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**KARREEBOSCH WIND ENERGY FACILITY (WEF):  
AGRICULTURAL COMPLIANCE STATEMENT IN TERMS OF THE PART 2 AMENDMENT,  
FINAL LAYOUT AND ENVIRONMENTAL MANAGEMENT PROGRAMME(EMPr) APPROVAL.**

## 1 INTRODUCTION

Karreebosch Wind Farm (Pty) Ltd (the Applicant) applied for Environmental Authorisation (EA) for the proposed Karreebosch WEF in 2015. The original Environmental Impact Assessment (EIA) was undertaken in September of 2015 for up to 71 wind turbines with a hub height of up to 100m and a rotor diameter of up to 140m including associated infrastructure. Environmental authorisation (EA) for 65 turbines was granted on 29 January 2016 (EA Ref: 14/12/16/3/3/2/807). The project underwent subsequent amendments (EA Ref: 14/12/16/3/3/2/807/AM1, 14/12/16/3/3/2/807/AM2, 14/12/16/3/3/2/807/AM3) which included increases in the hub height (up to 125m), rotor diameter (up to 160m), blade length (up to 80m), and minor amendments to the wording of certain conditions of the authorisation, as well as an extension of the validity of the EA to 2026.

The associated 132V overhead powerline (OHPL) and onsite 33/132kV substation are currently subject to a separate EA application process.

The authorised Karreebosch WEF and associated infrastructure is currently undergoing a Part 2 EA Amendment Process with the proposed amendments given below. Condition 16 of the original EA (EA Ref: 14/12/16/3/3/2/807) requires that the final development layout plan be made available for public comment and thereafter submitted to Department of Forestry, Fisheries and Environment (DFFE) for approval. Condition 18 of the original EA (Ref: 14/12/16/3/3/2/807) states that the Environmental Management Programme (EMPr) submitted as part of the Final EIA Report (2015) was not approved and must be amended to include the final layout which has undergone micro-siting and walkdowns by relevant specialists, be made available for public comment and thereafter re-submitted to the DFFE for final approval. The final layout and EMPr approval process will run concurrently with the Part 2 EA Amendment process.

## 2 PART 2 AMENDMENT

The following amendments are proposed to the existing Karreebosch WEF environmental authorisation (EA) (DFFE Ref: 14/12/16/3/3/2/807/AM3).

Aspect to be amended	Authorised	Proposed Amendment
<b>Number of Turbines</b>	Up to 65 with a foundation of 25m in diameter and 4m in depth	Up to 40 turbines with a foundation of 30m in diameter and 5m in depth
<b>Turbine generating capacity</b>	Up to 5.5 MW	up to 7.5 MW in capacity each
<b>Turbine Hub Height</b>	A range up to and including 125m	All turbines up to 140m
<b>Rotor Diameter</b>	A range up to and including 160m	All turbines up to 170m
<b>Blade length</b>	~80m	~85m
<b>Area occupied by transformer stations/substation</b>	<ul style="list-style-type: none"> <li>Two 33/132kV Substation 100m x 200m</li> <li>Extension of the existing 400kV substation at Komsberg</li> <li>Transformer art each turbine: total area &lt;1500m<sup>2</sup> (2 m<sup>2</sup> per turbine up to 10m<sup>2</sup> at some locations)</li> </ul>	<ul style="list-style-type: none"> <li>one 33/132kV substation 150m x 200m (3ha)</li> <li>Extension of the existing 400kV substation at Komsberg</li> <li>Transformer at each turbine: 6m x 3m= 720m<sup>2</sup> total area &lt;0.4ha (up to 10mX10m at some locations)</li> </ul>
<b>Capacity of on-site substation</b>	132kV	33/132kV
<b>Areas occupied by construction camp</b>	300 x 300m = 90 000m <sup>2</sup>	Areas occupied by construction camp and laydown areas up to 14ha
<b>Area occupied by laydown areas</b>	Operation: (70 x 50) x 71 =248 500m <sup>2</sup>	
<b>Areas occupied by buildings</b>	~10 000m <sup>2</sup>	~10 000m <sup>2</sup> and will be located within the construction camp for use during the operational phase
<b>Length of (new) internal access roads</b>	~40 km	~77 km of new internal access roads and up to ~14 km of 4x4 access tracks ~30km of existing access roads which are 4m wide will be widened by up to 9m.
<b>Width of internal roads</b>	Up to 12m	Internal Access roads up to 12m wide (turns will have a radius of up to 55m) with additional yet associated servitudes/ reserve for above/underground cabling installation and maintenance where needed. 200m wide road corridor along the internal access roads for micro-siting during construction. Internal 4x4 tracks associated with the 33kV and 132kV OHPLs will be up to 4m wide and

Aspect to be amended	Authorised	Proposed Amendment
		substation access roads of up to 9m.
Height of fencing	Up to 3m	Up to 4m

There are no agricultural impacts related to the proposed amendment. It will not change the nature or significance of any of the agricultural impacts assessed in the original study completed by Jasper Dreyer in 2015. No changes or additions to the mitigation measures for agricultural impacts that were recommended in the original assessment are required, and there are therefore no required changes to the Environmental Management Programme (EMPr). The agricultural impact of the amended project will therefore be, for all practical purposes, the same as the impact that was assessed in the original specialist assessment report. Theoretically the reduction in turbine numbers from 65 authorised turbines to the amended 40 will reduce the agricultural impact, but because the impact of 65 turbines was negligible anyway, the reduction has very little significance.

Therefore, from an agricultural impact point of view, it is recommended that the amendments be approved.

### **3 AGRICULTURAL ASSESSMENT OF FINAL LAYOUT AND EMPr**

The purpose of this specialist input is to assess the acceptability of the final proposed Karreebosch WEF layout, and to assess the adequacy of the EMPr, both in terms of the project's impacts on agricultural resources.

The objective and focus of any agricultural assessment for Environmental Authorisation is to assess whether or not a proposed development will have an unacceptable agricultural impact or not, and based on this, to make a recommendation on whether it should be approved or not. Agricultural impacts are done in terms of the protocol for the specialist assessment and minimum report content requirements of environmental impacts on agricultural resources. The aim of this protocol is to preserve valuable agricultural land for agricultural production. Valuable land is considered to be predominantly scarce arable land that is suitable for the viable production of cultivated crops. However, all land that is excluded from agricultural use by this development footprint is entirely unsuitable for crop production due predominantly to very significant climate constraints and is therefore not considered preservation-worthy as agricultural production land.

The focus and defining question of any agricultural impact assessment is to determine to what extent a proposed development will compromise (negative impacts) or enhance (positive impacts) current and/or potential future agricultural production. The significance of an impact is therefore a direct function of the degree to which that impact will affect current or potential future

agricultural production. If there will be no impact on production, then there is no agricultural impact. Impacts that degrade the agricultural resource base, pose a threat to production and therefore are within the scope of an agricultural impact assessment.

For agricultural impacts, the exact nature of the different infrastructure within a development has very little bearing on the significance of impacts. What is of most relevance is simply the total footprint of the facility that excludes agricultural land use or impacts agricultural land. Whether the footprint comprises a turbine, a road or a substation is largely irrelevant to agricultural impact.

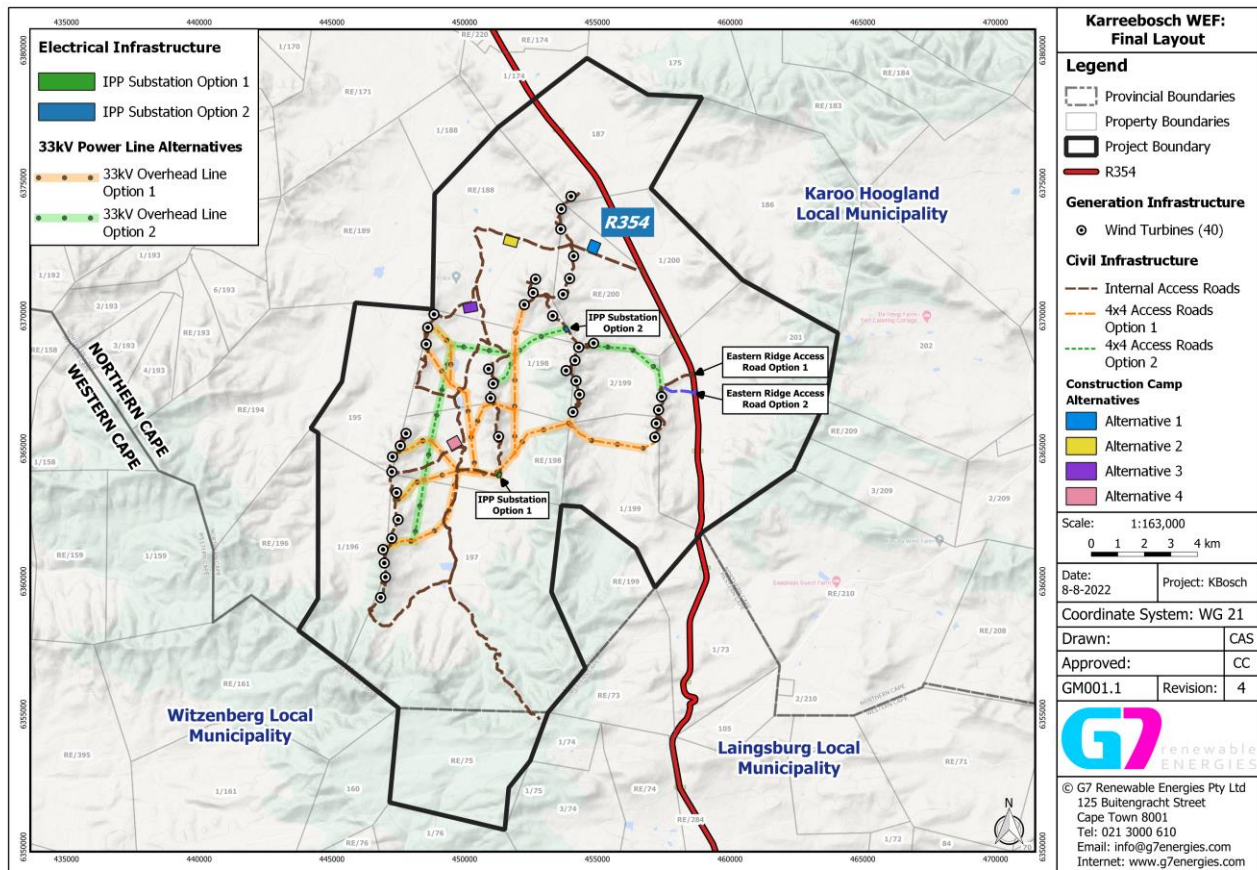
It is also important to consider the scale at which the significance of an impact is assessed. An agricultural impact equates to a temporary or permanent change in agricultural production potential of the land. The change in production potential of a farm or significant part of a farm will obviously always be highly significant at the scale of that farm, but may be much less so at larger scales. This assessment considers a regional and national scale to be the most appropriate one for assessing the significance of the loss of agricultural production potential.

The significance of all potential agricultural impacts of the Karreebosch WEF is mitigated by two factors:

- the fact that the proposed site is on land of extremely limited agricultural potential that is only viable for low density grazing.
- The agricultural footprint of the WEF (including all associated infrastructure and roads), that results in the exclusion of land from potential grazing, is insignificantly small in relation to the surface area of the affected farms. All agricultural activities will be able to continue unaffectedly on all parts of the farms other than the insignificantly small development footprint for the duration of and after the project.

A map of the proposed final layout of the Karreebosch WEF and associated infrastructure, that was assessed here is given in Figure 1.

For agricultural impacts, the agricultural footprint, which is the land that is actually excluded from agricultural production potential by the operational phase of a development, is what is of relevance. Note that the area under an overhead power line is not excluded from agriculture and does not therefore form part of an agricultural footprint.



**Figure 1.** Map of the proposed final layout of the Karreebosch WEF and associated infrastructure

A map of the proposed final layout of the Karreebosch WEF, overlaid on the screening tool sensitivity, is given in Figure 2.

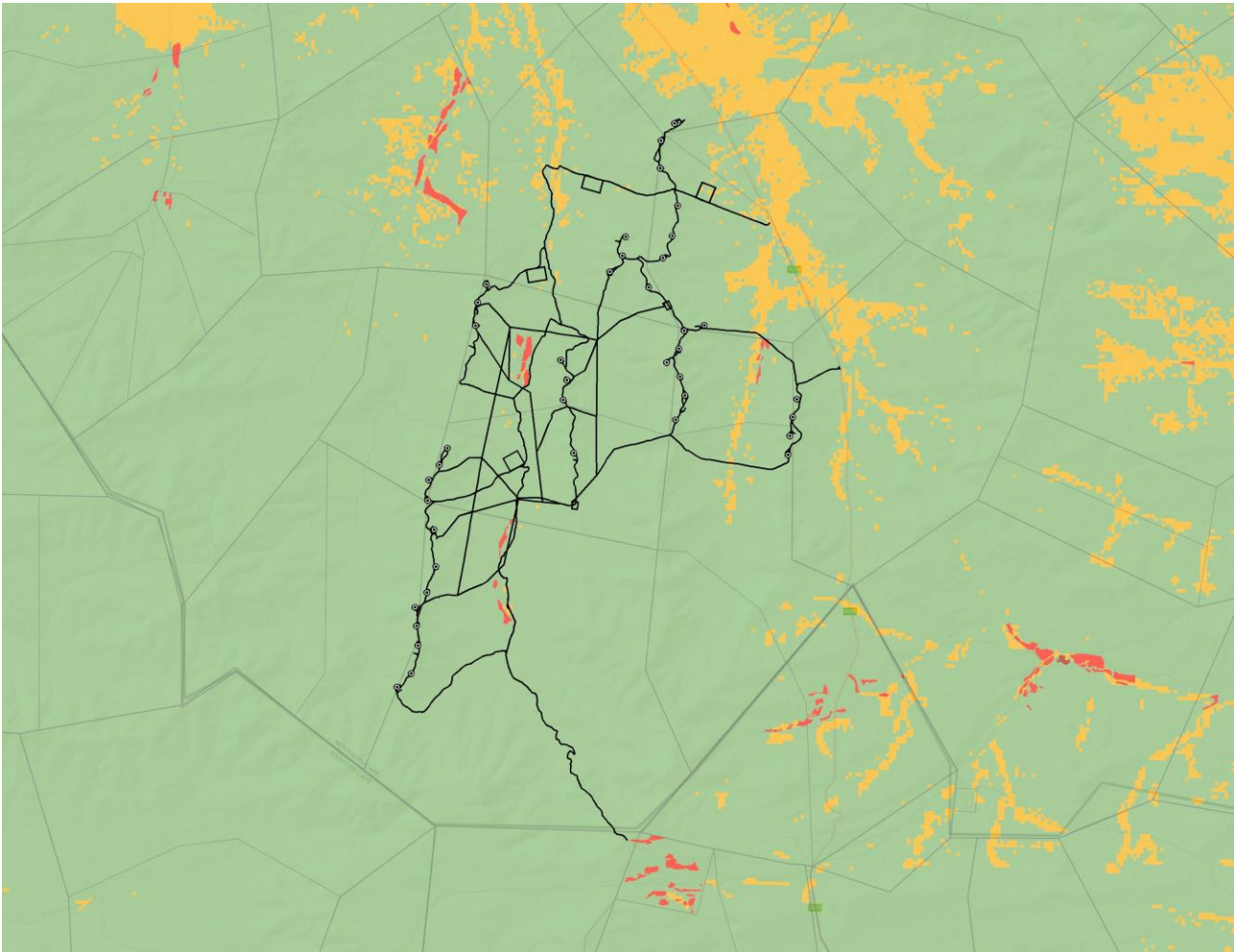
## CONCLUSION

The layout is almost entirely on land of very low potential which is rated as low agricultural sensitivity. Only a small part is on medium sensitivity, which, for all practical purposes, has the same agricultural production potential as the low sensitivity land. The layout entirely avoids any land that is rated more than medium sensitivity, and that would therefore be a higher priority in terms of its conservation for agricultural land use. The final layout is therefore acceptable in terms of agricultural impact.

Due to the very low agricultural production potential of the site, and the effectively uniform agricultural conditions across the site, there will be absolutely no material difference between the agricultural impacts of any of the proposed alternatives. These include alternatives for construction camps, substations, 4X4 access roads and access roads off the R354. All alternatives are considered acceptable.

Theoretically the reduction in turbine numbers from 65 authorised turbines to the amended 40

will reduce the agricultural impact, but because the impact of 65 turbines was negligible anyway, the reduction has very little significance.



**Figure 2.** The proposed layout of the facility, including alternatives, overlaid on agricultural sensitivity, as given by the screening tool (green = low; yellow = medium; red = high; dark red = very high).

The EMPr for the Karreebosch WEF has been assessed. The important aspects of the protection of agricultural resources are the prevention of erosion and the maintenance of topsoil on the surface. These aspects are adequately covered in the EMPr and it is therefore considered to be adequate in terms of protecting agricultural resources. No amendments or additions are therefore recommended to the EMPr from an agricultural perspective.

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14 August 2022