

Comments Received

DEFF



environment, forestry & fisheries

Department:
Environment, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

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DEA Reference: 14/12/16/3/3/1/2218

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PER MAIL / E-MAIL

Dear Ms Thomas

COMMENTS ON THE DRAFT BASIC ASSESSMENT REPORT FOR THE PROPOSED 100MW UPILANGA PV1 SOLAR ENERGY FACILITY AND ITS ASSOCIATED INFRASTRUCTURE NEAR UPINGTON WITHIN THE DAVID KRUIPER LOCAL MUNICIPALITY IN THE NORTHERN CAPE PROVINCE

The Application for Environmental Authorisation and the Draft Basic Assessment Report (BAR) received by the Department on 03 August 2020, refer.

This letter serves to inform you that the following information must be included in the final BAR:

(a) Listed Activities

- (i) Please ensure that all relevant listed activities are applied for, are specific and can be linked to the development activity or infrastructure as described in the project description. Only activities applicable to the development must be applied for and assessed.
- (ii) If the activities applied for in the application form differ from those mentioned in the final BAR, an amended application form must be submitted. Please note that the Department's application form template has been amended and can be downloaded from the following link <https://www.environment.gov.za/documents/forms>.
- (iii) It is imperative that the relevant authorities are continuously involved throughout the basic assessment process as the development property possibly falls within geographically designated areas in terms of numerous GN R. 985 Activities. Written comments must be obtained from the relevant authorities and submitted to this Department. In addition, a graphical representation of the proposed development within the respective geographical areas must be provided.

(b) Layout & Sensitivity Maps

- (i) Please provide a layout map which indicates the following:
 - (a) The proposed facility in relation to the neighbouring facility with associated infrastructure for each development;
 - (b) The proposed grid infrastructure for each of the above PV facilities, overlain by the sensitivity map;
 - (c) All supporting onsite infrastructure e.g. roads (existing and proposed);

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

(c) Alternatives

- (i) Please note that you are required to provide a full description of the process followed to reach the proposed preferred alternative within the site, in terms of Appendix 1(3)(1)(h) of the EIA Regulations 2014, as amended, including the following content:
 - (a) details of all the alternatives considered;
 - (b) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;
 - (c) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;
 - (d) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;
 - (e) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts—
 - (aa) can be reversed;
 - (bb) may cause irreplaceable loss of resources; and
 - (cc) can be avoided, managed or mitigated.
 - (f) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;
 - (g) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;
 - (h) the possible mitigation measures that could be applied and level of residual risk;
 - (i) the outcome of the site selection matrix;
 - (j) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and
 - (k) a concluding statement indicating the preferred alternatives, including preferred location of the activity.
- (ii) Written proof of an investigation and motivation if no reasonable or feasible alternatives exist in terms of Appendix 1.

(d) Specialist Declaration of Interest

- (i) Specialist Declaration of Interest forms must be attached to the final BAR. You are therefore requested to submit original signed Specialist Declaration of Interest forms for each specialist study conducted. The forms are available on Department's website (please use the Department's template).

(e) Specialist Assessments

- (i) The Ecology Impact Assessment report by 3Foxes Biodiversity Solutions (Simon Todd) annexed as Appendix D is noted. As is the requirement of an offset necessitated by the anticipated loss of more than 3000 *Boscia albitrunca* individual species, which far exceeds the guideline amount of trees that this Department finds acceptable for loss without an offset.
- (ii) As such, this Department requires that a biodiversity offset plan detailing all necessary information which will include inter alia the total loss of biodiversity versus the net gain, where the loss will occur

- and where it will be replaced, be provided in order to be able to make an informed decision on the application.
- (iii) Furthermore, this Department requires that legal agreements between the applicant and the management authority that will manage the offset area be signed before a decision can be made on the application.
 - (iv) This Department will be guided by colleagues from this Department's Protected Area Management and Biodiversity & Conservation units, as well as the DENC on the offset process. As such, the EAP must ensure that all documents related to this project are also submitted to these commenting authorities.
 - (v) Specialist studies to be conducted must provide a detailed description of their methodology, as well as all other associated infrastructures that they have assessed and are recommending for the authorisation.
 - (vi) 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.
 - (vii) 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 expert advice.
 - (viii) An indication if Electro Magnetic Interference (EMI) and Radio Frequency Interference (RFI) studies are needed. Furthermore, comments from the SKA office regarding this must be sought.

(f) Cumulative Assessment

- (i) 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:
 - (a) 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.
 - (b) 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.
 - (c) The cumulative impacts significance rating must also inform the need and desirability of the proposed development.
 - (d) A cumulative impact environmental statement on whether the proposed development must proceed.

(g) Undertaking of an Oath

- (i) The Department has noted that the submitted application form has an Undertaking under oath or affirmation by the EAP. However, the aforementioned oath was not included in the draft BAR, but rather an appendix of the application form attached to the BAR. Please note that the final BAR must also have an undertaking under oath/affirmation by the EAP.
- (ii) Based on the above, you are therefore required to include an undertaking under oath or affirmation by the EAP (administered by a Commissioner of Oaths) as per Appendix 1(3)(r) of the NEMA EIA Regulations, 2014, as amended, which states that the BAR must include:
"an undertaking under oath or affirmation by the EAP in relation to:
 - a) the correctness of the information provided in the reports;*
 - b) the inclusion of comments and inputs from stakeholders and I&APs;*
 - c) the inclusion of inputs and recommendations from the specialist reports where relevant; and*
 - d) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties".*

(h) Details and Expertise of the EAP

- (i) You are required to include the details and expertise of the EAP in the BAR, including a curriculum vitae, in order to comply with the requirements of Appendix 1(3)(1)(a) of the NEMA EIA Regulations, 2014, as amended.

(i) Public Participation Process

- (i) The following information must be submitted with the final BAR:
 - (a) A list of registered interested and affected parties as per Regulation 42 of the NEMA EIA Regulations, 2014, as amended;
 - (b) Copies of all comments received during the draft BAR comment period; and
 - (c) A comment and response report which contains all comments received and responses provided to all comments and issues raised during the public participation process for the BAR. Please note that comments received from this Department must also form part of the comment and response report.
- (ii) Please ensure that all issues raised and comments received during the circulation of the BAR 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 BAR.
- (iii) Proof of correspondence with the various stakeholders must be included in the final BAR. 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.

(j) Environmental Management Programme

- (i) It is drawn to your attention that for substation and overhead electricity transmission and distribution infrastructure, when such facilities trigger activity 11 or 47 of the Environmental Impact Assessment Regulations Listing Notice 1 of 2014, as amended, and any other listed and specified activities necessary for the realisation of such facilities, the generic Environmental Management Programme, contemplated in Regulations 19(4) must be used and submitted with the final report over and above the EMPr for the facility.
- (ii) There needs to be an EMPr for the facility, the onsite substation as well as the power line, for whichever alternative is chosen.
- (iii) Further to the above, you are required to comply with the content of the EMPr in terms of Appendix 4 of the Environmental Impact Assessment Regulations, 2014, as amended.
- (iv) Please be informed that the following content must be incorporated within the EMPr's as indicated in Appendix 4 of the EIA Regulations 2014, as amended:
 - (a) Details of the EAP who prepared the EMPr; and the expertise of that EAP to prepare an EMPr, including a curriculum vitae.
 - (b) A map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers.
 - (c) A description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including —
 - (aa) Planning and design;
 - (bb) Pre-construction activities;
 - (cc) Construction activities;
 - (dd) Rehabilitation of the environment after construction and where applicable post closure; and
 - (ee) Where relevant, operation activities.

- (d) A description of proposed impact management actions, identifying the manner in which the impact management outcomes contemplated in paragraph (d) of Appendix 4 of the EIA Regulations 2014, as amended, will be achieved, and must, where applicable, include actions to —
- (e) Avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;
- (f) Comply with any prescribed environmental management standards or practices;
- (g) Comply with any applicable provisions of the Act regarding closure, where applicable; and
- (h) Comply with any provisions of the Act regarding financial provision for rehabilitation, where applicable.
- (i) The method of monitoring the implementation of the impact management actions contemplated in paragraph (f) of Appendix 4 of the EIA Regulations 2014, as amended.
- (j) The frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f) of Appendix 4 of the EIA Regulations 2014, as amended.
- (k) An indication of the persons who will be responsible for the implementation of the impact management actions.
- (l) The time periods within which the impact management actions contemplated in paragraph (f) of Appendix 4 of the EIA Regulations 2014, as amended, must be implemented.
- (m) The mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f) of Appendix 4 of the EIA Regulations 2014, as amended.
- (n) A program for reporting on compliance, taking into account the requirements as prescribed by the Regulations.

(a) Environmental Impact Statement

- (i) You are kindly requested to include an environmental impact statement which contains –
 - (a) a summary of the key findings of the environmental impact assessment;
 - (b) a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and
 - (c) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives.

Please also ensure that the final BAR includes the period for which the Environmental Authorisation is required and the date on which the activity will be concluded as per Appendix 1(3)(1)(q) of the NEMA EIA Regulations, 2014, as amended.

You are further reminded to comply with Regulation 19(1)(a) of the NEMA EIA Regulations, 2014, as amended, which states that: *“Where basic assessment must be applied to an application, the applicant must, within 90 days of receipt of the application by the competent authority, submit to the competent authority - (a) a basic assessment report, inclusive of specialist reports, an EMPr, and where applicable a closure plan, which have 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.”*

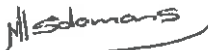
Should there be significant changes or new information that has been added to the BAR or EMPr which changes or information was not contained in the reports or plans consulted on during the initial public participation process, you are required to comply with Regulation 19(b) of the NEMA EIA Regulations, 2014, as amended, which states: *“the applicant must, within 90 days of receipt of the application by the competent authority, submit to the competent authority – (b) a notification in writing that the basic assessment report, inclusive of specialist reports an EMPr, and where applicable, a closure plan, will be submitted within 140 days of receipt of the application by the competent authority, as significant changes have been made or significant new information has been added to the basic assessment report or EMPr or, where applicable, a closure plan, which changes or*

information was not contained in the reports or plans consulted on during the initial public participation process contemplated in subregulation (1)(a) and that the revised reports or, EMPr or, where applicable, a closure plan will be subjected to another public participation process of at least 30 days”.

Should you fail to meet any of the timeframes stipulated in Regulation 19 of the NEMA EIA Regulations, 2014, as amended, your application will lapse.

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 faithfully



Mr Sabelo Malaza
Chief Director: Integrated Environmental Authorisations
Department of Environment, Forestry and Fisheries
Letter signed by: Ms Milicent Solomons
Designation: Director: Priority Infrastructure Projects
Date: 21/08/2020.

cc:	Mr P Ndebele	Emvelo Capital Projects (Pty) Ltd	E-mail: pancho@emvelo.co.za
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DEFF

Biodiversity Conservation



environment, forestry & fisheries

Department: Environment, Forestry
and Fisheries
REPUBLIC OF SOUTH AFRICA

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Reference: Upilanga PV1 & PV2 Facility

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PER E-MAIL

Dear Ms Venter

COMMENTS FOR DRAFT BASIC ASSESSMENT REPORT FOR THE PROPOSED DEVELOPMENT OF UPILANGA SOLAR PHOTOVOLTAIC (PV) PV1 AND PV2 FACILITY AND ASSOCIATED INFRASTRUCTURE NEAR UPINGTON, NORTHERN CAPE PROVINCE.

The Directorate: Biodiversity Conservation reviewed and evaluated the aforementioned draft report. Based on the information provided in the report, the proposed development falls within Upington Renewable Energy Development Zone (REDZ) which is an area identified as highly suitable for the development of a solar energy facilities.

Notwithstanding the above, the following recommendation must be considered in the final report:

- Search and rescue plan for the identified Species of Conservation Concern (SCC) must be submitted as part of the final report;
- Permits from relevant authorities must be obtained prior commencement of any construction activities for the removal or disturbance of any TOPs, Red Data listed or Provincially protected species;
- Erosion and Alien Plant Species Management Plan, and Rehabilitation Plan must be submitted as part of the final report to mitigate on habitat degradation due to erosion and alien plant invasion; and



- Sensitive areas in close proximity to the development footprint must be demarcated as no-go area i.e. drainage features, pans and quartz patches.

The final report must comply with all the requirements as outlined in the Environmental Impact Assessment (EIA) guideline for renewable energy projects and the Revised Best Practice Guideline for Birds & Solar Energy for assessing and monitoring the impact of solar power generating facilities on birds in Southern Africa

Yours faithfully



Mr. Seoka Lekota
Control Biodiversity Officer Grade B: Biodiversity Conservation
Department of Environment, Forestry & Fisheries
Date: 04/09/2020

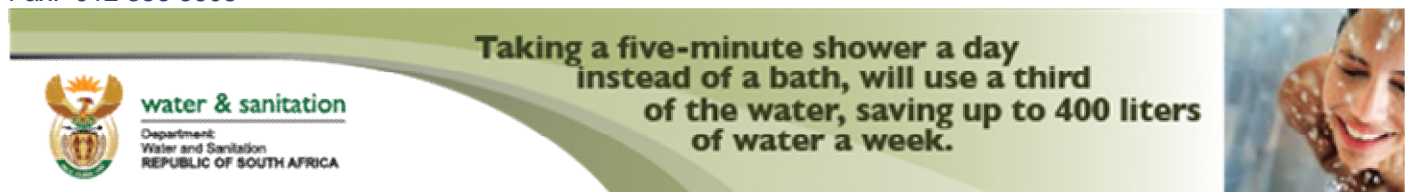
DWS

Savannah Public Process

From: Ackerman Pieter <AckermanP@dws.gov.za>
Sent: Monday, August 31, 2020 9:40 AM
To: Savannah Public Process
Cc: Mulaudzi Nkhumbudzeni; Kuse Lumka; Roets Wietsche; Meulenbeld Paul; Khosa Tsunduka; Tonjeni Mzuvukile; Bila-Mupariwa Ntombizanele Mary; Dhlamini Nthabiseng
Subject: RE: Upilanga PV1 & PV2: BAR Notification review and comment period ending soon

Hi
Please investigate if a water use authorisation is required.
Regards

Pieter Ackerman (PrLArch)
Chief Landscape Architect
Department of Water and Sanitation (DWS), South Africa
Sub Directorate Instream Water Use
Tel: 012 336 8217
Cell: 082 807 3512
Fax: 012 336 6608



From: Public Process [mailto:publicprocess@savannahsa.com]
Sent: 28 August 2020 04:45 PM
To: Ackerman Pieter
Subject: Upilanga PV1 & PV2: BAR Notification review and comment period ending soon

UPILANGA PHOTOVOLTAIC (PV) ONE AND UPILANGA PHOTOVOLTAIC (PV) TWO DEVELOPMENTS AND ASSOCIATED INFRASTRUCTURE NEAR UPINGTON, NORTHERN CAPE PROVINCE

Dear Stakeholder and Interested and Affected Party,

With reference to the attached notification letter sent on Monday, 03 August 2020 attached to the e-mail notification below, this e-mail serves to inform you that the comment period for the Basic Assessment Report (BAR) is ending on **Friday, 04 September 2020**. As you may recall, the review and comment period for the BAR was from Monday, 03 August 2020 to Friday, 04 September 2020.

Thank you to those Stakeholders and Interested and Affected Parties who submitted their written comments and those who had not yet submitted written comments, we kindly request that you do so before or on **Friday, 04 September 2020**.

Kind regards,



t: 011 656 3237
f: 086 684 0547

Nicolene Venter
Public Process

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SAWEA Award for Leading Environmental Consultant on Wind Projects in 2013 & 2015

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ESKOM

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.

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	SCOT	Technology
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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

Revision: 1

Total Pages: 9

Next Review Date: N/A

Disclosure Classification: CONTROLLED DISCLOSURE

Compiled by



J W Chetty
Mechanical Engineer

Date: 23/11/2018

Approved by



B Ntshuntsha
Chief Engineer (Lines)

Date: 24/11/2018

Authorised by



R A Vajeth
Snr Manager (Lines) and SCOT/SCI Chairperson

Date: 16/11/2018

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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 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.

Safety distances of wind turbines from other structures as implemented by other countries were also considered and the reasons for their selection were noted.

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.

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. The document specifies setback distances for transmission lines (220 kV to 765 kV), distribution lines (6.6 kV to 132 kV) and all Eskom substations. 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

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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.

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.

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
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
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

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)

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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 personnel involved in the positioning wind turbines, concentrated solar plants and photovoltaic plants near power lines/substations must follow the setbacks outlined in this guideline.

2.6 PROCESS FOR MONITORING

Approval by Eskom in writing.

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. 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 [5.0×10^{-5}]^[8], the distances recorded were significant [750m]^[8]

Setbacks were thus introduced to prevent any damage to Eskom infrastructure.

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

Concentrated solar plants and photovoltaic plants also can limit access into the substation for power lines of all voltages. A setback distance must therefore be employed to prevent the substation from being boxed in by these generation plants. These setback distances are specified in this document.

3.2 ESKOM REQUIRED SETBACKS

A formal application must be sent to and accepted by Eskom if any of the below mentioned setback distances are infringed upon:

- Eskom requires 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 requires 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.
- An application must be sent to Eskom regarding any proposed wind turbine, concentrated solar plants and photovoltaic activity within a 5 km radius of a substation for Eskom to comment on the application.
- Where concentrated solar plants and photovoltaic structures fall within a 2 km radius of the closest point of a transmission or distribution substation (66kV to 765kV), Eskom should be applied to for approval in writing during the planning phase of such plant or structures.
- Applicants must not position any wind turbine in the line of site between and two Eskom Radio Telecommunication masts. It must be proven that Eskom radio telecommunication systems (mainly microwave systems) will not be affected in any way by wind turbines.
- If the position or size of any turbine changes and subsequently infringes on any of the above stated setbacks, an application must be sent through to Eskom as per the point mentioned above.

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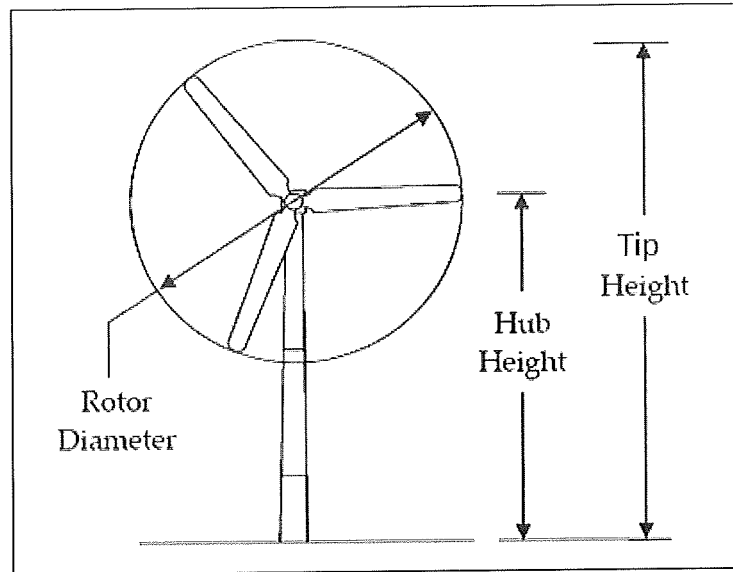


Figure 1: Horizontal Axis Wind Turbine ^[2]

4. AUTHORISATION

This document has been seen and accepted by:

Name & Surname	Designation
V Naidoo	Chief Engineer
Dr P H Pretorius	Electrical Specialist
J Geeringh	Snr Consultant Environ Mngt
B Haridass	Snr Consultant Engineer
R A Vajeth	Acting Snr Manager (Lines)

5. REVISIONS

Date	Rev.	Compiler	Remarks
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

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6. DEVELOPMENT TEAM

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

Jonathan W Chetty (Mechanical Engineer)

Vivendhra Naidoo (Chief Engineer)

Dr Pieter H Pretorius (Electrical Specialist)

John Geeringh (Snr Consultant Environ Mngt)

Bharat Haridass (Snr Consultant Engineer)

Riaz A Vajeth (Acting Snr Manager (Lines))

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SARAO

Savannah Environmental Pty (Ltd)
First Floor, Block 2
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Cnr Woodland Dr & Western
Service Road
Woodmead
2191
Email: niclene@savannahsa.com
Date: 04 September 2020

To whom it may concern

**RE: SARAO'S COMMENTS OF THE BASIC ASSESSMENT REPORT FOR
UPILANGA PV1 AND UPILANGA PV2 SOLAR PROJECTS IN THE NORTH-
ERN CAPE PROVINCE.**

SARAO has completed the preliminary risk re-assessment with regard to the electromagnetic emissions of the for the above-mentioned solar PV facilities and its possible impact on the SKA radio telescope.

In order to fully determine the level of risk on interference to the SKA Infrastructure Territory, SARAO requires an inventory of electrical equipment that will be deployed at the facility. However, based on the location, spectral density at the facility should not exceed **-46 dBm/Hz** in order to fall within the Karoo Central Astronomy Advantage Areas Regulations compliance limits.

Based on other recently assessed solar PV projects in the vicinity, we have determined that the risk level is from low to medium. Each project is, however, unique and dependant on electrical equipment installed (or proposed) and subsequent radiated emissions.

SARAO does not object the projects but would appreciate if an inventory of electrical equipment could be provided at a later stage, so that re-assessment can be undertaken and a EMI control plan should put in place if the emissions

www.ska.ac.za

The South African Radio Astronomy Observatory (SARAO) is a National Facility managed by the National Research Foundation and incorporates all national radio astronomy telescopes and programmes. SARAO is responsible for implementing the Square Kilometre Array (SKA) in South Africa.

exceeds the compliance limits. Thank you for your patience and our office remains open for any discussion relating to this project and its impact on the SKA radio telescope.

Regards,



Mr Selaelo Matlhane
Spectrum & Telecommunication Manager
South African Radio Astronomy Observatory (SARAO)
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CaseID: 15336

Date: Wednesday September 02, 2020
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Final Comment

In terms of Section 38(4), 38(8) of the National Heritage Resources Act (Act 25 of 1999)

Attention: Emvelo Capital Projects (Pty) Ltd.

Establishment of the Upington Ilanga Solar Park (Upilanga Solar Park) Development, using concentrating solar generation technology and photovoltaic technology, on sites located approximately 30 km east of Upington within the Dawid Kruiper Local Municipality, which falls under the ZF Mgcau District in the Northern Cape.

Savannah Environmental (Pty) Ltd has been appointed by Emvelo Capital Projects (Pty) Ltd to conduct an Environmental Authorisation (EA) Application for the proposed Upilanga PV 1 Solar facility near Upington, Northern Cape Province.

A draft Basic Assessment Report (dBAR) has been submitted in terms of the National Environmental Management Act, no 107 of 1998 (NEMA) and the NEMA Environmental Impact Assessment (EIA) Regulations. The proposed infrastructure will include solar panels, underground grid connection, on-site substation, transformer facility, underground cables between panels, internal access roads, laydown area, operation and maintenance buildings, electrified perimeter fencing and security infrastructure. The total extent of the development area will be 350 ha. The proposed development is located within Focus Area 7 of the Renewable Energy Development Zones i.e. the Upington REDZ.

CTS Heritage have been appointed to provide heritage specialist input as part of the BAR process as required by section 24(4)b(iii) of NEMA and section 38(3) and 38(8) of the National Heritage Resources Act, Act 25 of 1999 (NHRA).

Lavin, J. 2020. Heritage Impact Assessment in terms of section 38(8) of the NHRA for the Proposed development of Ilanga 1 100MW Solar PV Facility and associated infrastructure on a site near Upington in the Northern Cape Province.

Recommendations provided in the report include the following:

- No mitigation is required prior to construction operations commencing.
- During the construction phase all deeper (> 1 m) excavations into sedimentary bedrock should be



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monitored for fossil remains by the responsible Environmental Control Officer (ECO). Should substantial fossil remains such as vertebrate bones and teeth, petrified wood, plant-rich fossil lenses or dense fossil burrow assemblages be exposed during construction, the responsible ECO should safeguard these, preferably in situ, and alert the South African Heritage Resources Authority (SAHRA) so that appropriate action can be taken by a professional palaeontologist,

- Should any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources be found during the proposed development, SAHRA APM Unit (Natasha Higgitt/Phillip Hine 021 462 5402) must be alerted.
- If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Mimi Seetelo 012 320 8490), must be alerted immediately as per section 36(6) of the NHRA. A professional archaeologist must be contracted as soon as possible to inspect the findings. A Phase 2 rescue excavation operation may be required subject to permits issued by SAHRA.
- The above recommendations must be included in the Environmental Management Programme (EMPr) for the project

The HIA was informed by results from the following two reports:

Lavin, J and Wiltshire, N. 2019. Archaeological Specialist Study in terms of Section 38(8) of the NHRA for a proposed development of 3 X 350MW and 6 X 100MW PV facilities without battery storage and 1 X 350MW CSP facility (tower), near Upington, Northern Cape Province.

This report assessed several solar facilities. Only the results for Upilanga PV 1 Solar will be discussed here.

Wide spread surface scatters of Stone Age artefacts were identified within the proposed project area. No further heritage resources were identified within the proposed development area.

Almond, J. E. 2015. Proposed Ilanga CSP 7, 8 (tower) and 9 (trough) Facilities and associated infrastructure within the Karoshoek Solar Valley Development near Upington, ZF Mgqawu District, Northern Cape.

This report assessed several solar facilities. Only the results for Upilanga PV 1 Solar will be discussed here.

The proposed development area is underlain by Precambrian igneous and metamorphic rocks, which are overlain by Gordonia Formation dune sands. The Precambrian rocks do not contain fossils, while the Gordonia



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sediments are not generally conducive to fossil preservation.

Final Comment

The following comments are made as a requirement in terms of section 3(4) of the NEMA Regulations and section 38(8) of the NHRA in the format provided in section 38(4) of the NHRA and must be included in the Final BAR and EMPr:

- 38(4)a – The SAHRA Archaeology, Palaeontology and Meteorites (APM) Unit has no objections to the proposed development;
- 38(4)b – The recommendations of the specialists are supported and must be adhered to. No further additional specific conditions are provided for the development;
- 38(4)c(i) – If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (Natasha Higgitt/Phillip Hine 021 462 5402) must be alerted as per section 35(3) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule;
- 38(4)c(ii) – If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase/Mimi Seetelo 012 320 8490), must be alerted immediately as per section 36(6) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule;
- 38(4)d – See section 51(1) of the NHRA;
- 38(4)e – The following conditions apply with regards to the appointment of specialists:
 - i) If heritage resources are uncovered during the course of the development, a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the heritage resource. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA;
- The Final BAR and EMPr must be submitted to SAHRA for record purposes;
- The decision regarding the EA Application must be communicated to SAHRA and uploaded to the SAHRIS Case application.

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

Our Ref:



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CaseID: 15336

Date: Wednesday September 02, 2020
Page No: 4

Yours faithfully

Natasha Higgitt
Heritage Officer
South African Heritage Resources Agency

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

ADMIN:

Direct URL to case: <http://www.sahra.org.za/node/538578>
(DEA, Ref:)

Terms & Conditions:

1. This approval does not exonerate the applicant from obtaining local authority approval or any other necessary approval for proposed work.
2. If any heritage resources, including graves or human remains, are encountered they must be reported to SAHRA immediately.
3. SAHRA reserves the right to request additional information as required.