

**APPENDIX C8**  
**COMMENTS RECEIVED**



To be included in the Final EIA Report

# **SCOPING PHASE**

## Savannah Public Process

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**From:** John Geeringh <GeerinJH@eskom.co.za>  
**Sent:** Thursday, 12 May 2022 14:32  
**To:** Savannah Public Process  
**Subject:** RE: [CAUTION:EXTERNAL EMAIL] - SE3292: UMMBILA EMOYENI RENEWABLE ENERGY WIND & SOLAR PV FACILITIES & GRID CONNECTION INFRASTRUCTURE - EIA Process and notification of availability of Scoping Reports for review and comment  
**Attachments:** Eskom requirements for work in or near Eskom servitudes.doc; Renewable Energy Generation Plant Setbacks to Eskom Infrastructure Rev2 - signed.pdf  
**Follow Up Flag:** Follow up  
**Due By:** Monday, 16 May 2022 12:00  
**Flag Status:** Completed

Please send me a KMZ file of the affected properties. Please find attached Eskom general requirements for works at or near Eskom infrastructure, as well as the Eskom setbacks guideline for renewable energy developments.

Kind regards

John Geeringh (Pr Sci Nat) Reg. EAP (EAPASA)  
Senior Consultant Environmental Management  
Grid Planning: Land and Rights  
Eskom Transmission Division  
Megawatt Park, D1Y42, Maxwell Drive, Sunninghill, Sandton.  
P O Box 1091, Johannesburg, 2000.  
Tel: 011 516 7233  
Cell: 083 632 7663  
Fax: 086 661 4064  
E-mail: [john.geeringh@eskom.co.za](mailto:john.geeringh@eskom.co.za)

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**From:** Savannah Environmental Public Process <publicprocess@savannahsa.com>  
**Sent:** Thursday, 12 May 2022 14:13  
**To:** John Geeringh <GeerinJH@eskom.co.za>  
**Subject:** [CAUTION:EXTERNAL EMAIL] - SE3292: UMMBILA EMOYENI RENEWABLE ENERGY WIND & SOLAR PV FACILITIES & GRID CONNECTION INFRASTRUCTURE - EIA Process and notification of availability of Scoping Reports for review and comment

**PROPOSED DEVELOPMENT OF THE UMMBILA EMOYENI RENEWABLE ENERGY WIND AND SOLAR PV FACILITIES, AND  
GRID CONNECTION INFRASTRUCTURE, MPUMALANGA PROVINCE  
(DFFE Reference Nos.: To be Issued)**

Dear Stakeholder and Interested & Affected Party,

Emoyeni Renewable Energy Farm (Pty) Ltd proposes the development of a cluster of renewable energy facilities and associated infrastructure, including grid connection infrastructure and battery energy storage, ~6km southeast of Bethal and ~1km east of Morgenzon in the Mpumalanga Province. The cluster of renewable energy facilities (to be known as the Ummbilla Emoyeni Renewable Energy Farm) consists of an up to 666MW wind farm, and 150MW solar PV

facility. The grid connection infrastructure for both facilities will include a 400/132kV Main Transmission Substation (MTS), to be located between Camden and SOL Substations, which will be looped in and out of the existing Camden-Sol 400kV transmission line. The location of the MTS will be refined through an ongoing process of communication with Eskom Planning but will be within close proximity to the 400kV line in order to cut into this line. The size of the MTS will likely be 600m x 600m as per Eskom requirements.

Each renewable energy facility will be constructed as a separate stand-alone project and therefore, separate Scoping and Environmental Impact Assessment (S&EIA) processes will be undertaken for each of the renewable energy facilities. Similarly, the grid connection solution will be subjected to a separate EIA process. Due to the proximity of the renewable energy facilities and their associated grid connection solution to one another, the public participation processes for the projects will be undertaken concurrently, providing the public with an opportunity to understand and provide comment on all the projects.

Attached for your perusal is the Background Information Document that provides technical details regarding the proposed renewable energy facilities and grid connection and a Registration & Comment Form.

The attached letter serves to:

- inform you that the Scoping Reports drafted for each of the above cluster of wind farms and solar PV applications are available for your review and comment from **Thursday, 12 May 2022** until **Monday, 13 June 2022**. The Scoping Reports can be downloaded from our website: [click here](#); and
- invite you to attend the on-line public participation process meeting taking place on Tuesday, 31 May 2022 at 17h00.

Please do not hesitate to contact us should you require any additional information.

Kind regards,

[Unsubscribe this type of email](#)



t: 011 656 3237  
f: 086 684 0547

**Nicolene Venter**  
Public Process

e: [publicprocess@savannahsa.com](mailto:publicprocess@savannahsa.com)  
c: +27 (0) 60 978 8396

[SAWEA Award for Leading Environmental Consultant on Wind Projects in 2013 & 2015](#)

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## TO WHOM IT MAY CONCERN

### Eskom requirements for work in or near Eskom servitudes.

1. Eskom's rights and services must be acknowledged and respected at all times.
2. Eskom shall at all times retain unobstructed access to and egress from its servitudes.
3. Eskom's consent does not relieve the developer from obtaining the necessary statutory, land owner or municipal approvals.
4. Any cost incurred by Eskom as a result of non-compliance to any relevant environmental legislation will be charged to the developer.
5. If Eskom has to incur any expenditure in order to comply with statutory clearances or other regulations as a result of the developer's activities or because of the presence of his equipment or installation within the servitude restriction area, the developer shall pay such costs to Eskom on demand.
6. The use of explosives of any type within 500 metres of Eskom's services shall only occur with Eskom's previous written permission. If such permission is granted the developer must give at least fourteen working days prior notice of the commencement of blasting. This allows time for arrangements to be made for supervision and/or precautionary instructions to be issued in terms of the blasting process. It is advisable to make application separately in this regard.
7. Changes in ground level may not infringe statutory ground to conductor clearances or statutory visibility clearances. After any changes in ground level, the surface shall be rehabilitated and stabilised so as to prevent erosion. The measures taken shall be to Eskom's satisfaction.
8. Eskom shall not be liable for the death of or injury to any person or for the loss of or damage to any property whether as a result of the encroachment or of the use of the servitude area by the developer, his/her agent, contractors, employees, successors in title, and assignees. The developer indemnifies Eskom against loss, claims or damages including claims pertaining to consequential damages by third parties and whether as a result of damage to or interruption of or interference with Eskom's services or apparatus or otherwise. Eskom will not be held responsible for damage to the developer's equipment.
9. No mechanical equipment, including mechanical excavators or high lifting machinery, shall be used in the vicinity of Eskom's apparatus and/or services, without prior written permission having been granted by Eskom. If such permission is granted the developer must give at least seven working days' notice prior to the commencement of work. This allows time for arrangements to be made for supervision and/or precautionary instructions to be issued by the relevant Eskom Manager

Note: Where and electrical outage is required, at least fourteen work days are required to arrange it.

10. Eskom's rights and duties in the servitude shall be accepted as having prior right at all times and shall not be obstructed or interfered with.
11. Under no circumstances shall rubble, earth or other material be dumped within the servitude restriction area. The developer shall maintain the area concerned to Eskom's satisfaction. The developer shall be liable to Eskom for the cost of any remedial action which has to be carried out by Eskom.
12. The clearances between Eskom's live electrical equipment and the proposed construction work shall be observed as stipulated by *Regulation 15 of the Electrical Machinery Regulations of the Occupational Health and Safety Act, 1993 (Act 85 of 1993)*.
13. Equipment shall be regarded electrically live and therefore dangerous at all times.
14. In spite of the restrictions stipulated by Regulation 15 of the Electrical Machinery Regulations of the Occupational Health and Safety Act, 1993 (Act 85 of 1993), as an additional safety precaution, Eskom will not approve the erection of houses, or structures occupied or frequented by human beings, under the power lines or within the servitude restriction area.
15. Eskom may stipulate any additional requirements to highlight any possible exposure to Customers or Public to coming into contact or be exposed to any dangers of Eskom plant.
16. It is required of the developer to familiarise himself with all safety hazards related to Electrical plant.
17. Any third party servitudes encroaching on Eskom servitudes shall be registered against Eskom's title deed at the developer's own cost. If such a servitude is brought into being, its existence should be endorsed on the Eskom servitude deed concerned, while the third party's servitude deed must also include the rights of the affected Eskom servitude.

John Geeringh (Pr Sci Nat)(EAPASA)  
Senior Consultant Environmental Management  
Eskom Transmission Division: Land & Rights  
Megawatt Park, D1Y42, Maxwell Drive, Sunninghill, Sandton.  
P O Box 1091, Johannesburg, 2000.  
Tel: 011 516 7233  
Cell: 083 632 7663  
Fax: 086 661 4064  
E-mail: john.geeringh@eskom.co.za

	<p style="text-align: center;"><b>SCOT</b></p>	<p style="text-align: center;"><b>Technology</b></p>
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Title: **Renewable Energy Generation Plant Setbacks to Eskom Infrastructure** Unique Identifier: **240-65559775**

Alternative Reference Number: **N/A**

Area of Applicability: **Power Line Engineering**



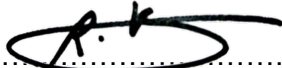
Documentation Type: **Guideline**

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Next Review Date: **N/A**

Disclosure Classification: **CONTROLLED DISCLOSURE**

<p><b>Compiled by</b></p> <p></p> <p>.....</p> <p><b>J W Chetty</b> <b>Mechanical Engineer</b></p> <p>Date: <u>15 / 09 / 2020</u>.....</p>	<p><b>Approved by</b></p> <p></p> <p>.....</p> <p><b>B Ntshuntsha</b> <b>Chief Engineer (Lines)</b></p> <p>Date: <u>30/10/2020</u>.....</p>	<p><b>Authorised by</b></p> <p></p> <p>.....</p> <p><b>R A Vajeth</b> <b>Snr Manager (Lines) and SCOT/SC/ Chairperson</b></p> <p>Date: <u>30/10/2020</u>.....</p>
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## **EXECUTIVE SUMMARY**

In recent decades, the use of wind turbines, concentrated solar plants and photovoltaic plants have been on the increase as it serves as an abundant source of energy. This document specifies proposed setbacks for wind turbines and the reasons for these setbacks from infrastructure as well as setbacks for concentrated solar plants and photovoltaic plants. Setbacks for wind turbines employed in other countries were compared and a general setback to be used by Eskom was suggested for use with wind turbines and other renewable energy generation plants.

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## **1. INTRODUCTION**

During the last few decades, a large amount of wind turbines have been installed in wind farms to accommodate for the large demand of energy and depleting fossil fuels. Wind is one of the most abundant sources of renewable energy. Wind turbines harness the energy of this renewable resource for integration in electricity networks. The extraction of wind energy is its primary function and thus the aerodynamics of the wind turbine is important. There are many different types of wind turbines which will all exhibit different wind flow characteristics. The most common wind turbine used commercially is the Horizontal Axis Wind Turbine. Wind flow characteristics of this turbine are important to analyse as it may have an effect on surrounding infrastructure.

Wind turbines also cause large turbulence downwind that may affect existing infrastructure. Debris or parts of the turbine blade, in the case of a failure, may be tossed behind the turbine and may lead to damage of infrastructure in the wake path.

This document outlines the minimum distances that need to be introduced between a wind turbine and Eskom infrastructure to ensure that debris and / or turbulence would not negatively impact on the infrastructure and future expansion of infrastructure (lines and substation) as per the long term planning scenario.

Safety distances of wind turbines from other structures as implemented by other countries were also considered and the reasons for their selection were noted. All renewable energy developments are approved by The Department of Environmental Affairs, Forestry and Fisheries (DEFF) in terms of NEMA. The DEFF is aware of the setbacks guideline, however they cannot use it in terms of decision making since the setbacks document has no legal standing in SA and it would be outside of their mandate who have been advised to follow the guidelines herein.

Concentrated solar plants and photovoltaic plants setbacks away from substations were also to be considered to prevent restricting possible power line access routes to the substation and possible expansion of substations.

## **2. SUPPORTING CLAUSES**

### **2.1 SCOPE**

This document provides guidance on the safe distance that a wind turbine should be located from any Eskom power line or substation. Although it is not based on any legislative requirement, it is deemed important that Eskom's infrastructure and future network expansion planning is not impeded. The document specifies proposed setback distances for transmission lines (220 kV to 765 kV), distribution lines

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(66 kV to 132 kV) and all Eskom substations. Proposed setbacks for concentrated solar plants and photovoltaic plants are also specified away from substations.

### **2.1.1 Purpose**

Setbacks for wind turbines and power lines / substations are required for various reasons. These include possible catastrophic failure of the turbine blade that may release fragments and which may be thrown onto nearby power lines that may result in damage with associated unplanned outages. Turbulence behind the turbine may affect helicopter flight during routine Eskom live line maintenance and inspections that may lead to safety risk of the aircraft / personnel. Concentrated solar plants and photovoltaic plants setback away from substations were required to prevent substations from being boxed in by these renewable generation plants limiting line route access to the substations and possible future substation expansion.

### **2.1.2 Applicability**

This document is applicable to the siting of all new and existing wind turbines, concentrated solar plants and photovoltaic plants near power lines and substations and in line of site between Eskom telecommunication infrastructure, including future Eskom renewable energy development.

## **2.2 NORMATIVE/INFORMATIVE REFERENCES**

### **2.2.1 Normative**

1. <http://www.envir.ee/orb.aw/class=file/action=preview/id=1170403/Hiiumaa+turbulence+impact+EMD.pdf>.
2. <http://www.energy.ca.gov/2005publications/CEC-500-2005-184/CEC-500-2005-184.PDF>
3. <http://www.adamscountywind.com/Revised%20Site/Windmills/Adams%20County%20Ordinance/Adams%20County%20Wind%20Ord.htm>
4. [http://www.dsireusa.org/incentives/incentive.cfm?Incentive\\_Code=PA11R&RE=1&EE=1](http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=PA11R&RE=1&EE=1)
5. <http://www.wind-watch.org/documents/european-setbacks-minimum-distance-between-wind-turbines-and-habitations/>
6. <http://www.publications.parliament.uk/pa/ld201011/ldbills/017/11017.1-i.html>
7. [http://www.caw.ca/assets/pdf/Turbine\\_Safety\\_Report.pdf](http://www.caw.ca/assets/pdf/Turbine_Safety_Report.pdf)
8. Rogers J, Slegers N, Costello M. (2011) A method for defining wind turbine setback standards. Wind energy 10.1002/we.468

### **2.2.2 Informative**

None

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## 2.3 DEFINITIONS

Definition	Description
Setback	The minimum distance between a wind turbine and boundary line/dwelling/road/infrastructure/servitude etc.
Flicker	Effect caused when rotating wind turbine blades periodically cast shadows
Tip Height	The total height of the wind turbine ie. Hub height plus half rotor diameter (see Figure1)

### 2.3.1 Disclosure Classification

**Controlled disclosure:** controlled disclosure to external parties (either enforced by law, or discretionary).

## 2.4 ABBREVIATIONS

Abbreviation	Description
None	

## 2.5 ROLES AND RESPONSIBILITIES

All parties involved in the positioning wind turbines, concentrated solar plants and photovoltaic plants near power lines/substations should endeavour to follow the setbacks outlined in this guideline.

## 2.6 PROCESS FOR MONITORING

Agreement by Eskom in writing on any encroachment of the setbacks distance should be requested via the Grid Access Unit. Eskom should ensure that every application for renewable energy (RE) developments are informed about the existence of the setbacks document early in the RE planning process to ensure maximum effect. This includes Eskom RE development.

## 2.7 RELATED/SUPPORTING DOCUMENTS

None

## 3. DOCUMENT CONTENT

### 3.1 INTERNATIONAL SETBACK COMPARISON

Wind Turbine setbacks employed by various countries were considered. It was found that setbacks were determined for various reasons that include noise, flicker, turbine blade failure and wind effects as well as

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future network expansion planning. The distances (setbacks) varied based on these factors and were influenced by the type of infrastructure

Wind turbine setbacks varied for roads, power lines, dwellings, buildings and property and it was noted that the largest setbacks were employed for reasons of noise and flicker related issues [1-7]. Very few countries specified setbacks for power lines.

The literature survey [1-7], yielded information about studies and experiments were conducted to determine the distance that a broken fragment from a wind turbine might be thrown. Even though of low probability of hitting a power line [ $5.0 \times 10^{-5}$  <sup>[8]</sup>], the distances recorded were significant [750m <sup>[8]</sup>]

Wind turbines may also cause changes in wind patterns with turbulent effects behind the hub. These factors influence the wind turbine setbacks specified in this document.

Setbacks were thus introduced to prevent any damage to Eskom infrastructure and impedance to operation and future network expansion planning.

Renewable energy plant can also limit access into substations for power lines of all voltages. A setback distance should therefore be employed to prevent substations from being boxed in by these generation plants and preventing future network expansion. These setback distances are specified in this document.

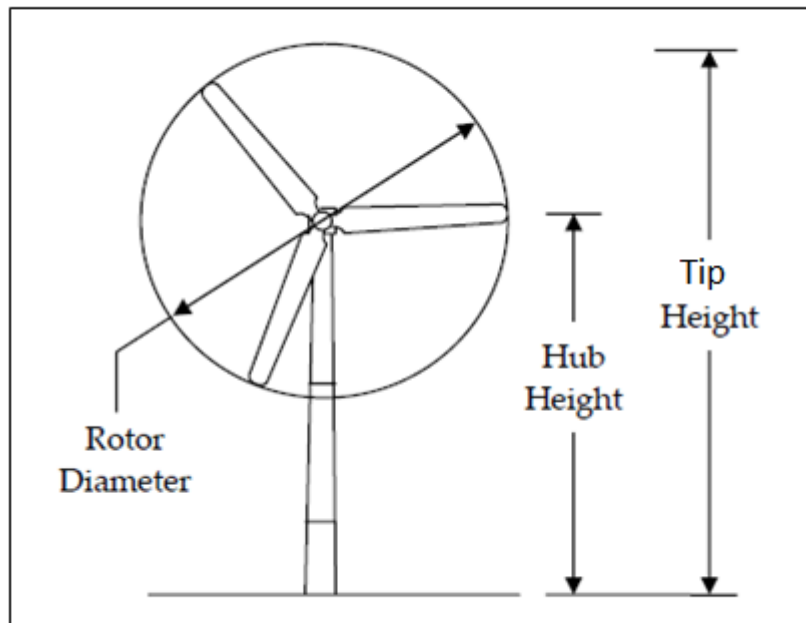
### **3.2 ESKOM RECOMMENDED SETBACKS**

Any renewable energy applicant should engage with Eskom to determine if their plant layout or positioning of turbines, CSP or PV infrastructure would encroach on the proposed setbacks provided for in this guideline and to ensure that their planning and Eskom's future expansion planning is taken into account. Eskom must inform all renewable energy developers, including Eskom RE, of the existence of the setbacks guideline early in the development process. Should there be an encroachment, a formal request should be sent to and accepted by Eskom in writing if any of the below mentioned setback distances are infringed upon:

- Eskom requests a setback distance of 3 times the tip height of the wind turbine from the edge of the closest Eskom servitude (including vacant servitudes) for transmission lines (220kV to 765kV) and Substations.
- Eskom requests a setback distance of 1 times the tip height of the wind turbine from the edge of the closest Eskom servitude (including vacant servitudes) for distribution lines (66 kV to 132 kV) and Substations.

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- A written request should be sent to Eskom via the Grid Access Unit regarding any proposed wind turbine, concentrated solar plants and photovoltaic activity within a 5 km radius of a substation for Eskom to comment on.
- Where concentrated solar plants, photovoltaic structures, battery storage systems (BESS) and other renewable generation plants fall within a 2 km radius of the closest point of a transmission or distribution substation (66kV to 765kV), a written agreement with Eskom is recommended during the planning phase of such plant or structures to ensure Eskom's future planning is not impeded.
- Applicants should not position any wind turbine in the line of site between and two Eskom Radio Telecommunication masts. It should be proven that Eskom radio telecommunication systems (mainly microwave systems) will not be affected in any way by wind turbines due to the criticality of this infrastructure in terms of network operation. Eskom Telecommunications should be engaged on this matter.
- If the position or size of any turbine changes and subsequently infringes on any of the above stated setbacks, a request for relaxation must be sent through to Eskom as per the point mentioned above.



**Figure 1: Horizontal Axis Wind Turbine [2]**

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#### **4. AUTHORISATION**

This document has been seen and accepted by:

<b>Name &amp; Surname</b>	<b>Designation</b>
V Naidoo	Chief Engineer
Dr P Pretorius	Electrical Specialist
J Geeringh	Snr Consultant Environ Mngt
B Haridass	Snr Consultant Engineer
B Ntshunsha	Chief Engineer
R Vajeth	Snr Manager (Lines)
D A Tunncliff	Snr Manager L&R (Acting)
B Branfield	Snr Consultant Engineer

#### **5. REVISIONS**

<b>Date</b>	<b>Rev.</b>	<b>Compiler</b>	<b>Remarks</b>
November 2013	0	J W Chetty	First Publication - No renewable energy generation plant setback specification in existence.
October 2018	1	JW Chetty	Modification to sub-section 3.2 to provide more clarity for application procedure.
June 2020	2	JW Chetty	Content within the guideline was re-worded to explain the benefits of mutual agreements between the applicants and ESKOM rather than the application being a legal obligation.

#### **6. DEVELOPMENT TEAM**

The following people were involved in the development of this document:

Jonathan Chetty (Mechanical Engineer)

Vivendhra Naidoo (Chief Engineer)

Dr Pieter Pretorius (Electrical Specialist)

John Geeringh (Snr Consultant Environ Mngt)

Bharat Haridass (Snr Consultant Engineer)


Riaz Vajeth (Snr Manager (Lines))

Bruce Ntshunsha (Chief Engineer)

David Tunncliff (Snr Manager L&R Acting)

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	<p style="text-align: center;"><b>SCOT</b></p>	<p style="text-align: center;"><b>Technology</b></p>
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Title: **Renewable Energy Generation Plant Setbacks to Eskom Infrastructure** Unique Identifier: **240-65559775**

Alternative Reference Number: **N/A**

Area of Applicability: **Power Line Engineering**



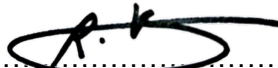
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Revision: **2**

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<p><b>Compiled by</b></p> <p></p> <p>.....</p> <p><b>J W Chetty</b> <b>Mechanical Engineer</b></p> <p>Date: <u>15 / 09 / 2020</u>.....</p>	<p><b>Approved by</b></p> <p></p> <p>.....</p> <p><b>B Ntshuntsha</b> <b>Chief Engineer (Lines)</b></p> <p>Date: <u>30/10/2020</u>.....</p>	<p><b>Authorised by</b></p> <p></p> <p>.....</p> <p><b>R A Vajeth</b> <b>Snr Manager (Lines) and SCOT/SC/ Chairperson</b></p> <p>Date: <u>30/10/2020</u>.....</p>
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Wind turbines also cause large turbulence downwind that may affect existing infrastructure. Debris or parts of the turbine blade, in the case of a failure, may be tossed behind the turbine and may lead to damage of infrastructure in the wake path.

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## **2. SUPPORTING CLAUSES**

### **2.1 SCOPE**

This document provides guidance on the safe distance that a wind turbine should be located from any Eskom power line or substation. Although it is not based on any legislative requirement, it is deemed important that Eskom's infrastructure and future network expansion planning is not impeded. The document specifies proposed setback distances for transmission lines (220 kV to 765 kV), distribution lines

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(66 kV to 132 kV) and all Eskom substations. Proposed setbacks for concentrated solar plants and photovoltaic plants are also specified away from substations.

### **2.1.1 Purpose**

Setbacks for wind turbines and power lines / substations are required for various reasons. These include possible catastrophic failure of the turbine blade that may release fragments and which may be thrown onto nearby power lines that may result in damage with associated unplanned outages. Turbulence behind the turbine may affect helicopter flight during routine Eskom live line maintenance and inspections that may lead to safety risk of the aircraft / personnel. Concentrated solar plants and photovoltaic plants setback away from substations were required to prevent substations from being boxed in by these renewable generation plants limiting line route access to the substations and possible future substation expansion.

### **2.1.2 Applicability**

This document is applicable to the siting of all new and existing wind turbines, concentrated solar plants and photovoltaic plants near power lines and substations and in line of site between Eskom telecommunication infrastructure, including future Eskom renewable energy development.

## **2.2 NORMATIVE/INFORMATIVE REFERENCES**

### **2.2.1 Normative**

1. <http://www.envir.ee/orb.aw/class=file/action=preview/id=1170403/Hiiumaa+turbulence+impact+EMD.pdf>.
2. <http://www.energy.ca.gov/2005publications/CEC-500-2005-184/CEC-500-2005-184.PDF>
3. <http://www.adamscountywind.com/Revised%20Site/Windmills/Adams%20County%20Ordinance/Adams%20County%20Wind%20Ord.htm>
4. [http://www.dsireusa.org/incentives/incentive.cfm?Incentive\\_Code=PA11R&RE=1&EE=1](http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=PA11R&RE=1&EE=1)
5. <http://www.wind-watch.org/documents/european-setbacks-minimum-distance-between-wind-turbines-and-habitations/>
6. <http://www.publications.parliament.uk/pa/ld201011/ldbills/017/11017.1-i.html>
7. [http://www.caw.ca/assets/pdf/Turbine\\_Safety\\_Report.pdf](http://www.caw.ca/assets/pdf/Turbine_Safety_Report.pdf)
8. Rogers J, Slegers N, Costello M. (2011) A method for defining wind turbine setback standards. Wind energy 10.1002/we.468

### **2.2.2 Informative**

None

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When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

## 2.3 DEFINITIONS

Definition	Description
Setback	The minimum distance between a wind turbine and boundary line/dwelling/road/infrastructure/servitude etc.
Flicker	Effect caused when rotating wind turbine blades periodically cast shadows
Tip Height	The total height of the wind turbine ie. Hub height plus half rotor diameter (see Figure1)

### 2.3.1 Disclosure Classification

**Controlled disclosure:** controlled disclosure to external parties (either enforced by law, or discretionary).

## 2.4 ABBREVIATIONS

Abbreviation	Description
None	

## 2.5 ROLES AND RESPONSIBILITIES

All parties involved in the positioning wind turbines, concentrated solar plants and photovoltaic plants near power lines/substations should endeavour to follow the setbacks outlined in this guideline.

## 2.6 PROCESS FOR MONITORING

Agreement by Eskom in writing on any encroachment of the setbacks distance should be requested via the Grid Access Unit. Eskom should ensure that every application for renewable energy (RE) developments are informed about the existence of the setbacks document early in the RE planning process to ensure maximum effect. This includes Eskom RE development.

## 2.7 RELATED/SUPPORTING DOCUMENTS

None

## 3. DOCUMENT CONTENT

### 3.1 INTERNATIONAL SETBACK COMPARISON

Wind Turbine setbacks employed by various countries were considered. It was found that setbacks were determined for various reasons that include noise, flicker, turbine blade failure and wind effects as well as

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future network expansion planning. The distances (setbacks) varied based on these factors and were influenced by the type of infrastructure

Wind turbine setbacks varied for roads, power lines, dwellings, buildings and property and it was noted that the largest setbacks were employed for reasons of noise and flicker related issues [1-7]. Very few countries specified setbacks for power lines.

The literature survey [1-7], yielded information about studies and experiments were conducted to determine the distance that a broken fragment from a wind turbine might be thrown. Even though of low probability of hitting a power line [ $5.0 \times 10^{-5}$  <sup>[8]</sup>], the distances recorded were significant [750m <sup>[8]</sup>]

Wind turbines may also cause changes in wind patterns with turbulent effects behind the hub. These factors influence the wind turbine setbacks specified in this document.

Setbacks were thus introduced to prevent any damage to Eskom infrastructure and impedance to operation and future network expansion planning.

Renewable energy plant can also limit access into substations for power lines of all voltages. A setback distance should therefore be employed to prevent substations from being boxed in by these generation plants and preventing future network expansion. These setback distances are specified in this document.

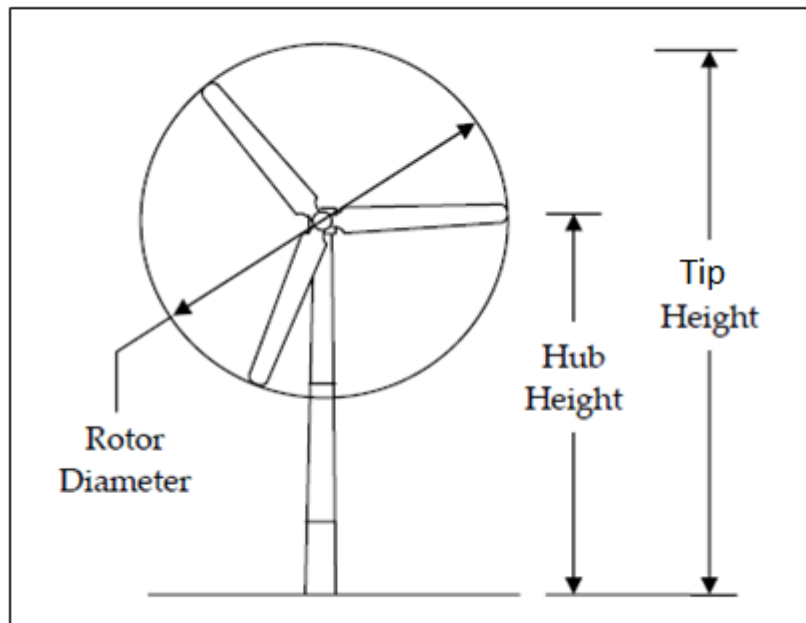
### **3.2 ESKOM RECOMMENDED SETBACKS**

Any renewable energy applicant should engage with Eskom to determine if their plant layout or positioning of turbines, CSP or PV infrastructure would encroach on the proposed setbacks provided for in this guideline and to ensure that their planning and Eskom's future expansion planning is taken into account. Eskom must inform all renewable energy developers, including Eskom RE, of the existence of the setbacks guideline early in the development process. Should there be an encroachment, a formal request should be sent to and accepted by Eskom in writing if any of the below mentioned setback distances are infringed upon:

- Eskom requests a setback distance of 3 times the tip height of the wind turbine from the edge of the closest Eskom servitude (including vacant servitudes) for transmission lines (220kV to 765kV) and Substations.
- Eskom requests a setback distance of 1 times the tip height of the wind turbine from the edge of the closest Eskom servitude (including vacant servitudes) for distribution lines (66 kV to 132 kV) and Substations.

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- A written request should be sent to Eskom via the Grid Access Unit regarding any proposed wind turbine, concentrated solar plants and photovoltaic activity within a 5 km radius of a substation for Eskom to comment on.
- Where concentrated solar plants, photovoltaic structures, battery storage systems (BESS) and other renewable generation plants fall within a 2 km radius of the closest point of a transmission or distribution substation (66kV to 765kV), a written agreement with Eskom is recommended during the planning phase of such plant or structures to ensure Eskom’s future planning is not impeded.
- Applicants should not position any wind turbine in the line of site between and two Eskom Radio Telecommunication masts. It should be proven that Eskom radio telecommunication systems (mainly microwave systems) will not be affected in any way by wind turbines due to the criticality of this infrastructure in terms of network operation. Eskom Telecommunications should be engaged on this matter.
- If the position or size of any turbine changes and subsequently infringes on any of the above stated setbacks, a request for relaxation must be sent through to Eskom as per the point mentioned above.



**Figure 1: Horizontal Axis Wind Turbine [2]**

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#### **4. AUTHORISATION**

This document has been seen and accepted by:

<b>Name &amp; Surname</b>	<b>Designation</b>
V Naidoo	Chief Engineer
Dr P Pretorius	Electrical Specialist
J Geeringh	Snr Consultant Environ Mngt
B Haridass	Snr Consultant Engineer
B Ntshunsha	Chief Engineer
R Vajeth	Snr Manager (Lines)
D A Tunncliff	Snr Manager L&R (Acting)
B Branfield	Snr Consultant Engineer

#### **5. REVISIONS**

<b>Date</b>	<b>Rev.</b>	<b>Compiler</b>	<b>Remarks</b>
November 2013	0	J W Chetty	First Publication - No renewable energy generation plant setback specification in existence.
October 2018	1	JW Chetty	Modification to sub-section 3.2 to provide more clarity for application procedure.
June 2020	2	JW Chetty	Content within the guideline was re-worded to explain the benefits of mutual agreements between the applicants and ESKOM rather than the application being a legal obligation.

#### **6. DEVELOPMENT TEAM**

The following people were involved in the development of this document:

Jonathan Chetty (Mechanical Engineer)

Vivendhra Naidoo (Chief Engineer)

Dr Pieter Pretorius (Electrical Specialist)

John Geeringh (Snr Consultant Environ Mngt)

Bharat Haridass (Snr Consultant Engineer)

Riaz Vajeth (Snr Manager (Lines))

Bruce Ntshunsha (Chief Engineer)

David Tunncliff (Snr Manager L&R Acting)

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# forestry, fisheries & the environment

Department:  
Forestry, Fisheries and the Environment  
REPUBLIC OF SOUTH AFRICA

Private Bag X 447· PRETORIA 0001· Environment House 473 Steve Biko Road, Arcadia,· PRETORIA

**DFFE Reference:** 14/12/16/3/3/2/2160

**Enquiries:** Ms Julliet Mahlangu

**Telephone:** (012) 399 9320**E-mail:** [jmmahalngu@dfpe.gov.za](mailto:jmmahalngu@dfpe.gov.za)

Ms Jo-Anne Thomas  
Savannah Environmental (Pty) Ltd  
PO Box 148  
**SUNNINGHILL**  
2191

**Telephone Number:** 011 656 3237/3256/3251  
**Email Address:** [joanne@savannahsa.com](mailto:joanne@savannahsa.com)

## PER MAIL / E-MAIL

Dear Ms Thomas

### COMMENTS ON THE DRAFT SCOPING REPORT FOR THE PROPOSED UMMBILA EMOYENI WIND ENERGY FACILITY, MPUMALANGA PROVINCE

The Application for Environmental Authorisation and Draft Scoping Report (SR) dated May 2022 and received by the Department on 13 May 2022, refer.

This letter serves to inform you that the following information must be included to the Final Scoping Report:

#### **(a) Layout & Sensitivity Maps**

Please provide a layout map which indicates the following:

- location of the proposed wind energy facility including associated infrastructure.
- The location of sensitive environmental features on site e.g. CBAs, heritage sites, wetlands, drainage lines etc. that will be affected;
- Buffer areas; and
- All “no-go” areas.
- The above map must be overlain with a sensitivity map and a cumulative map which shows neighbouring renewable energy developments and existing grid infrastructure.
- Google maps will not be accepted.

#### **(b) Public Participation Process**

- Please ensure that all issues raised and comments received during the circulation of the SR from registered I&APs and organs of state which have jurisdiction (including this Department’s Biodiversity Section) in respect of the proposed activity are adequately addressed in the Final SR. Proof of correspondence with the various stakeholders must be included in the Final SR. Should you be unable to obtain comments, proof should be submitted to the Department of the attempts that were made to obtain comments. The Public Participation Process must be conducted in terms of Regulation 39, 40 41, 42, 43 & 44 of the EIA Regulations 2014, as amended.
- A comments and response trail report (C&R) must be submitted with the final SR. The C&R report must incorporate all historical comments for this development. The C&R report must be a separate document

from the main report and the format must be in the table format. Please refrain from summarising comments made by I&APs. All comments from I&APs must be copied verbatim and responded to clearly. Please note that a response such as “Noted” is not regarded as an adequate response to I&AP’s comments.

- The final SR must provide evidence that all identified and relevant competent authorities have been given an opportunity to comment on the proposed development; particularly the South African Astronomical Observatory, the Mpumalanga Environmental Department, the District and Local Municipalities.

### **(c) Specialist Assessments**

- Specialist studies to be conducted must provide a detailed description of their methodology, as well as indicate the locations and descriptions of turbine positions, and all other associated infrastructures that they have assessed and are recommending for authorisations.
- The specialist studies must also provide a detailed description of all limitations to their studies. All specialist studies must be conducted in the right season and providing that as a limitation, will not be accepted.
- Should the appointed specialists specify contradicting recommendations, the EAP must clearly indicate the most reasonable recommendation and substantiate this with defensible reasons; and where necessary, include further expertise advice.
- It is further brought to your attention that Procedures for the Assessment and Minimum Criteria for Reporting on identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for Environmental Authorisation, which were promulgated in Government Notice No. 320 of 20 March 2020 (i.e. “the Protocols”), and in Government Notice No. 1150 of 30 October 2020 (i.e. protocols for terrestrial plant and animal species), have come into effect. **Please note that specialist assessments must be conducted in accordance with these protocols.**

### **(d) Cumulative Assessment**

- Should there be any other similar projects within a 30km radius of the proposed development site, the cumulative impact assessment for all identified and assessed impacts must be refined to indicate the following:
  - Identified cumulative impacts must be clearly defined, and where possible the size of the identified impact must be quantified and indicated, i.e. hectares of cumulatively transformed land.
  - Detailed process flow and proof must be provided, to indicate how the specialist’s recommendations, mitigation measures and conclusions from the various similar developments in the area were taken into consideration in the assessment of cumulative impacts and when the conclusion and mitigation measures were drafted for this project.
  - The cumulative impacts significance rating must also inform the need and desirability of the proposed development.
  - A cumulative impact environmental statement on whether the proposed development must proceed.

### **General**

You are further reminded to comply with Regulation 21(1) of the NEMA EIA Regulations 2014, as amended, which states that:

*“If S&EIR must be applied to an application, the applicant must, within 44 days of receipt of the application by the competent authority, submit to the competent authority a scoping report which has been subjected to a public participation process of at least 30 days and which reflects the incorporation of comments received, including any comments of the competent authority”*

You are further reminded that the final SR to be submitted to this Department must comply with all the requirements in terms of the scope of assessment and content of Scoping reports in accordance with Appendix 2 and Regulation 21(1) of the EIA Regulations 2014, as amended.

Further note that in terms of Regulation 45 of the EIA Regulations 2014, as amended, this application will lapse if the applicant fails to meet any of the timeframes prescribed in terms of these Regulations, unless an extension has been granted in terms of Regulation 3(7).

You are hereby reminded of Section 24F of the National Environmental Management Act, Act No. 107 of 1998, as amended, that no activity may commence prior to an Environmental Authorisation being granted by the Department.

Yours sincerely



**Milicent Solomons**  
**Acting Chief Director: Integrated Environmental Authorisations**  
**Department of Forestry, Fisheries and the Environment**  
**Letter signed by: Dr Danie Smit**  
**Designation: Deputy Director: National Infrastructure Projects**  
**Date: 08/06/2022**

cc:	Mr Peter Carl Venn	Emoyeni Renewable Energy Farm	Email: <a href="mailto:Peter.venn@windlab.com">Peter.venn@windlab.com</a>
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Our Ref:



an agency of the  
Department of Arts and Culture

T: +27 21 462 4502 | F: +27 21 462 4509 | E: info@sahra.org.za  
South African Heritage Resources Agency | 111 Harrington Street | Cape Town  
P.O. Box 4637 | Cape Town | 8001  
www.sahra.org.za

Enquiries: Natasha Higgitt  
Tel: 021 462 4502  
Email: nhiggitt@sahra.org.za  
CaseID: 18576

Date: Friday June 10, 2022  
Page No: 1

## **Interim Comment**

**In terms of Section 38(3), 38(8) of the National Heritage Resources Act (Act 25 of 1999)**

Attention: Savannah Environmental (Pty) Ltd

PO Box 148  
Sunninghill  
2157

**Emoyeni Renewable Energy Farm (Pty) Ltd is proposing the development of renewable energy facilities, collectively known as the Umbbila Emoyeni Renewable Energy Facility, consisting of a commercial wind farm, solar PV facility, and associated grid infrastructure, including a battery energy storage system, located approximately 6km southeast of Bethal in the Mpumalanga Province of South Africa. A preferred project focus area with an extent of 27 819ha been identified by Emoyeni Renewable Energy Farm (Pty) Ltd as a technically suitable area for the development of the Umbbilla Emoyeni Renewable Energy Farm with a contracted capacity of up to 666MW of wind energy and 150MW of solar energy. This layout, and project capacity, will reduce as the EIA and scoping process identifies environmental constraints that exclude areas for development. The wind farm is proposed to accommodate the following infrastructure: Up to 111 wind turbines with a maximum hub height of up to 200m. The tip height of the turbines will be up to 300m. 33kV / 132kV onsite collector substations Battery Energy Storage System (BESS) Cabling between turbines, to be laid underground where practical Laydown and O&M hub (approximately 300m x 300m): Batching plant of 4ha to 7ha Construction compound (temporary) of 6 Ha approximately Operation and Maintenance office of 1.5Ha approximately , Laydown and crane hardstand areas (approximately 75m x 120m) Access roads of 12-13m wide, with 12m at turning circles. It is anticipated that the power generated by the project will be bid into the REIPPPP tender process (DMRE) and/or into private off take opportunities. The LILO corridor will intersect with either the Camden-Zeus 1 400kV, Camden-Zeus 2 400kV or Camden-Tutuka 400kV power line.**

Savannah Environmental (Pty) Ltd has been appointed by Emoyeni Renewable Energy Farm (Pty) Ltd to conduct an Environmental Authorisation (EA) Application for the proposed Umbbila Emoyeni Wind Energy Facility, near Bethal, Mpumalanga Province.

A draft Scoping Report (DSR) has been submitted in terms of the National Environmental Management Act, 1998 (NEMA) and the 2017 NEMA Environmental Impact Assessment (EIA) Regulations. The proposed

Our Ref:



an agency of the  
Department of Arts and Culture

T: +27 21 462 4502 | F: +27 21 462 4509 | E: info@sahra.org.za  
South African Heritage Resources Agency | 111 Harrington Street | Cape Town  
P.O. Box 4637 | Cape Town | 8001  
www.sahra.org.za

Enquiries: Natasha Higgitt  
Tel: 021 462 4502  
Email: nhiggitt@sahra.org.za

Date: Friday June 10, 2022  
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development will include the construction of 111 turbines over an area of 27 819 ha with associated infrastructure such as underground cabling, on-site collector substation, 3 x 132kV powerlines from the substation, site office, batching plant, 3 x operation and maintenance office, 3 x laydown areas, laydown and crane hardstands and access roads.

CTS Heritage has been appointed to provide heritage specialist input as required by section 24(4)b(iii) of NEMA and section 38(8) of the National Heritage Resources Act, Act 25 of 1999 (NHRA).

*Lavin, J. 2022. Desktop Heritage Screening Assessment for the Umbila Emoyeni Renewable Energy Wind and Solar PV Facilities, Mpumalanga Province.*

The desktop study noted that heritage resources such as Stone Age resources, Late Iron Age sites, burial grounds and graves, historical werfs and Anglo-Boer war remains may be located within the proposed development area. The proposed development footprint is located in areas of moderate and very high palaeontological sensitivity, underlain by the Vryheid formation.

The report recommends that further field assessment of the impact to heritage including palaeontological resources must be undertaken.

### **Interim Comment**

The SAHRA Archaeology, Palaeontology and Meteorites (APM) Unit notes the pending assessment of the impact to heritage resources. The HIA must comply with section 38(3) of the NHRA as required by section 38(8) of the NHRA. The HIA must include an archaeological and palaeontological component.

The archaeological component of the HIA must be conducted by a qualified archaeologist and must comply with the SAHRA 2007 Minimum Standards: Archaeological and Palaeontological Components of Impact Assessment Reports.

The proposed development footprint is located in areas of moderate and very high sensitivity as per the SAHRIS PalaeoSensitivity Map. Therefore, a field-based Palaeontological Impact Assessment must be undertaken by a qualified palaeontologist. The report must comply with the 2012 Minimum Standards: Palaeontological Components of Heritage Impact Assessments.

Any other heritage resources as defined in section 3 of the NHRA that may be impacted, such as built

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Department of Arts and Culture

T: +27 21 462 4502 | F: +27 21 462 4509 | E: [info@sahra.org.za](mailto:info@sahra.org.za)  
South African Heritage Resources Agency | 111 Harrington Street | Cape Town  
P.O. Box 4637 | Cape Town | 8001  
[www.sahra.org.za](http://www.sahra.org.za)

Enquiries: Natasha Higgitt  
Tel: 021 462 4502  
Email: [nhiggitt@sahra.org.za](mailto:nhiggitt@sahra.org.za)  
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structures over 60 years old, sites of cultural significance associated with oral histories, burial grounds and graves, graves of victims of conflict, and cultural landscapes or viewscapes must also be assessed.

Further comments will be issued upon receipt of the draft EIA documents inclusive of appendices and the above pending heritage specialist reports.

Should you have any further queries, please contact the designated official using the case number quoted above in the case header.

Yours faithfully

---

Natasha Higgitt  
Heritage Officer  
South African Heritage Resources Agency

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Phillip Hine  
Manager: Archaeology, Palaeontology and Meteorites Unit  
South African Heritage Resources Agency

**ADMIN:**

Direct URL to case: <https://sahris.sahra.org.za/node/597541>