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Date: 10 September 2020
Ref: Khangela WEF Change

Aurecon South Africa (Pty) Ltd
Aurecon Centre
1 Century City Drive
Century City
7441

Attention: Ms. Franci Gresse

Dear Madam

SPECIALIST STUDY: NOISE IMPACT ASSESSMENT: PROPOSED AMENDMENT – PHASE 2 OF THE UMSINDE EMOYENI WIND ENERGY FACILITY: CHANGE OF WIND TURBINE LAYOUT AND SPECIFICATIONS

The above-mentioned issue as well as report AC-UEWEF/ENIA/201508-Rev 0 (dated September 2015) is of relevance.

I conducted an Environmental Noise Impact Assessment (ENIA) during 2015 for the proposed phase 2 of the Umsinde Emoyeni Wind Energy Facility (WEF). This phase of the WEF has been renamed to the Khangela Emoyeni Wind Energy Facility.

The ENIA considered 2 layout alternatives (175 and 225MW layout), illustrated in **Figure 1** and **2**. With the input data as used, this assessment indicated that the proposed project will have a noise impact of a **low significance** on all identified Noise Sensitive Developments (NSDs) in the area during both the construction and operational phases (very low for the 175 MW layout, low for the 225 MW layout). This assessment used the sound power emission levels of the Vestas V117 3.3 MW wind turbine with a maximum sound power level of 107.0 dBA.

Due to the low significance, mitigation was not required for the construction or operational phases, however, generic construction mitigation measures were included for the developer to consider to ensure that any potential noise impacts are minimized. These findings remained the same when the applicant reduced the number of turbines for Khangela Emoyeni WEF (then Phase 2) to 35 in 2018 which was layout that was authorised by the Department of Environmental Affairs. Note that this layout was not modelled and therefore the point of reference is the original 2015 study.

The developer of the Khangela Emoyeni WEF has since optimized the layout (proposed new layout superimposed on the previous layouts in **Figure 1** and **2**) of the facility, locating the wind turbines at optimal locations and changing the Wind Turbine Generators (WTGs) specifications by:

- Increasing the turbine generation capacity up to 10 MW;
- Increasing the hub height (from ground level) up to 160 m; and,
- Increasing the rotor diameter up to 180 m.

The export capacity will be 147 MW and larger WTGs will allow a reduction in the total number of WTGs, limiting the maximum number of WTGs to 33. The new layout also relocates the WTGs on average further from receptors.

It should be noted that the change in wind turbine specifications such as the wind turbine hub height and rotor diameter does not relate to sound power emission levels, which depends on the model and make of a wind turbine. For the same model and make, a change in specifications such as hub-height and rotor diameter have an insignificant impact on sound power emission levels. Therefore, there is no advantage or disadvantage in terms of acoustics by changing the wind turbine specifications such as turbine hub height as well as rotor diameter. By changing the wind turbine model and make to a wind turbine with a lower sound power emission levels however will have a significant advantage on acoustics (reduced noise emissions).

The wind energy market is fast changing and adapting to new technologies as well as site specific constraints. Optimizing the technical specifications can add value through, for example, minimizing environmental impact and maximizing energy yield. As such the developer has been evaluating several turbine models, however the selection will only be finalized at a later stage once the most optimal wind turbine is identified (factors such as meteorological data, price and financing options, guarantees and maintenance costs, etc. must be considered). As such the developer cannot commit to a specific wind turbine model, but, it should be noted that the previous noise impact assessments did consider a worst-case scenario, using a wind turbine that have a very high noise emission level.

The proposed layout locates the WTGs further than 1,000m from any identified NSD, with the closest WTG approximately 1,580 m from NSD10. Therefore, considering the proposed locations of the WTGs and the potential noise impact, it is my opinion that:

- the change will not increase the significance of the construction or operational noise impact (the noise level will reduce considering previous noise levels modelled);
- a full noise impact assessment with new modeling will not be required and the recommendations as contained in the previous document will still be valid;
- the cumulative noise impact will not change, as there are no new or proposed wind turbines (from a different WEF), located within 2,000m from identified NSDs that will cumulatively increase the noise levels;
- there are no new limitations or assumptions.

An updated noise impact assessment will not be required and the findings, mitigation measures and recommendations as contained in the previous document (report AC-UEWEF/ENIA/201508-Rev 0) will still be valid. In terms of noise, this change will be acceptable.

Should you require any further details, or have any additional questions, please do not hesitate to call me on the above numbers.

Yours Faithfully,



Morné de Jager
Enviro-Acoustic Research cc

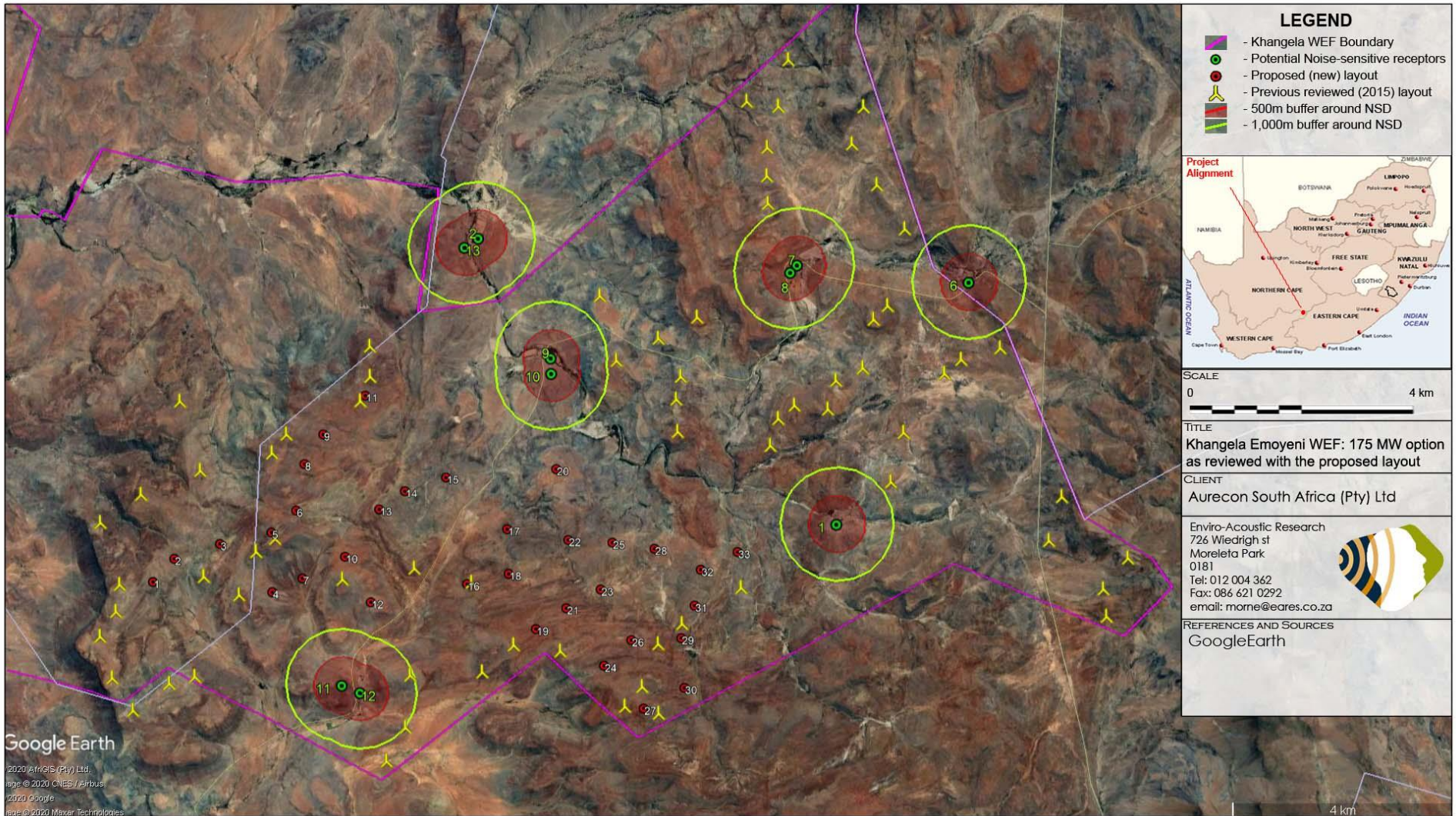


Figure 1: 175 MW Layout (alternative 1) previously evaluated as well as the proposed WTG locations for Khangela Emoyeni WEF (previously Phase 2)

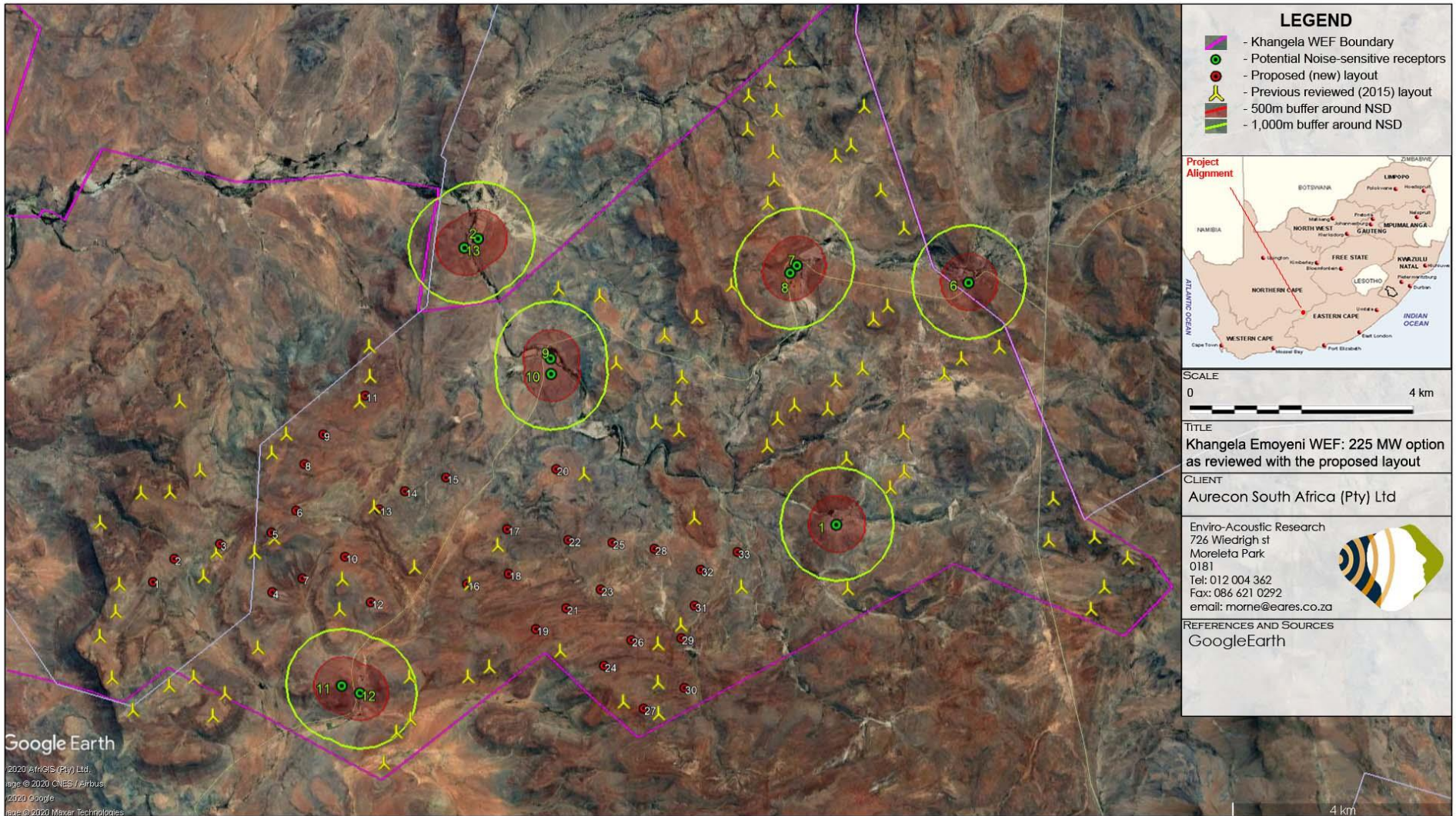


Figure 2: 225 MW Layout (alternative 2) previously evaluated as well as the proposed WTG locations for Khangela Emoyeni WEF (previously Phase 2)



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF THE SPECIALIST, DECLARATION OF INTEREST AND UNDERTAKING UNDER OATH

File Reference Number:	(For official use only)
NEAS Reference Number:	DEA/EIA/
Date Received:	

Application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

PROJECT TITLE

Proposed Amendment of the Phase 2 Umsinde Emoyeni Wind Energy Facility near Murraysburg, Western Cape Province

Kindly note the following:

1. This form must always be used for applications that must be subjected to Basic Assessment or Scoping & Environmental Impact Reporting where this Department is the Competent Authority.
2. This form is current as of 01 September 2018. It is the responsibility of the Applicant / Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the form have been published or produced by the Competent Authority. The latest available Departmental templates are available at <https://www.environment.gov.za/documents/forms>.
3. A copy of this form containing original signatures must be appended to all Draft and Final Reports submitted to the department for consideration.
4. All documentation delivered to the physical address contained in this form must be delivered during the official Departmental Officer Hours which is visible on the Departmental gate.
5. All EIA related documents (includes application forms, reports or any EIA related submissions) that are faxed; emailed; delivered to Security or placed in the Departmental Tender Box will not be accepted, only hardcopy submissions are accepted.

Departmental Details

Postal address:

Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Private Bag X447
Pretoria
0001

Physical address:

Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Environment House
473 Steve Biko Road
Arcadia

Queries must be directed to the Directorate: Coordination, Strategic Planning and Support at:
Email: EIAAdmin@environment.gov.za

1. SPECIALIST INFORMATION

Specialist Company Name:	Enviro-Acoustic Research cc			
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)	4	Percentage Procurement recognition	100%
Specialist name:	Morné de Jager			
Specialist Qualifications:	B. Ing (Chemical)			
Professional affiliation/registration:	SAAI, ASA			
Physical address:	726 Wiedrigh Street, Moreleta Park, Pretoria, 0181			
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Postal code:	0060	Cell:	082 565 4059	
Telephone:	012 004 0362	Fax:	086 621 0292	
E-mail:	morne@eares.co.za			

2. DECLARATION BY THE SPECIALIST

I, **Morné De Jager**, declare that –

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.



Signature of the Specialist

Enviro-Acoustic Research CC

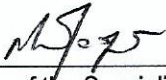
Name of Company:

24 July 2020

Date

3. UNDERTAKING UNDER OATH/ AFFIRMATION

I, Morné De Jager, swear under oath / affirm that all the information submitted or to be submitted for the purposes of this application is true and correct.



Signature of the Specialist

Enviro-Acoustic Research CC

Name of Company

24 July 2020

Date



Signature of the Commissioner of Oaths

2020 | 07 | 24

Date

COMMISSIONER OF OATHS
SAIT Member: WP van Wyk
Ex Officio - TT (SA)
Commissioner of Oaths (RSA)
490 Gert Potgieter street, Garsfontein
South Africa, 0081