints within the WEF site boundary were identified by the specialists. This included results from 24 month bird and 12 month bat monitoring programmes. Constraints maps were delivered to the applicant and these were taken into consideration in the development of the proposed turbine layout and grid connections. Therefore the proposed location of Phase One within the WEF site boundary takes into consideration these identified constraints and is outside of highly sensitive areas. The applicant has optimised the development layout and produced a layout, which takes into consideration, all environmental and social factors, including potential cumulative impacts. Through this process, the layout has evolved from 98 turbines to 55 turbines to the now proposed 35 turbines. Based on this assessment and the finding of the updated specialist's assessments, it is the opinion of the Environmental Assessment Practitioner (EAP) that the majority of negative impacts associated with the implementation of the proposed project have been mitigated to acceptable levels and the extent of the benefits associated with the implementation of the projects will benefit a much larger group of people, in terms of a positive local and regional economic impact, job creation, community upliftment and by definition the generation of power for the country.

Careful consideration must be given for the operational monitoring of birds and bats at the WEF site. The results of which must be shared with SABAAP and EWT and BirdLife SA. Should unsustainable mortalities of birds and bats occur during the operational phase, recommendations from the bird and bat specialists must be adhered to.

Public Review of Revised Final EIA Report

This Revised Final EIA Report has been made available at the following locations for public viewing. The commenting period is from **09 February 2018 to 10 March 2018** (both days inclusive).

Public Placement Venue	Address
Ubuntu Local Municipality	78 Church Street, Victoria West
Beaufort West Local Municipality	112 Donkin Street, Beaufort West
Richmond Ntsikelelo Tida Library	Bernie Groenewalt Street, Richmond
Richmond Police Station	Brink Street, Richmond
Beaufort West Local Municipality (Murraysburg Office)	23 Beaufort Street, Murraysburg
Murraysburg Farmers' Co-operative	36 Leeb Street, Murraysburg
Murraysburg Library	17 Beaufort Street Murraysburg 6995
Website	www.arcusconsulting.co.za

It should be noted that as this is a Revised Final EIA report, comments on the report must be sent directly to the DEA, with the EAP copied in.

Volume II of this EIA report contains the public participation undertaken for this proposed development. Volume II contains the Issues and Responses Report, which expands on the comments received during the EIA phase, as well as the project team responses for each comment received. It is the opinion of the EAP that all issues and concern received throughout the EIA process (scoping phase and EIA phase) have been adequately addressed in this report, and adequately responded to in this Issues and Response Report.

Key changes from the Final EIA Report to this Revised Final EIA Report:

- Comments received after submission of the Final EIA Report (April 2016) have been included in the Public Participation Report (Volume II);
- Changes have been made in the following sections (these include updating the project description and the specialists studies):
 - Executive Summary
 - Executive Summary: Summary of Construction Phase Impacts Table: Social impacts
 - Executive Summary: Summary of Operational Phase Impacts Table: Social impacts
 - Section 1 Introduction
 - Section 1.8 DEA Letter of Rejection
 - Section 4 The Proposed Development
 - Section 6 Alternative Assessment
 - Section 11 Updated Specialist Studies Assessment on 35 Turbine Layout
 - Section 12 Updated Cumulative Impact Assessment on Revised Turbine Layout
 - Section 13.1 Additional Public Participation
 - Section 14 Summary of Findings and Conclusion
 - Section 15 Impact Statement

Next step in the EIA process

Should you have any comments on the Revised Final EIA Reports, please submit comments directly to the DEA (information provided below), and copy in the EAP. All comments received will be collated and submitted to the DEA at the end of the 30 day comment period as part of a revised EIA report.

Following submission of the Revised Final EIA Reports, the DEA will either accept or reject the reports. Once the Final EIA Reports have been accepted by the DEA, the DEA will make a decision on the four applications.

All comments on the Revised Final EIA Reports should be submitted to Mr Herman Alberts, HAlberts@environment.gov.za at the Department of Environmental Affairs, Private Bag X 447, Pretoria 0001, citing the relevant DEA reference numbers stated above, with a copy to Nobuhle Hughes, emoyeni@eims.co.za at Environmental Impact Management Services (Pty) Ltd (EIMS), P.O. Box 2083, Pinetown, 3213, no later than 08 March 2018.