

SiVEST

12 Autumn Road, Rivonia, 2128
PO Box 2921, Rivonia, 2128
Gauteng, South Africa



Established 1952

G7 Renewable Energies (Pty) Ltd
5th Floor, 125 Buitengracht Street
Cape Town
8001

Division: Environmental Consulting
Your Reference:
Our Reference: 16580
Date: 04 November 2020

ATTENTION: Veronique Fyfe

Dear Veronique,

VISUAL SPECIALIST COMMENT IN RESPECT OF PROPOSED AMENDMENTS TO THE ENVIRONMENTAL AUTHORISATION FOR THE PROPOSED KUDUSBERG WEF NEAR MATJIESFONTEIN, WESTERN CAPE PROVINCE

1 INTRODUCTION

Kudusberg Wind Farm (Pty) Ltd (hereafter referred to as “Kudusberg Wind Farm”) was issued with an Environmental Authorisation (EA) for the proposed construction of the 325MW Kudusberg Wind Energy Facility (WEF) and associated infrastructure, between Matjiesfontein and Sutherland in the Western and Northern Cape Provinces. The EA was granted on 25 March 2019 (DEFF Reference No.: 14/12/16/3/3/1/1976), and subsequently amended on 04 April 2019 to correct a minor naming error (14/12/16/3/3/1/1976/AM1).

The layout for the authorised Kudusberg WEF is presented in **Figure 1** below

Part of the SiVEST Group SIVEST SA (Pty) Ltd Registration No. 2000/006717/07 t/a SiVEST

South Africa

Durban +27 31 581 1500
East London +27 43 721 2819
Johannesburg +27 11 798 0600
Pietermaritzburg +27 33 347 1600
Pretoria +27 11 798 0600
Richards Bay +27 35 789 2066
info@sivest.co.za
www.sivest.co.za

Mauritius

SIVEST Mauritius
Port Louis +230 212 2215
Daniel Wong Chung Co. Ltd
Curepipe +230 674 5727

United Kingdom

MBM Consulting
London, England +44 0203 817 7691
Tunbridge Wells, England +44 1892 557 290
www.mbmconsult.com



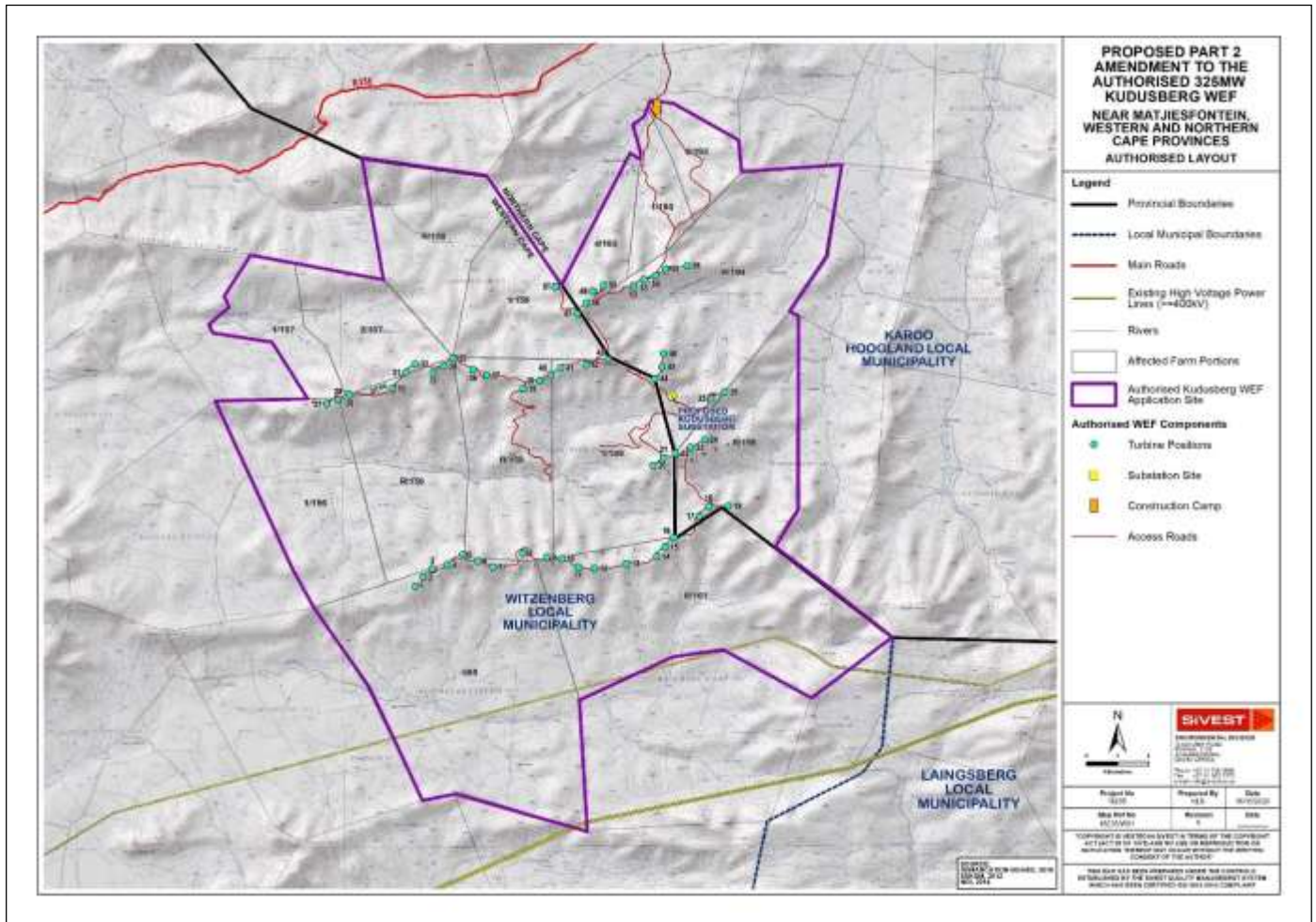


Figure 1: Layout map for authorised Kudusberg WEF (14/12/16/3/3/1/1976/AM1)

Kudusberg Wind Farm is now proposing to submit a Part 2 EA Amendment Application to split the authorised Kudusberg WEF (14/12/16/3/3/1/1976/AM1) into two (2) separate smaller WEF projects, namely the Kudusberg WEF and Oya WEF, which will result in a number of technical and administrative changes detailed below in Table 1. The split is being proposed to allow the projects to be suitable for numerous opportunities such as either the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), Risk Mitigation Independent Power Producer Procurement Programme (RMIPPPP), other government run procurement programmes that may arise or for sale to private entities, if enabled and/or required in the drive for energy security in South Africa.

Following the split, the northern section of the authorised WEF will become the Oya WEF, while the southern section of the authorised WEF will remain known as the Kudusberg WEF (authorised under 14/12/16/3/3/1/1976/AM1) (Table 1). In addition to the split, the final layout for the Oya WEF is being submitted which has been informed by detailed specialist walk-throughs and on site on-site micro-siting as per condition 29 of the Kudusberg EA¹.

The respective layouts for the proposed Kudusberg WEF (southern section of the authorised WEF) and Oya WEF (northern section of the authorised WEF) are presented in **Figure 2** and **Figure 3** below.

¹ Condition 29 of Kudusberg EA [DEFF Ref: [14/12/16/3/3/1/1976/AM1](#) – Page 15 of EA (page 17 of full document)]: *the final placement of turbines must follow a micro siting procedure involving a walk-through and identification of any sensitive areas by ecological, avifaunal, bat, surface water and heritage specialists.*

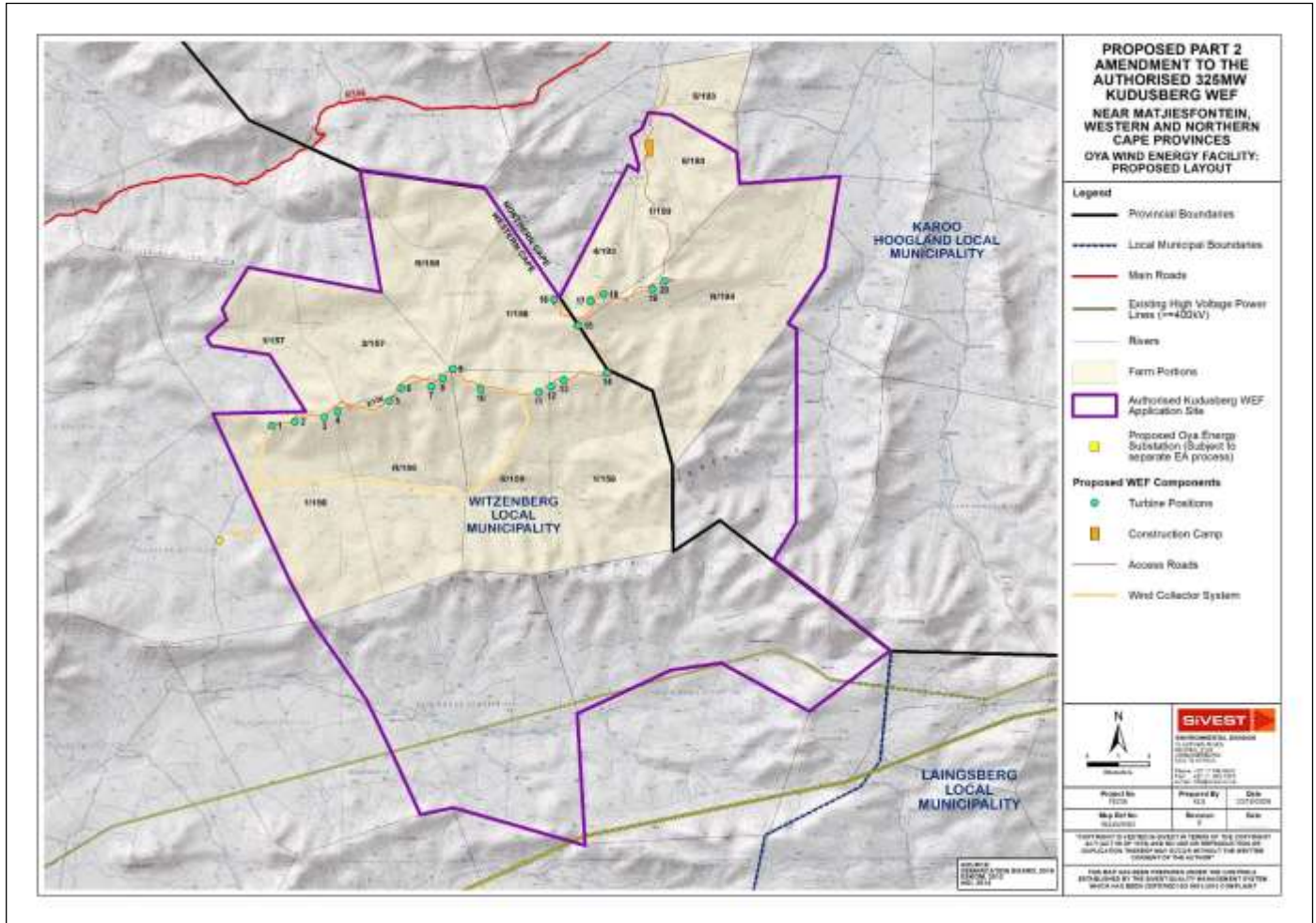


Figure 2: Layout map for proposed Oya WEF (northern section of the authorised WEF)

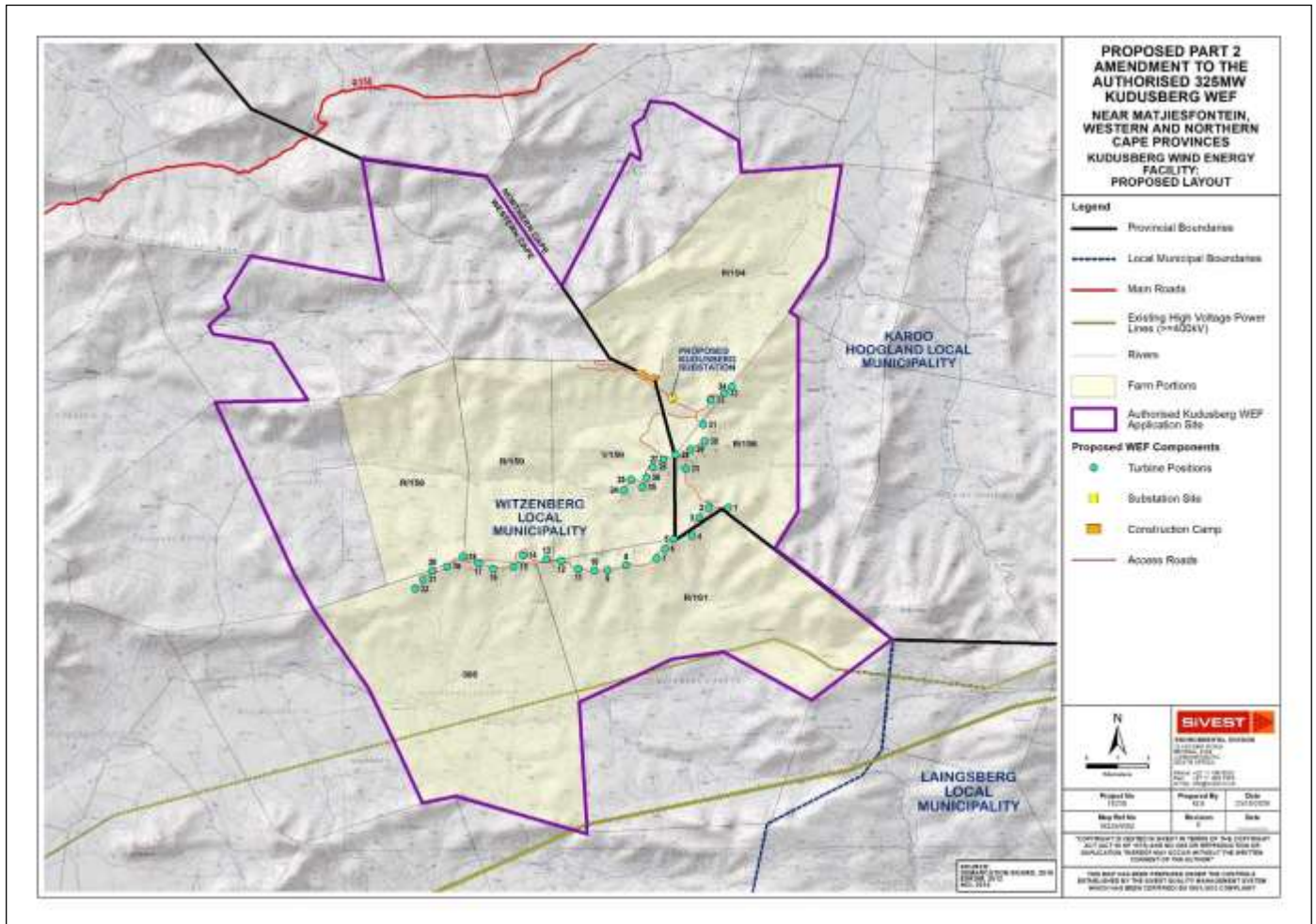


Figure 3: Layout map for proposed Kudusberg WEF (southern section of the authorised WEF)

Furthermore, the approved EMP is authorised as part of the Kudusberg EA is being amended to accommodate each WEF and to incorporate the final layout for the Oya WEF, management plans and the walk-throughs.

The amendments detailed in **Table 1** below are proposed for each of the two (2) WEFs mentioned above.

The Visual Impact Assessment (VIA) for the proposed Kudusberg WEF, undertaken by SiVEST in August 2018, assessed the potential visual impacts of the proposed WEF layout comprising 56 turbines each with a hub height of up to 140m and rotor diameter of up to 180m (i.e. a maximum height of 230m at blade tip). The VIA concluded that the visual impacts identified would not be significant enough to prevent the project from proceeding and that an EA should be granted. It was further stated that the impacts associated with the construction and operation phases of the proposed wind farm could be mitigated to acceptable levels provided that the recommended mitigation measures are implemented. This letter must therefore be read in conjunction with the final VIA report for Kudusberg WEF dated 16 September 2018.

2 PROJECT DESCRIPTION

The following amendments are proposed for each of the two (2) WEF mentioned above:

Table 1: Proposed Amendments

Aspect to be amended	Authorised	Proposed Amendment	
		Oya WEF	Kudusberg WEF
Administrative Aspects			
Amend the holder of the EA's	Kudusberg Wind Farm (Pty) Ltd	Oya Energy (Pty) Ltd	Kudusberg Wind Farm (Pty) Ltd
Amend the name of the WEFs	Kudusberg Wind Energy Facility	Oya Wind Energy Facility	Kudusberg Wind Energy Facility
Contact Details	kudusberg@g7energies.com	oya@g7energies.com	kudusberg@g7energies.com
Extend the validity of the EA	This activity must commence within a period of five (05) years from the date of issue of this environmental authorization.	This activity must commence within a period of five (05) years from the date of issue of this amended environmental authorization.	This activity must commence within a period of five (05) years from the date of issue of this amended environmental authorization.
Location of Activity and SG codes	Western Cape 1. Portion 1 of 156 Gats Rivier Farm: C0190000000015600001 2. Portion 3 of 156 Gats River Farm: C0190000000015600002 3. Remainder of 156 Gats Rivier Farm: C0190000000015600000 4. Portion 1 of 157 Riet Fontein Farm: C0190000000015700001 5. Portion 1 of 158 Amandelbloom Farm: C0190000000015800001 6. Remainder of 158 Amandelboom Farm: C0190000000015800000 7. Portion 1 of 159 Oliviers Berg Farm: C0190000000015900001 8. Remainder of 159 Oliviers Berg Farm: C0190000000015900000 9. Portion 2 of 157 Riet Fontein Farm: C0190000000015700002 10. Remainder of 161 Muishond Rivier Farm: C0190000000016100000	Western Cape 1. Portion 1 of the Farm Gats Rivier No 156: C0190000000015600001 2. Portion 2 of the Farm Gats Rivier No 156: C0190000000015600002 3. Remainder of the Farm Gats Rivier No 156: C0190000000015600000 4. Portion 1 of the Farm Riet Fontein No 157: C0190000000015700001 5. Portion 2 of the Farm Riet Fontein No 157: C0190000000015700002 6. Portion 1 of the Farm Amandelbloom No 158: C0190000000015800001 7. Remainder of the Farm Amandelboom No 158: C0190000000015800000 8. Portion 1 of the Farm Oliviers Berg No 159: C0190000000015900001 9. Remainder of the Farm Oliviers Berg No 159: C0190000000015900000 Northern Cape	Western Cape 1. Portion 1 of the Farm Gats Rivier No 156: C0190000000015600001 2. Remainder of the Farm Gats Rivier No 156: C0190000000015600000 3. Portion 1 of the Farm Oliviers Berg No 159; C0190000000015900001 4. Remainder of the Farm Oliviers Berg No 159: C0190000000015900000 5. Klipbanks Fontein No 395: C0190000000039500000 6. Remainder of the Farm Muishond Rivier No 159: C0190000000016100000 Northern Cape 7. Remainder of the Farm Karee Kloof No 196: C0720000000019600000 8. Remainder of the Farm Matjes Fontein No 194: C0720000000019400000 Properties affected by public road: 9. Zeekoegat Farm No 169: C0720000000016900000

Part of the SIVEST Group SIVEST SA (Pty) Ltd Registration No. 2000/006717/07 t/a SIVEST

South Africa

Durban +27 31 581 1500
 East London +27 43 721 2819
 Johannesburg +27 11 798 0600
 Pietermaritzburg +27 33 347 1600
 Pretoria +27 11 798 0600
 Richards Bay +27 35 789 2066
info@sivest.co.za
www.sivest.co.za

Mauritius

SIVEST Mauritius
 Port Louis +230 212 2215
Daniel Wong Chung Co. Ltd
 Curepipe +230 674 5727

United Kingdom

MBM Consulting
 London, England +44 0203 817 7691
 Tunbridge Wells, England +44 1892 557 290
www.mbmconsult.com

Aspect to be amended	Authorised	Proposed Amendment	
		Oya WEF	Kudusberg WEF
	11. Remainder of 395 Klipbanks Fontein Farm: C01900000000019500000 Northern Cape 12. Portion 4 of 193 Urias Gat Farm: C07200000000019300004 13. Portion 6 of 193 Urias Gat Farm: C07200000000019300006 14. Remainder of 193 Urias Gat Farm: C07200000000019300000 15. Remainder of 194 Matjes Fontein Farm: C07200000000019400000 16. Remainder of 196 Karree Kloof Farm: C07200000000019600000 Properties affected by public road: 17. 169 Zeekoegat Farm: C07200000000016900000 18. Portion 1 of 170 Roodeheuveld Farm: C07200000000017000001 19. Remainder of 170 Roodeheuveld Farm: C07200000000017000000 20. Remainder of 190 Wind Heuveld Farm: C07200000000019000000 21. Portion 1 of 190 Wind Heuveld Farm: C07200000000019000001 22. Portion 5 of 193 Urias Gat Farm: C07200000000019300005 23. Remainder of 171 Vinke Kuil Farm: C07200000000017100000 24. Alkant Re/220 Farm: C07200000000022000000 25. Portion 1 of 174 Lange Huis Farm: C07200000000017400001	10. Portion 4 of the Farm Urias Gat No 193: C07200000000019300004 11. Portion 6 of the Farm Urias Gat No 193: C07200000000019300006 12. Remainder of the Farm Urias Gat No 193: C07200000000019300000 13. Remainder of the Farm Matjes Fontein No 194: C07200000000019400000 14. Portion 5 of the Farm Urias Gat No 193: C07200000000019300005 Properties affected by access road: 15. Zeekoegat Farm No 169: C07200000000016900000 16. Portion 1 of the Farm Roodeheuveld No 170: C07200000000017000001 17. Remainder of the Farm Roodeheuveld No 170: C07200000000017000000 18. Remainder of the Farm Wind Heuveld No 190: C07200000000019000000 19. Portion 1 of the Farm Wind Heuveld No 190: C07200000000019000001 20. Portion 5 of the Farm Urias Gat No 193: C07200000000019300005 21. Remainder of the Farm Vinke Kuil No 171: C07200000000017100000 22. Alkant Farm No 220: C07200000000022000000 23. Portion 1 of the Farm Lange Huis No 174: C07200000000017400001	10. Portion 1 of the Farm Roodeheuveld No 170: C07200000000017000001 11. Remainder of the Farm Roodeheuveld No 170: C07200000000017000000 12. Remainder of the Farm Wind Heuveld No 190: C07200000000019000000 13. Portion 1 of the Farm Wind Heuveld No 190: C07200000000019000001 14. Portion 5 of the Farm Urias Gat No 193: C07200000000019300005 15. Remainder of the Farm Vinke Kuil No 171: C07200000000017100000 16. The Farm Alkant No 220: C07200000000022000000 17. Portion 1 of the Farm Lange Huis No 174: C07200000000017400001
Technical Aspects			
Overall Capacity	325 MW	86 MW	239 MW
Number of turbines	56	20	36
Hub height	Up to 140 m	92 m above the foundation	No Change i.e. up to 140 m
Rotor diameter	Up to 180 m	150 m	No Change i.e. up to 180 m
Blade length	Up to 90 m	75 m	No Change i.e. up to 90 m
Wind Measuring Lattice Masts	Up to 4 x 140 m high depending the final hub height	2 x met masts (same as hub height)	2 x up to 140 m high depending the final hub height
Layout	-	Layout submitted for final approval.	Final layout to be submitted prior to the start of construction
EMPr	The EMPr submitted as part of the Application for EA is hereby approved.	Approve Final EMPr	To be submitted based on final approval of layout

3 SPECIALIST COMMENT

It is understood that the proposed amendment essentially involves the split of the authorised Kudusberg WEF into two separate WEFs, namely Kudusberg WEF and Oya WEF. The amendments include minor changes to the authorised road and turbine layouts, a slight shift in the position of the authorised construction camp and the provision of a new construction camp site to serve the smaller Kudusberg WEF. In addition, although the turbine dimensions remain unchanged for the Kudusberg WEF (the southern section of the authorised WEF), Kudusberg Wind Farm are proposing to make use of smaller turbines for the Oya WEF (northern section of the authorised WEF). The turbine dimensions proposed for this WEF will have a hub height of 92m and a rotor diameter of 150m (i.e. a maximum height of 167m at blade tip), Notwithstanding these changes, the overall development footprint is largely unchanged and the number of turbines remains the same. Hence, these proposed amendments are being assessed against the findings of the original VIA.

3.1 Visual Character

The VIA for Kudusberg WEF identified the visual character of the broader study area as being largely natural and untransformed, but with pastoral elements and low densities of human settlement. As such, WEF development would alter the visual character and contrast significantly with the typical land use and/or pattern and form of human elements present across the broader study area.

The amendments to the Kudusberg WEF as proposed will not result in any additional impacts on the visual character of the broader study area.

3.2 Cultural Landscapes

The VIA determined that much of the study area represents a typical Karoo cultural landscape. This is important in the context of potential visual impacts associated with the development of a WEF and associated infrastructure as introducing this type of development could be considered to be a degrading factor in the context of the natural Karoo character of the study area. In this instance visual impacts on the cultural landscape would be reduced by the fact that the area is relatively remote and there are very few tourism or nature-based facilities in the study area.

The amendments to the Kudusberg WEF as proposed will not result in any additional impacts on the cultural landscape in the study broader area.

3.3 Visual Sensitivity

Due to the largely natural character of the area, visual sensitivity of the broader study area is rated as moderate. An important factor contributing to the visual sensitivity of an area however is the presence or absence of visual receptors that may value the aesthetic quality of the landscape and depend on it to produce revenue and create jobs. No formal protected areas, leisure-based tourism activities or sensitive receptor locations were identified in the study area and relatively few potentially sensitive receptors were found to be present.

Using GIS-based visibility analysis, it was possible to determine which sectors of the WEF development site would be visible to the highest numbers of receptor locations in the study area. This analysis took into account all the sensitive and potentially sensitive receptor locations identified in the VIA. Based on this analysis, the areas visible to the highest number of receptor locations were initially rated as areas of 'High Sensitivity'. However, as the study area as a whole is rated as having a moderate visual sensitivity, these areas of high sensitivity are not considered to be no-go areas, but rather should be viewed as zones where the number of turbines should be limited, where possible, as the turbines will still be highly visible. These areas of visual sensitivity were taken into account in the final turbine layout for the Kudusberg WEF.

The amended layouts for the Kudusberg WEF and the Oya WEF have taken cognisance of the areas of visual sensitivity identified in the original VIA. Furthermore, the smaller turbines proposed for the Oya WEF will be less visible

from the surrounding area, thus reducing the visual sensitivity of the Oya WEF site. As such, the proposed amendments will not result in any changes in the findings of the visual sensitivity analysis.

3.4 Potentially Sensitive Receptors

It is important to note that visual impacts are only experienced when there are receptors present to experience this impact. The original VIA for this development found that the broader study area is not typically valued for its tourism significance and there is limited human habitation resulting in relatively few potentially sensitive receptors in the area.

A total number of twenty-six (26) potentially sensitive receptor locations were identified within in the study area for the Kudusberg WEF layout. Two of these receptor locations were considered to be sensitive receptors, these being tourism / accommodation facilities at the Gats Rivier Holiday Farm and Baakens Rivier. It was however established that Bakensriver comprises accommodation facilities that are part of the Gatsrivier Holiday Farm facility, even though these facilities are located on a different farm some distance from the main Gatsrivier farm. Baakens Rivier is in fact located on the Kudusberg WEF development site and it is known that the owner of these facilities has consented to the proposed WEF development. As such these receptors were excluded as a sensitive or potentially sensitive receptors.

The remaining twenty-four (24) receptors are however farmsteads which are regarded as *potentially* sensitive visual receptors as they are located within a mostly rural setting and the proposed development will likely alter natural vistas experienced from these locations. It should be noted that the BA Public Participation Process (PPP) for the Kudusberg WEF project did not bring to light any negative sentiments towards the proposed development on the part of local residents.

According to the receptor impact rating matrix in the VIA report, only one (1) of the potentially sensitive receptors would experience high levels of visual impact as a result of the proposed Kudusberg WEF development. As this receptor is located on the Kudusberg WEF development site, it was assumed that the owner of this receptor has a vested interest in the development and as such would not perceive the WEF in a negative light. The remaining twenty-three (23) are expected to experience only moderate levels of visual impact as a result of the proposed Kudusberg WEF.

The amended turbine layouts will only affect one potentially sensitive receptor, this being VR13. The proximity of the nearest turbine to this receptor increases the impact rating for this receptor from Moderate to High. As this receptor is located on the Kudusberg WEF development site however, it is assumed that the owner of this receptor has a vested interest in the development and as such would not perceive the WEF in a negative light.

3.5 Cumulative Impacts

Several renewable energy developments and infrastructure projects, either proposed or in operation, were identified within a 50km radius of the Kudusberg WEF application site. It was determined that the relatively large number of renewable energy facilities within the surrounding area and their potential for large scale visual impacts could significantly alter the sense of place and visual character in the study area, as well as exacerbate the visual impacts on surrounding visual receptors. It is however anticipated that these impacts could be mitigated to acceptable levels with the implementation of the recommendations and mitigation measures put forward by the visual specialists in their respective reports. It was concluded that cumulative visual impacts of the proposed WEF in addition to the other renewable energy developments (including associated infrastructure) proposed nearby would have a moderate negative visual impact rating during both construction and operation, with relatively few mitigation measures available.

It was also noted in the VIA that the study area for the proposed Kudusberg is located within the Renewable Energy Development Zone 2 (REDZ 2) known as Komsberg, and thus the concentration of renewable energy developments is supported in this area. In addition, it is possible that the proposed WEFs in close proximity to each other could be seen as one large WEF rather than separate developments. Although this will not necessarily reduce impacts on the visual character of the area, it could potentially reduce the cumulative impacts on the landscape.

The amendments to the Kudusberg WEF as proposed will not result in any additional cumulative impacts in the surrounding area.

3.6 Overall Visual Impact Rating

The overall impact rating conducted for the proposed Kudusberg WEF indicated that impacts associated with the proposed WEF and associated infrastructure will be of (negative) moderate significance during both construction and operation, with relatively few mitigation measures available to reduce the visual impact.

The amendments to the Kudusberg WEF as proposed will not result in any additional cumulative impacts in the surrounding area.

3.7 Assessment of Alternatives

A comparative assessment of alternatives for the proposed access road, construction camp and substation site was undertaken in order to determine which of the alternatives would be preferred from a visual perspective. No fatal flaws were identified for any of the route, construction camp or substation site alternatives. All the route and substation site alternatives were deemed as favourable, as were construction camp alternatives 2 and 3. Construction camp alternative 1 was however seen as the least preferred option.

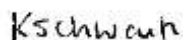
The proposed changes to the authorised road and turbine layouts, the position of the authorised construction camp and the provision of a new construction camp site to serve the smaller Kudusberg WEF are all considered acceptable from a visual perspective.

In addition, the proposed Oya WEF layout, including the turbine positions and construction camp site, is considered acceptable from a visual impact perspective and should be authorised as final. The proposed mitigation measures identified in the original Kudusberg WEF VIA are still valid for the Oya WEF and no additional recommendations or mitigation measures will be required.

4 CONCLUSION

It is SiVEST's opinion that the proposed amendments to the authorised Kudusberg WEF (14/12/16/3/3/1/1976/AM1) to split the WEF into two (2) separate smaller WEF projects, namely the Kudusberg WEF and Oya WEF, do not give rise to additional visual impacts or exacerbate the impacts previously identified in the VIA for this development. Given the low level of human habitation and the relative absence of sensitive receptors in the area, the proposed changes to the road and turbine layouts, the proposed reduction in turbine dimensions for Oya WEF, the shift in the position of the authorised construction camp and the provision of a new construction camp site to serve the smaller Kudusberg WEF are deemed acceptable from a visual perspective and the Environmental Authorisation (EA) should be amended. SiVEST is of the opinion that the impacts associated with the construction, operation and decommissioning phases can be mitigated to acceptable levels provided the recommended mitigation measures are implemented. No additional recommendations or mitigation measures will be required and all of the proposed mitigation measures identified in the original VIA are still valid for the two new WEF projects.

Yours sincerely,



Kerry Schwartz

Visual Specialist

SiVEST Environmental