



Simon Todd Pr.Sci.Nat
Director & Principle Scientist
C: 082 3326502
O: 021 782 0377
Simon.Todd@3foxes.co.za

60 Forrest Way
Glencairn
7975

Ecological Solutions for
People & the Environment

3 Foxes Biodiversity Solutions
60 Forrest Way
Glencairn
7975

Savannah Environmental (Pty) Ltd
P.O. Box 148
Sunninghill
2157
Tel. 011 656 3237
Att: **Hermien Slabbert**

10 March 2019

RE: Amendment Application for Great Karoo Wind Energy Facility

This statement letter is in reference to the authorized Great Karoo Wind Farm (DEA REF 12/12/20/2370/3, as amended) and the request from Savannah Environmental (Pty) Ltd for comment on the ecological implications of the proposed changes to the layout and turbine specifications that would be included in the amendment application to the Department of Environmental Affairs.

The changes to the layout and technical specifications of the turbines include the following:

- Increase in turbine capacity up to 6.5MW;
- Increase in turbine hub height up to 150m
- Increase in rotor diameter to a maximum of up to 180m;
- Potential increase to WTG foundation area and laydown area;
- Update the layout as required; and
- Extend the validity period by an additional 5 years;

As the turbines and associated infrastructure will change position, Savannah have requested confirmation regarding the assessed impacts in term of the following:

1. Discussion on the change in impact, if any
2. Additional mitigation measures, if any
3. Any disadvantages and advantages that may result due to the amendment

1. Change in Impact Due to Proposed Amended Layout

The amended layout was reviewed in reference to both the original 77 turbine layout assessed (Hoare 2014)(which EA approved 57 turbines) as well as the amended 52 turbine layout that was subsequently assessed and approved (2016) and the sensitivity of the site as originally assessed and mapped. The ecological sensitivity map of the site, depicting the amended layout is presented below in Figure 1. **Please note:** high sensitivity areas depicted in Figure 1 below are not to be regarded as 'no-go' areas.

Rather they are areas in which disturbance must be minimised as far as possible, and where search-and-rescue operations should be focussed. This is consistent with the original EIA ecological findings (Hoare, 2014).

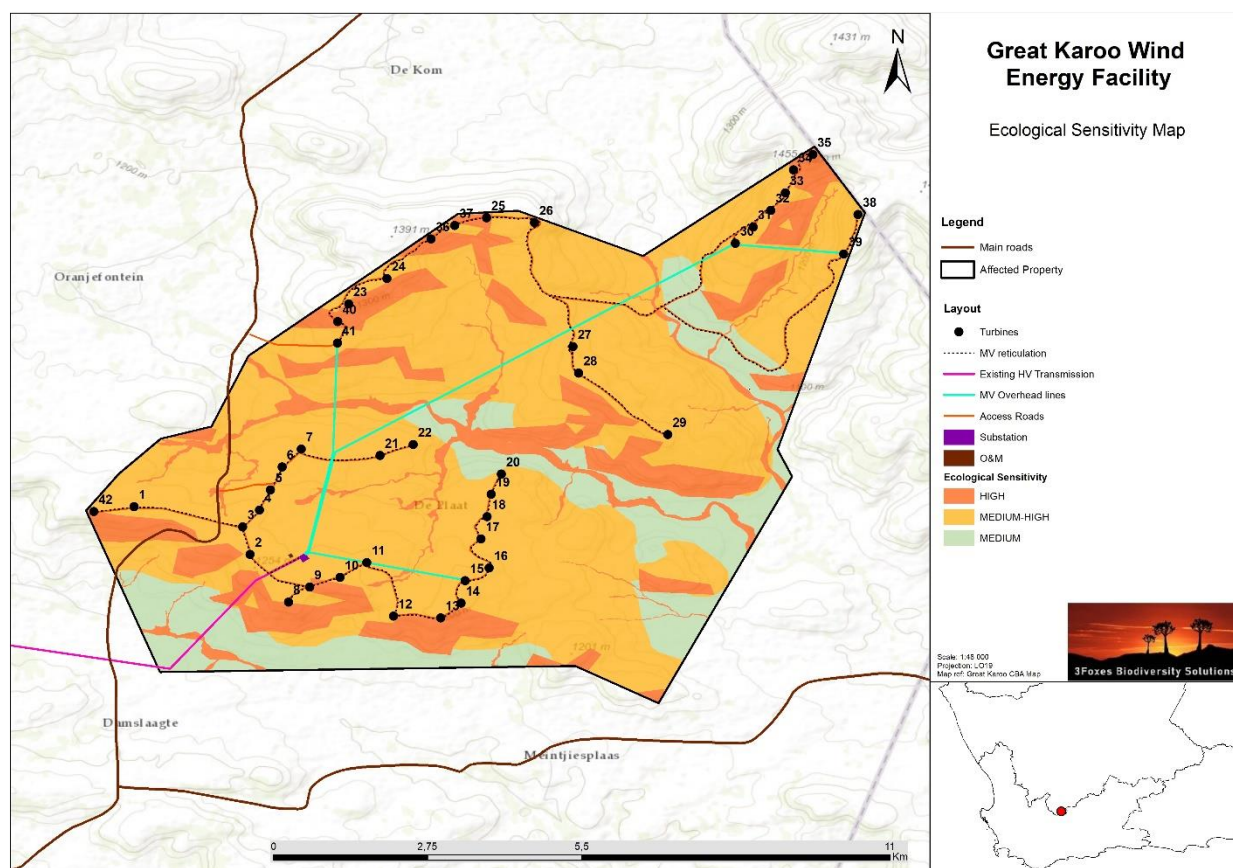


Figure 1. Sensitivity map of the Great Karoo WEF site, depicting the amended layout of the facility as considered within this amendment, overlaid onto the original sensitivity map of the site as produced by Hoare (2014).

In terms of the original sensitivity map produced for the site, the ecological impact of the current proposed turbine layout would be similar or slightly lower than the most recent approved 52 turbine layout (Figure 1). The distribution of turbines, access roads and other infrastructure in relation to the assessed sensitivities of the site (Hoare, 2014) are similar and an increased impact on the high sensitivity parts of the site **is not likely**.

However, the impact of the development on CBAs was not directly assessed in the original ecological specialist study, as this information was not available at the time of the original ecological assessment. As such, it is not possible to compare the impact of the current amended layout on CBAs directly with the previously assessed impacts on CBAs. However, the Namakwa District CBA map available in 2014, was integrated into the original ecological sensitivity map and impacts on the CBAs were assessed as part of more general habitat loss. In terms of habitat loss, the current development would not have a greater footprint than the original layout and as the habitats impacted would essentially be the same, an increased impact on habitat loss as a result of the amended layout **is not likely**.

Since the original 2014 assessment, the Northern Cape CBAs map has been released in August 2018 and under this map, the site lies within areas classified as CBA 1 and CBA 2. The original Namakwa District

CBA database mapped south-facing slopes and kloofs as CBA 2 areas (Figure 2), but these are generic features that are not necessarily the high biodiversity or ecologically important parts of the site, especially in the Roggeveld, where lowlands and drainage features are often of higher sensitivity due to the higher abundance of species of concern in these areas.

As the 2018 Northern Cape CBA map (Figure 3) does not indicate why an area has been selected as a CBA, it is not possible to tell why the areas within the site have been selected as CBAs, however, this appears to be related to the topographic diversity of the area as well as the fact that the area falls within the Roggeveld Centre of endemism, with a high abundance of plant species of concern. As the 2018 CBA map was not available at the time of the original assessment, it cannot be used to provide a comparison with the original assessment as it represents new information that has since become available.

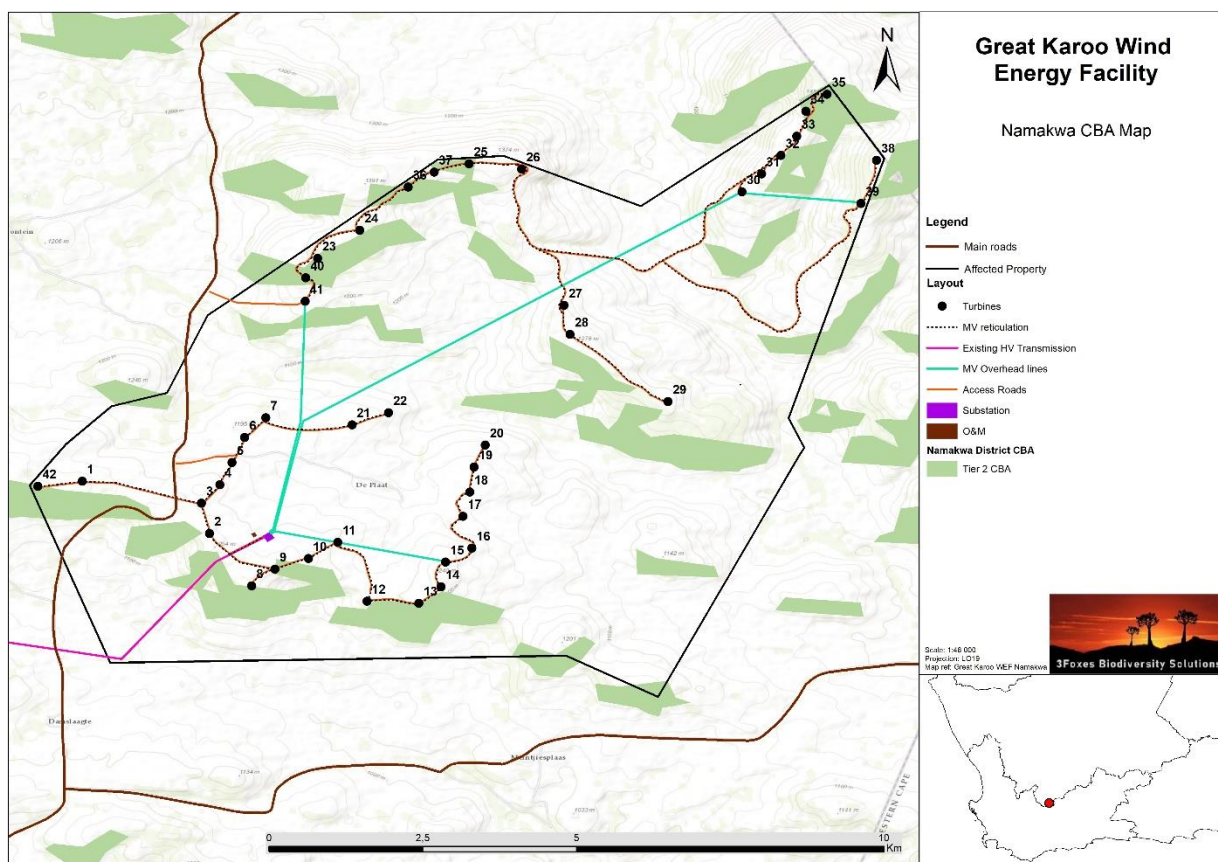


Figure 2. The current turbine layout in relation to the Namakwa District CBA which was used to inform the original ecological study

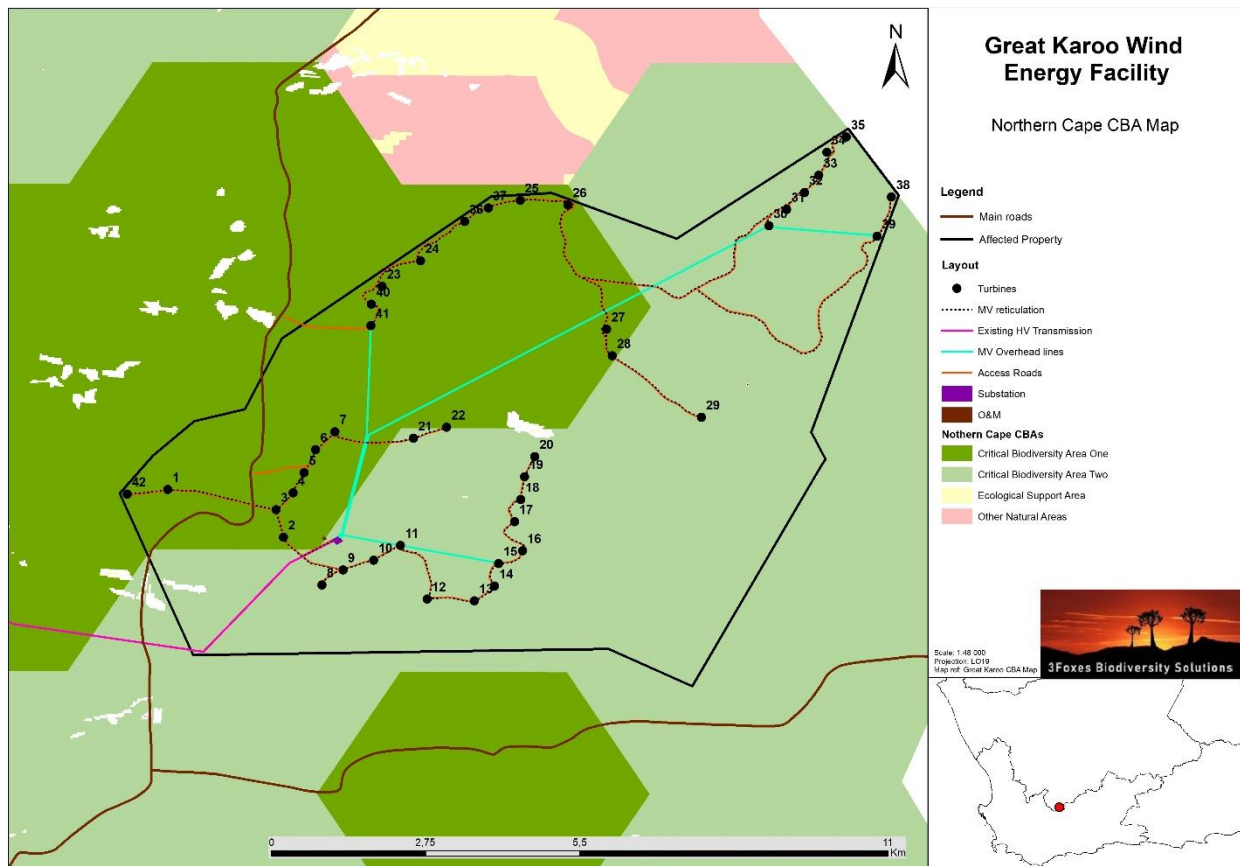


Figure 3. The current turbine layout in relation to the more recent 2018 Northern Cape CBA map which has superseded the Namakwa District map.

An aspect that requires some attention is the distribution of underground vs. overhead cabling at the site (see Figure 1). The current amendment allows for the extent of internal overhead lines to be increased significantly compared to the assessed layout which included a larger amount of buried cabling. While this is seen as having a positive impact on terrestrial ecology within the high sensitivity parts of the site, this is not the only consideration in this regard. An increase in overhead lines is likely to have some implications for avifauna and as such, the recommendations of the avifaunal specialist in this regard should take precedence within all areas except High ecological sensitivity areas, where specific input from an ecologist should be sought regarding the acceptability and routing of underground vs overhead MV lines. As such, the total extent of overhead lines on the site should be guided largely by avifaunal considerations, with ecological considerations only being of high importance in high and very high sensitivity parts of the site.

2. Amendments to Condition 13.2 and Condition 49 of the EA:

Condition 13.2 of the EA states that the layout must adhere to a 150m and 100m buffer respectively between watercourses, ridge edge and the turbine/construction activities. Condition 13.2 of the EA is requested to be amended:

Amendment of Condition 13.2 of the EA:

From:

“A 150m and 100m buffer respectively between watercourses; ridge edge and the turbine/construction activities”

To:

“Turbine and infrastructure positions as approved by an avifaunal specialist”

Condition 49 of the EA states that a 150m buffer between watercourses and 100m buffer between the ridge edge and the turbine/construction activities must be implemented. Condition 49 of the EA is requested to be amended

Amendment of Condition 49 of the EA:

From:

Condition 49:

“A 150m between watercourses and 100m buffer between the ridge edge and the turbine/construction activities must be implemented.”

To:

“The layout must be approved by an avifaunal specialist.”

The turbines of the current amended layout are not located within ecological no-go areas and adheres to 500m buffers from major watercourses. The high sensitivity areas and features at the site are currently outside of the development footprint or have acceptable levels of impact. Furthermore, the reference to “ridge edge” in the Environmental Authorisation (EA) is ambiguous as it is not clear how a “ridge edge” would be defined, as the site is not along the escarpment itself which has a clearly defined edge and in terms of the affected ridges, these are generally fairly flat on top but most grade gradually from ridge top to slope. This would make it challenging to implement the condition as stated in the EA. The increase in overhead lines would not increase terrestrial impacts and as such is considered acceptable from a terrestrial ecology standpoint, but as it is likely to have some implications for avifauna, the recommendations of the avifaunal specialist should take precedence in this regard. It is therefore requested that the layout be approved by an avifaunal specialist.

In light of this it is suggested that instead of adhering to a 150m and 100m buffer respectively between watercourses; ridge edge and the turbine/construction activities, that the layout be approved by a suitable experienced avifaunal specialist.

3. Advantages and Disadvantages of the Proposed Amendment

The major change to the development in terms of the current amendment and which could have potentially significant ecological impacts, is the increase in turbine size as this could result in an increase in the footprint of each turbine. However, this would occur simultaneously with a decrease in the number of turbines required and the change in the distribution of access roads and medium voltage cabling. The change in turbine size is **not likely to** result in significant additional impact as any increase from the original assessed turbine size would be simultaneously associated with a decrease in turbine number, thereby largely ameliorating the increased individual footprint. In terms of the roads, the total extent of the road footprint is assumed to be similar to the original assessed layout and as such there is not likely to be any change in impact associated with the roads as the amount of footprint within the high sensitivity parts of the site has not increased. **Overall, no upward or downward adjustment of impacts is justified based on the changes to the layout. As such, the amendment is supported from an ecological perspective as it would not increase or change any impacts associated with the development.**

Conclusions & Summary Findings

- The findings of this statement are contingent of the layout as provided for the assessment. There are a variety of high sensitivity areas and features at the site, which are currently outside of the development footprint or which have acceptable levels of impact, but which could be affected by any changes to the road or turbine layout. As such any further changes to the road or turbine positions should be checked by an ecological specialist.
- The amendment allows for the extent of internal overhead lines to be increased. From an ecological standpoint, this has some potential positive impacts especially on flora. However, as this may have implications for avifauna, the recommendations in that regard must also be considered. Where there is doubt, specific input from a plant ecologist familiar with the area should be sought.
- Should the development proceed to construction, the final development footprint should be subject to a preconstruction walk-through to locate and identify species of conservation concern that are within the development footprint. Some search and rescue of plant species of conservation concern may be required.
- The Great Karoo Wind Farm Amended layout is well supported in terms of terrestrial ecology impacts. **Overall the impact of the amended layout on fauna and flora would be the same as the authorized layout and there are no fatal flaws or critical issues associated with the proposed changes.** As a result, the amendment is supported from an ecological perspective as it will not result in an increase in the significance in any of the assessed ecological impacts.

Prepared by Simon Todd

Director

3Foxes Biodiversity Solutions

10 March 2019



Pr.Sci.Nat

SACNASP 400425/11.
