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29 November 2022

Environmental Authorisation (EA) amendment statement on the proposed amendments of the Mulilo De Aar 2 South Wind Energy Facility (WEF), in relation to impacts on bats.

1 Introduction

Mulilo Renewable Energy (Pty) Ltd (later updated to Mulilo De Aar 2 South (Pty) Ltd, i.e. the current holder of the Environmental Authorisation) applied for Environmental Authorisation from the Department of Environmental Affairs (DEA) in 2011 to establish a Wind Energy Facility (WEF) and associated infrastructure on the eastern plateau of De Aar (approximately 20 km to the east of the town). The EIA process for the proposed project was undertaken by Aurecon South Africa (Pty) Ltd in 2012 and Environmental Authorisation for the proposed project was granted by DEA on 1 March 2013. Furthermore, on 24 July 2014, a further environmental authorisation for the project was granted in respect of Items 13 and 16 of GN 546 by the Northern Cape Department of Environment and Nature Conservation (DENC) for activities that had not been applied for in the original EIA for the project.

The original EA for the project authorised 103 wind turbines with a potential capacity of 155 – 258MW and associated infrastructure. Eight amendments to the DEA (now DFFE) EA have been applied for by the Applicant, and granted by DFFE, in 2013, 2014, 2016, 2018, 2019, 2020 and 2021 respectively, including a change in the name of the holder of the EA, extensions of the EA validity period, amendments to Conditions of the EA, amendments to the project description and amendments to the turbine specifications. **The currently authorised project description includes 25 – 61 turbines and associated infrastructure, each turbine with a hub height of 120m and rotor diameter of 165m**.

Animalia Consultants (Pty) Ltd) completed the 12 months pre-construction bat monitoring for the Mulilo De Aar 2 South (WEF) in 2014, and was also involved in subsequent amendments. It included the assessments of impacts as required for the EIA phase. The receiving environment is described in the original preconstruction bat monitoring EIA by Animalia Consultants in 2014. The only change in the broader area since 2014, is the addition of the De Aar 2 North WEF and other wind farms. This is discussed in the cumulative impact section of the EMPr and Layout Update report (dated 10 November 2022), and the site sensitivity has been verified against the screening tool in Appendix A. However there has been no significant change to the ecological environment, from a bat fauna perspective.

The latest preconstruction guidelines and sensitivity mapping rules have been applied to the proposed final turbine layout, and the layout respects the bat sensitivity map. Updated mitigation measures to be

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included into the EMPr have been provided in the EMPr and Layout Update report compiled by Animalia, and replace all previously recommended mitigation measures for bats.

The Applicant is currently applying for an amendment to the current EA, to **reduce** the number of turbines to a maximum of 26 turbines, utilising 28 possible positions within an updated layout (that is currently being subjected to a separate layout update and EMPr approval process). The proposed amendments include adding the words "up to" in front of the authorised turbine specifications for hub height and rotor diameter to allow for smaller turbines to be installed, if required, due to suppliers. Associated infrastructure that are also proposed to be amended includes hardstands, internal roads, foundations, IPP substation, control and O&M buildings, temporary laydown areas and internal reticulation, and removal of the MW designation per turbine. These amendments to the associated infrastructure do not have a significant bearing on the predicted impacts on bats. The current EA expires 01 March 2023 and the Applicant wishes to extend this by 2 years, to 01 March 2025. Additionally, the Applicant wishes to include an erroneously omitted Listed Activity, i.e. activity 15 of GN R. 545 (Listing Notice 2) (which relates to the physical alteration and transformation 20ha or more), and farm portion (Portion 7 of Farm Vendussie Kuil No. 165) into the EA. The physical alteration of more than 20ha of the land was assessed in detail as part of the 2012 EIA process and subsequent Part 2 EA amendment process in 2015 for the project. Portion 7 of Farm Vendussie Kuil No. 165 was included and assessed in the combined EIA process and reporting for the De Aar 2 South WEF and De Aar 2 North WEF in 2012- 2013, and was included in the Final Layout that was recently assessed (2022) for the update of the EMPr and Final Layout Plan process that is currently in progress.

2 Cumulative impact

Only three wind energy facilities (WEF's) are applicable to the cumulative impacts on bats for the De Aar 2 South WEF, namely the Castle WEF, De Aar 2 North WEF and another WEF approved near De Aar (Table 1 and Figure 1). The solar renewable energy developments are not expected to have significant cumulative impacts on bats within the area.

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Table 1: List of renewable energy projects within 30km of the De Aar 2 South WEF, only wind energy facilities (WEF's) are considered for impacts on bats.

Project name	Reference number	Type	Status
Proposed Castle wind energy facility project, located near De Aar, Northern Cape Province	14/12/16/3/3/2/278	WEF	Approved (Note: "in process" according to DFFE REEA 2022 Q2)
Longyuan Mulilo De Aar 2 North Wind Energy Facility	12/12/20/2463/2	WEF	Approved (Operational)
Proposed establishment of a wind power generating facility near De Aar, Northern Cape.	12/12/20/1651	WEF	Approved
Proposed PV facility on farm Jakhalsfontein near De Aar	14/12/16/3/3/2/744	Solar	In process
The Proposed Construction Of A Solar Energy Facility in The Emthanjeni Local Municipality In The Northern Cape Province	12/12/20/2250	Solar	Approved
Proposed PV facility on farm Caroluspoort near De Aar	14/12/16/3/3/2/741	Solar	In process
Proposed Solar Power Generation Facility in the remaining extent of the farm Vetlaagte 4, De Aar, Northern Cape Province	14/12/16/3/3/2/382/1	Solar	Approved
The Photovoltaic (Pv) Solar Energy Facility On The Farm Annex Du Plessis Dam (Pv4) Near De Aar Within The Emthanjeni Local Municipality, Northern Cape Province	12/12/20/2498	Solar	Approved
Proposed Inca De Aar Solar Pty Ltd 30 MW	12/12/20/2177	Solar	Approved

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Photovoltaic Solar Facility On A Site South-East Of De Aar, Northern Cape Province			
The Proposed Construction Of Ilanga Lethemba Pv Solar Energy Facility In De Aar, Northern Cape Province	12/12/20/2048/1	Solar	Approved
The Construction Of A Photovoltaic (Pv) Plant On Portion 29 Of The Farm Paarde 145, De Aar Within Emthanjeni Local Municipality, Northern Cape Province	12/12/20/2025	Solar	Approved
Proposed photovoltaic power generation facility near De Aar, Northern Cape	12/12/20/1673	Solar	Approved
Proposed PV facility on farm Blaauwkratz near De Aar	14/12/16/3/3/2/742	Solar	In process
Proposed PV facility on farm Loskop near De Aar	14/12/16/3/3/2/743	Solar	In process
Proposed 300MW Solar Power Plant in Phillipstown area in Renosterberg Local Municipality	14/12/16/3/3/2/740	Solar	Approved
The Proposed Establishment of Photovoltaic (Solar Power) Farms in The Northern Cape Province	12/12/20/2258/4	Solar	Approved
The Proposed Establishment of an 86mw Solar Facility on Portion 4 of the Farm Riet Fountain No. 6 in the Emthanjeni Local Municipality, Northern Cape Province	14/12/16/3/3/2/663	Solar	Approved

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Proposed photovoltaic Solar energy facility (PV2) on Badenhost Dam Farm near De Aar in the Northern Cape Province	14/12/16/3/3/2/504	Solar	In process
The Proposed Photovoltaic (Solar) Energy Facilities On Du Plessis Dam Farm Near De Aar, Emthanjeni Local Municipality, Northern Cape Province.	14/12/16/3/3/2/456	Solar	In process
The Construction of A 75-150mw Photovoltaic Solar Energy Facility And Associated Infrastructure On Paarde Valley Farm Near De Aar Within The Emthanjeni Local Municipality, Northern Cape Province	12/12/20/2500	Solar	Approved

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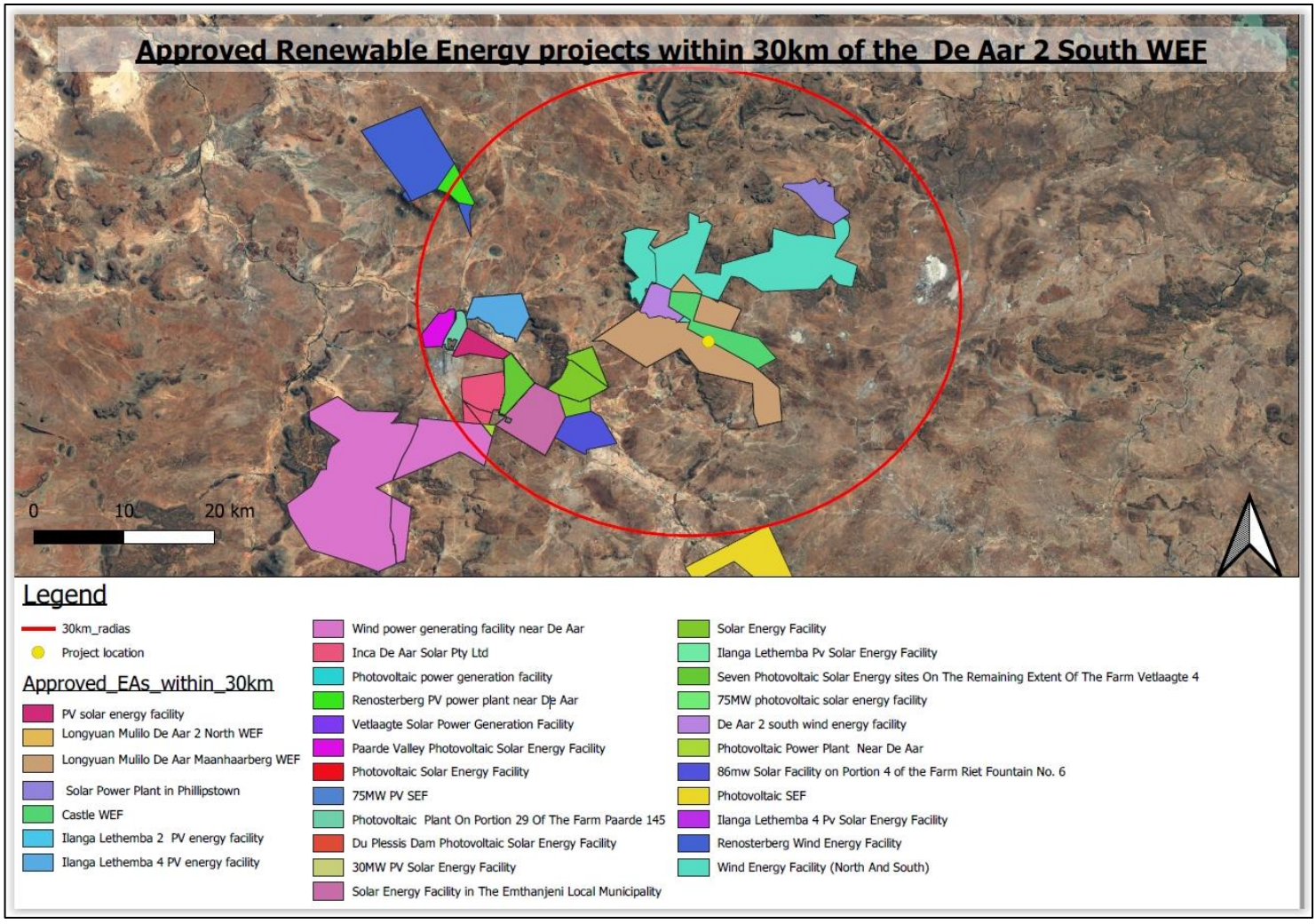

Figure 4.2. The De Aar 2 South WEF' in relation to renewable energy facilities within a 30km radius (red circle).

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The proposed amendment will not result in an increased level of cumulative impact to what was previously assessed, considering the original assessment has proposed 103 turbines, then reduced to a maximum of 61 turbines in 2016, and currently a maximum of 26 turbines are being proposed. The predicted cumulative impacts are therefore acceptable. During operation the following cumulative impacts are applicable:

Impact 1: Bat mortalities during foraging

Bat mortalities over long periods of time can negatively impact species genetic diversity in a population. If this occurs over a larger area of several wind farms, it decreases the chances of bat populations recovering to a prior state. Bats play an important role in controlling insect numbers, certain species of insects may increase in numbers over a larger area if bats are negatively impacted.

Impact 2: Bat mortalities during migration

Bat mortalities over long periods of time can negatively impact species genetic diversity in a population. If this occurs over a larger area of several wind farms, it decreases the chances of bat populations recovering to a prior state. Bats play an important role in controlling insect numbers, certain species of insects may increase in numbers over a larger area if bats are negatively impacted. For migrating bats the area of influence are dependent on the migration routes, and may therefore involve WEF's not in the immediate larger area.

Impact 3: Increased bat mortalities due to light attraction and habitat creation

Floodlights and other lights at turbine bases or nearby buildings, will attract insect eating bats and therefore significantly increase the likelihood of these bats being impacted on by moving turbine blades. Habitat creation in the roofs of nearby buildings can cause a similar increased risk factor. Considering several WEF's, the overall mortality rate will be significantly higher with an increased likelihood of impact.

3 Conclusion

The proposed amendment of reducing the turbine numbers, can reduce the likelihood of impacts on bats. However, more recent insights into the impacts of wind energy on bats resulted in updated bat sensitivity mapping guidelines. Therefore, during the update of the EMPr and Layout Plan Finalisation Process (which is occurring separately to this EA amendment process) the bat sensitivity map and sensitivity mapping rules are being updated, to inform the final turbine layout, and newer approaches on mitigation measures

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have been recommended and included in the updated EMPr (as part of the update of the EMPr and Layout Plan Finalisation Process).

In terms of the proposed extension of the validity period of the EA, there have been no significant changes to the receiving environment since the previous assessments, and the potential impacts of the proposed project on bats is well understood (particularly given the recent specialist inputs provided by Animalia Consultants (Pty) Ltd for the update of the EMPr and Layout Plan finalisation process for the project in 2022). The proposed extension of the validity period, would not result in an increased level or change in the nature of impacts on bats, and is considered to be acceptable.

In conclusion, the impacts on bats as assessed during the EIA and previous amendment phases, remains unchanged, and the proposed amendments to the EA (described above) will not result in an increased level or change in the nature of cumulative and non-cumulative impacts on bats, and Animalia has no objection to the proposed amendments from a bat sensitivity perspective.

If there are any queries, please do not hesitate to contact me.

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4 APPENDIX A: SITE SENSITIVITY VERIFICATION

SITE SENSITIVITY VERIFICATION (IN TERMS OF PART A OF THE ASSESSMENT PROTOCOLS PUBLISHED IN GN 320 ON 20 MARCH 2020

4.1 Site sensitivity verification methodology

The methodology for the Specialist Site Sensitivity Verification process identifies bat species that may be impacted by wind turbines by taking into account the following features: the amount of surface rock (possible roosting space), topography (influencing surface rock in most cases), vegetation (possible roosting spaces and foraging sites), climate (can influence insect numbers and availability of fruit), and presence of surface water (influences insects and acts as a source of drinking water). These comparisons were done by briefly studying the geographic literature and available satellite imagery for the site and by ground truthing with site visits. Species probability of occurrence based on the above-mentioned factors were estimated for the site and the surrounding larger area, but also considers species historically confirmed on site as well as surrounding areas.

Multiple site visits have been carried out during the 12-month preconstruction EIA bat monitoring and subsequent amendments, to ground truth bat sensitivity features and habitats delineated in the bat sensitivity constraints map supplied in the EMPr and Layout Update report.

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4.2 Outcome of site sensitivity verification

The bat sensitivity map produced by the Specialist (**Figure 3**), based on the methodology described above, share similarities to the Screening Tool sensitives (**Figure 2**) with regards to the identification of several water courses and open water sources as high sensitivity areas. However, additional watercourses and exposed rocky cliff faces have been identified as additional high sensitivities by the Specialist.

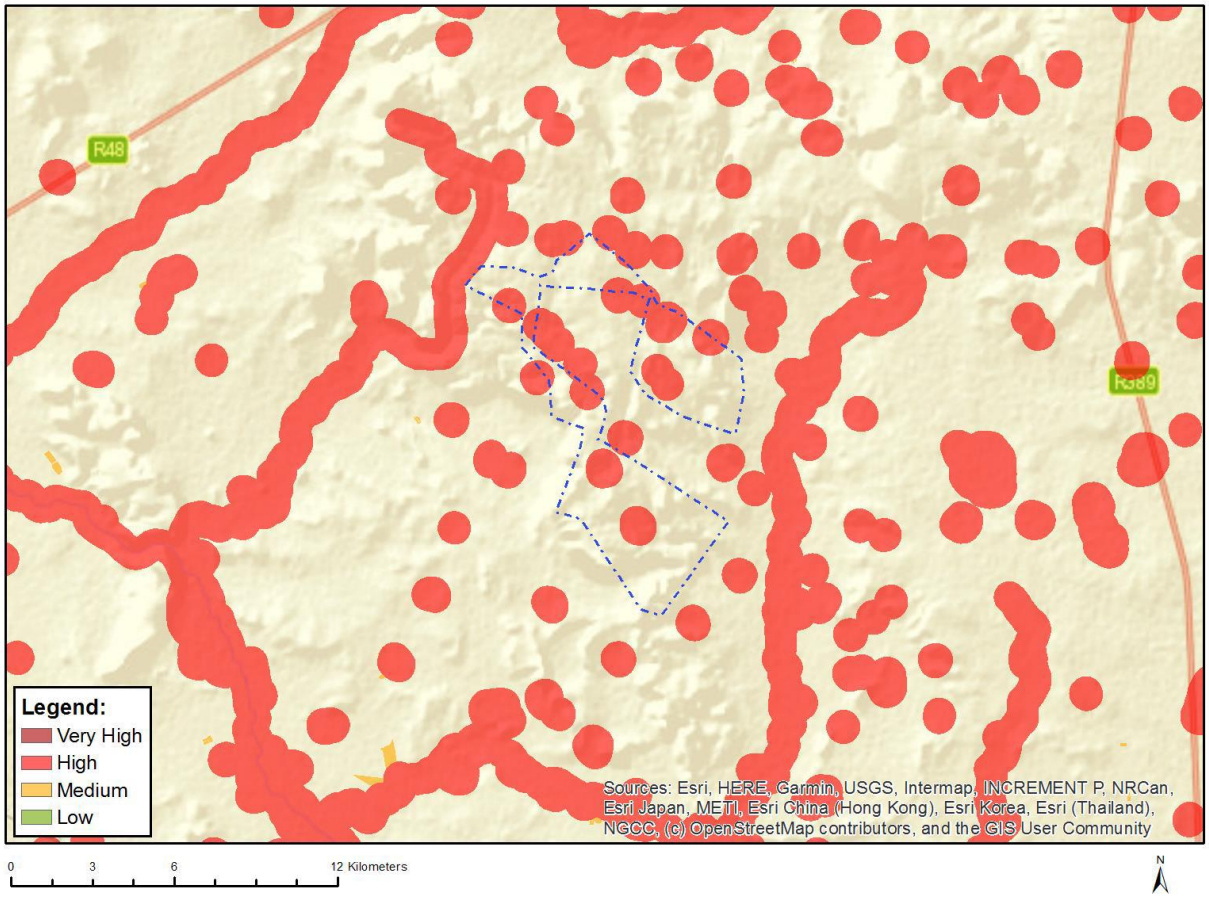

Figure 2: National Screening Tool bat sensitivity map.

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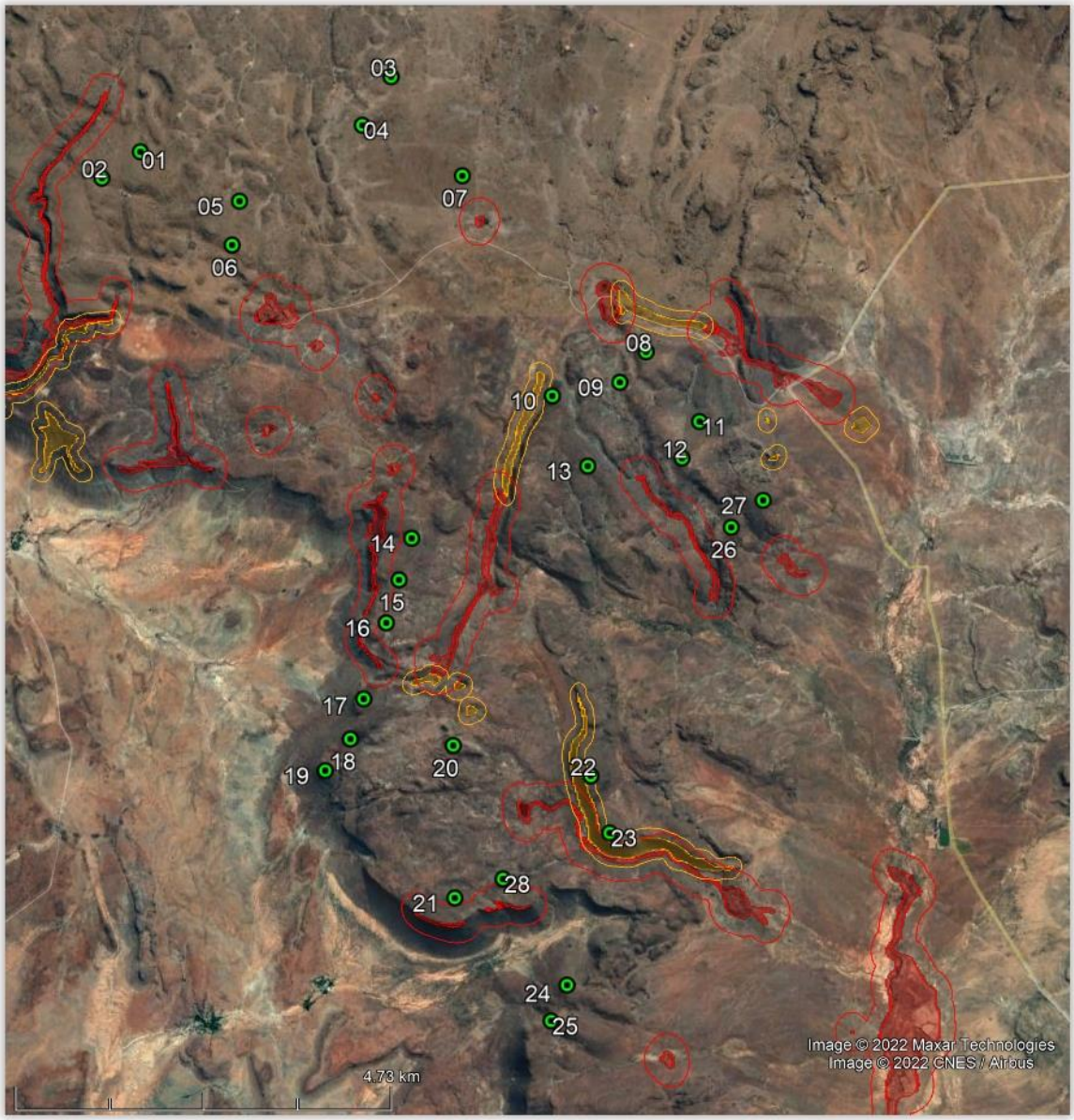

Figure 3: Specialist produced bat revised sensitivity map in relation to the proposed turbine layout. Shaded red = High bat sensitivity; Red line = 200m High bat sensitivity buffer; Shaded orange = Moderate bat sensitivity; Orange line = 100m Moderate bat sensitivity buffer.

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5 APPENDIX B: BLADE PAINTING STATEMENT LETTER

29 August 2022

Bat specialist opinion on bird mitigation method of painting turbine blades, at the Mulilo De Aar 2 South Wind Energy Facility (WEF).

The avifaunal bird specialist has recommended that "All turbines must have one blade painted in signal red according to pattern no.4 depicted in Figure 1", as opposed to the turbine blades all being white. Applicable to the turbines at the Mulilo De Aar 2 South WEF developed by Mulilo De Aar 2 South (Pty) Ltd.

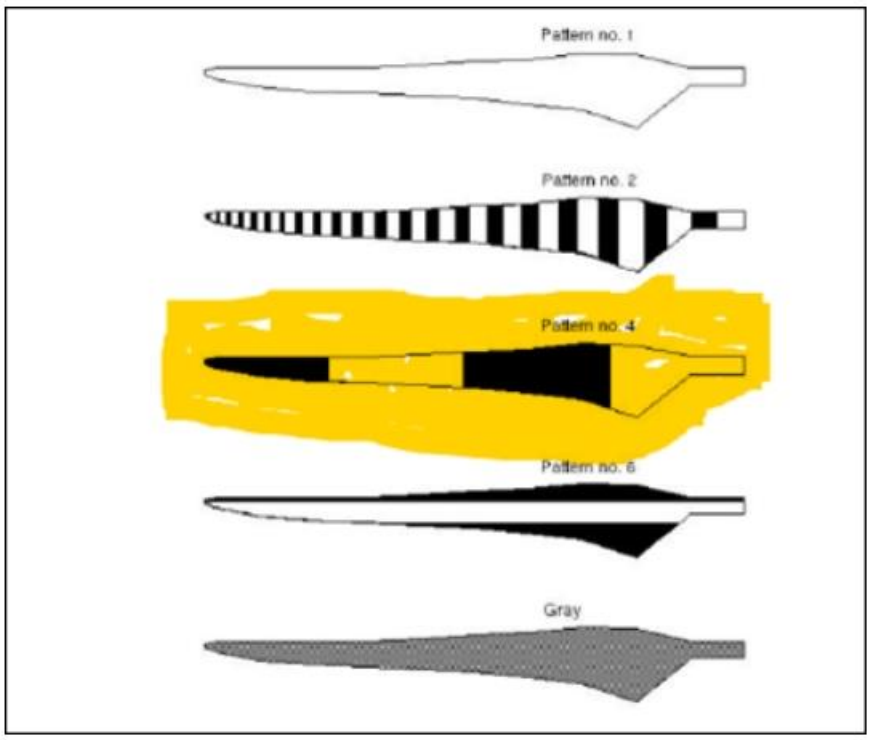

Figure 1: The proposed pattern of blade painting recommended by the bird specialist (Pattern no. 4).

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To the best current knowledge of Animalia Consultants (Pty) Ltd, the proposed mitigation of blade painting will have no effect on bats. The red will appear darker at night and reflect less moonlight, which can possibly cause the blade to appear broken up and can also camouflage the blade tip. But there is no evidence yet of this causing a significant negative impact on bats, however the positive effects it can have for bird impact mitigation is known and supported. The WEF must undergo operational bat mortality monitoring to determine the impacts on bats and ensure that the bat mortalities are within acceptable sustainable thresholds. And mitigations applied if bat mortalities are above sustainable thresholds.

In conclusion, Animalia has no objection to the proposed avifaunal bird mitigation of blade painting, from a bat sensitivity perspective.

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