


# Witberg Wind Energy Facility and associated infrastructure, Western Cape Province


Final Motivation for amendment of Environmental Authorisation

DEA Ref.: 12/12/20/1966/AM7

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savannah  
environmental

 +27 (0)11 656 3237

 +27 (0)86 684 0547

 info@savannahsa.com

 www.savannahsa.com

**Prepared for:**

Witberg Wind Power (Pty) Ltd  
Postnet Suite 150,  
Private Bag X3  
Roggebaai  
8012

**Prepared by:**

savannah  
environmental

## PROJECT DETAILS

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- Title** : Witberg Wind Energy Facility and associated infrastructure, Western Cape Province: Final Motivation for the Amendment to the Environmental Authorisation
- Authors** : Savannah Environmental (Pty) Ltd  
Shaun Taylor  
Jo-Anne Thomas
- Specialist Consultants** : Dr. Steve Percival of Ecology Consulting  
Dr. Rob Simmons of Birds and Bats Unlimited  
Werner Marais of Animalia Consultants (Pty) Ltd  
Simon Todd of 3Foxes Biodiversity Solutions  
Tim Hart of ACO Associates cc  
Bernard Oberholzer of Bernard Oberholzer Landscape Architect  
Dr. Brett Williams of Safetech  
Dr. Neville Bews of Dr. Neville Bews & Associates
- Client** : Witberg Wind Power (Pty) Ltd
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# 1. OVERVIEW OF THE PROJECT

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## Location:

The authorised Witberg Wind Energy Facility (WEF) is located on a site ~9km west of Matjiesfontein in the Laingsburg Local Municipality, which falls within the jurisdiction of the Central Karoo District Municipality in the Western Cape Province. This development is to be constructed within the project site which comprises the following farm portions:

- » Remainder of the Farm Jantjesfontein 164;
- » Remainder of the Farm Besten Weg 150;
- » Remainder of Portion 1 of the Farm Besten Weg 150;
- » Remainder of the Farm Tweedside 151;
- » Remainder of the Farm Elandskrag 269; and
- » Portion 1 of the Farm Elandskrag 269.

## Potential Environmental Impacts as determined during the original EIA Process:

From the specialist investigations undertaken within the Environmental Impact Assessment (EIA) process for the wind energy facility (Final Environmental Impact Report (FEIR), dated July 2011), no environmental fatal flaws were identified. However, several 'no go' areas were identified on the site including areas of sensitivity in respect of birds, fauna and flora, and visual. In addition, the following environmental impacts were identified:

- » Potential impacts on birds;
- » Potential impacts on bats;
- » Potential ecological impacts;
- » Potential impacts on heritage;
- » Potential noise impacts;
- » Areas of visual impact; and
- » Potential socio-economic impacts.

Witberg Wind Power (Pty) Ltd received an EA for the construction of Witberg Wind Energy Facility and associated infrastructure in the Western Cape Province (DEA ref: 12/12/20/1966) on 13 October 2011. An appeal decision (Reference: LSA 105-439), dated 13 August 2013, was subsequently issued by the Minister of Environmental Affairs reducing the number of originally authorised wind turbines from 70 to 27 turbines, along with revised turbine specifications, as guided by the inputs of the Independent Bird Specialist (Dr. Steve Percival – Shoney Renewables Consulting), who conducted a Collision Risk Modelling Report, dated 2013.

## Key conclusions and recommendations of the original EIA pertinent to this application:

From the specialist investigations undertaken as part of the original Environmental Impact Assessment (EIA) for the wind energy facility, it was concluded that the majority of impacts were of minor to moderate significance with the implementation of appropriate mitigation measures. Environmental specifications for the management of potential impacts are detailed within the approved Environmental Management Programme (EMPr) which was approved as per Condition 13 of the EA.

The layout assessed during the EIA process undertaken for the project is illustrated in **Figure 1.1**. Areas of sensitivity identified during the EIA process included:

» Birds:

- This is a medium-sized proposed Wind Farm development, for a site with a moderate to high degree of sensitivity with respect to avifauna. There are no regionally or nationally critical populations of impact susceptible species within or close to the development area, and the proposed site does not impinge on any known major avian fly-ways or migration routes. However, it does seriously impinge on an important landscape feature – the Witberg ridge, and may have a significant negative effect on the avifauna of this ridge (including breeding pairs of large eagles and concentrations of localised endemic species) in both the construction and operational phases of the development.

» Bats:

- The higher lying areas on top of the Witberg where the turbines are proposed vary greatly from the lower lying flat areas and the mountain footslopes, where more favourable bat foraging habitat is provided. It has been noted however, that bats may roost in the rocky higher lying areas and move down to the mountain footslopes and lower valley to forage on a nightly basis. Potential roosts on the proposed windfarm site are mainly rock crevices. Additionally, bats may pass over the mountain on a nightly basis to reach foraging habitat on the other side, moving between the mountain peaks.

» Ecology:

- **Flora** – The vegetation of the project site includes the Matjiesfontein Quartzite Fynbos and the Matjiesfontein Shale Renosterveld. The Matjiesfontein Quartzite Fynbos should be viewed as a generally more sensitive vegetation type than the Matjiesfontein Shale Renosterveld.
  - Portions of the site fall within a Critical Biodiversity Area (CBA), as defined in the Central Karoo Biodiversity Assessment (Skownow *et al.*, 2009), located in the south eastern portion and eastern side of the site.
  - In terms of the listed plant species which occur in the area, a number of critically endangered species occur within the general area. These include *Gasteria disticha*, *Gibbaeum nebrownii* and *Protea convexa*. The first two species are associated with more arid environments and are not likely to occur within the area earmarked for development. *Protea convexa* occurs on north-facing slopes within the Matjiesfontein Quartzite Fynbos of the area. Several other listed species such as *Leucadendron teretifolium* and *Leucadendron cadens* were common at the site in areas earmarked for development. *Leucadendron teretifolium* is listed as Near Threatened while *Leucadendron cadens* is listed as Rare and is a narrow Witteberg endemic. Both of these species were very common along the tops of the ridges, and *Leucadendron teretifolium* formed dense populations in some places. Given the abundance and distribution of these species relative to the proposed footprint of the wind farm, it is inevitable that some individuals of these species would be lost should the development proceed. As both of these species are locally abundant, the loss of some individuals should not impact the viability of the local populations.
- **Fauna** – At least 50 mammal species potentially occur at the site. The diversity of habitats available at the site, which includes rocky uplands, densely vegetated kloofs and riparian areas, as well as open plains and low shrublands, a high proportion of the mammal species which potentially occur in the region are likely to be present at the site.
  - The only mammal species of conservation concern which could be perceived to occur at the site is the Riverine Rabbit, *Bunolagus monticularis*, which is listed as Critically Endangered (IUCN

2010) and is regarded as the most threatened mammal in South Africa. It is highly unlikely the Riverine Rabbit occurs on the Witberg site where the turbines are located due to the fact that it has not been recorded in such high rocky ridges, and is generally found in the lower lying valleys and riverine corridors. Additional studies to ascertain the presence of the Riverine Rabbit at the site were not warranted given the marginal nature of the habitat as well as the fact that the development is not likely to significantly impinge on any potential habitat which may occur at the site.

- Approximately 47 reptile species potentially occur at the site, comprising 5 chelonians, 15 snakes, 18 lizards or skinks, 2 chameleons and 7 geckos. Only two of these are listed by the IUCN, namely the Namaqua Plated Lizard which is listed as Near Threatened and Fisk's House Snake which is listed as Vulnerable. Both of these species are widely distributed and the site is not known to be an important area for either of them.
- The semi-arid nature of the site and the paucity of above-ground water render the area generally unfavourable for amphibians.
- Only eight (8) amphibians are likely to occur at the site. There are no threatened amphibian species known to occur on the site, and that the site is generally unfavourable for amphibian habitation (apart from seasonally wet valleys between ridges).

» Heritage (Including Palaeontology):

- Aspects of the Witberg site and surrounds that may be of heritage interest include numerous trace fossils in the Witpoort Formation sandstones, historic dry-packed stone walls, Stone Age artefacts, stone ruins and cairn, heritage cement and stone dams, two historic farm complexes (with four graves found in one of the complexes, and a Victorian house and stone barns, with a cement dam dating back to at least 1944 found in the other complex) and visual cultural landscape aspects associated with the sense of place of the area.
- **Palaeontology** - All the geological horizons in the Study Area are potentially fossiliferous. Consequently, all excavations, whether for road cuttings or foundations, may reveal fresh fossiliferous rock of as-yet unknown significance. The greatest likelihood of new discoveries is in the Kweekvlei, Floriskraal, and Waaipoort Formations of the Witteberg Group, where the significance of any discoveries would be major. Note that if proper palaeontological surveys are conducted during excavation the potential finding of palaeontological resources for furthering scientific knowledge could have a positive impact.

» Noise:

- The ambient noise level of 33 dBA<sup>1</sup> recorded at the Witberg site is considered typical for the area. The predicted LAeq due to the wind turbines would be less than 20 dBA at and beyond the site boundaries except to the west of land parcel Elandskrag RE/269 where the LAeq<sup>2</sup> would be between 25 dBA and 30 dBA. All levels would be less than the typical LReq.n<sup>3</sup> of 35 dBA and there would therefore be no noise impact on land beyond the wind farm site boundaries.
- In terms of the Western Cape NCR the predicted noise levels would be less than the average measured daytime residual level of 33 dBA. The noise levels would not be considered to be a disturbing noise and no noise mitigation would be required.

» Visual:

- The proposed wind farm on the mountain ridgelines would have a low to medium visibility (the latter for a distance of 10 to 12 km), and highly visible for a section of 6km from the N1 National

<sup>1</sup> A-weighted decibels, abbreviated **dBA**, are an expression of the relative loudness of sounds in air as perceived by the human ear. In the A-weighted system, the decibel values of sounds at low frequencies are reduced.

<sup>2</sup> **LAeq** is the sound level in decibels equivalent to the total A-weighted sound energy measured over a stated period of time.

<sup>3</sup> **LReq.n** is the sound rating level for night time.

Road. From the main rail line, the wind farm would be medium or highly visible for a 12 to 15 km stretch, and marginally visible from Matjiesfontein, which is a tourist destination. The general area is otherwise sparsely populated, with only a few scattered farmsteads.

- The physical presence of the proposed Wind Farm may alter the visual character of the landscape, as the proposed infrastructure, particularly the turbines, is in contrast to the rural surrounding landscape.
  - From the view shed analysis of the Final Layout (Alternative 3 – not the currently proposed layout) it can be determined that the Wind Farm would be visible from approximately 75% of the area within a 10 km radius because of the view-shadow effect of the topography.
  - The Witberg Wind Farm would be visible to motorists travelling on all of the above-mentioned roadways to varying degrees (medium to high visibility).
  - The Wind farm would have a high visibility from the secondary roads located on the site.
  - The Wind Farm would be visible from a 10 km distance by the rail line, with visibility ranging from low to high, as the rail line passes close and through a portion of the site.
- » Socio-economic:
- There are no social recommendations for micro-siting of the wind turbines or associated infrastructure.

In terms of the appeal decision dated 13 August 2013 (Reference: LSA 105-439), the reduction of wind turbines from 70 to 27 turbines along with revised turbine specifications was approved due to avifaunal sensitivities. No-go areas were therefore identified and adhered to at the time for the revised wind turbine layout (Layout Revision 7) (**Figure 1.2**).

### **1.1. Overview of the Environmental Authorisation history of the project**

The following provides an overview of the Environmental Authorisation history of the project:

- » An EA was issued for the project on 13 October 2011.
- » the original EA dated 2011 was amended on 29 November 2012 due to an activity omitted from the original EA.
- » The EA was extended in 2013 until 26 November 2015.
- » The EA was extended in 2015 until 26 November 2017.
- » The EA was further amended in November 2016 due to an appeal.
- » The EA was extended in 2017 until 26 November 2020.