

**COMMENTS RECEIVED**

OMGEWINGSIMPAKEVALUERINGSPROSES

BYKOMENDE KSK-AANLEGTE WAT GEPAARD GAAN MET DIE GEMAGTIGDE KSK-TERREINE (1.3, 1.4, 3, 4 & 5) SOWEL AS GEPAARDGAANDE LINEERE INFRASTRUKTUUR IN DIE KAROSHOK SONVALLEIPARK, NOORD-KAAPPROVINSIE  
OPENBARE DEELNAMEPROSES REGISTRASIE/KOMMENTAAR VORM

Stuur voltooide registrasie/kommentaar vorm aan: **Gabriele Wood** van **Savannah Environmental (Edms.) Bpk**

Faks: 086 699 5796

Telefoon: 011 6563237

E-pos: gabriele@savannahsa.com

Posadres: **Posbus 148 Sunninghill 2157**

**Verskaf asseblief u persoonlike kontak besonderhede:**

Naam & Van:

Organisasie & Rol:

Posadres:

Telefoon:

Faks:

Daniele Strauss	
—	
Box 106	
Lanseria 8800	
054 3322863	Selfoon: 083 749 2885
	E-pos:

**Stel u belang om te registreer as 'n belangstellende en/of geaffekteerde party (B&GP)?** (Merk met X) JA   
NEE

Nota: Dit word van u vereis om te registreer as 'n B&GP om alle toekomstige inligting in verband met die Omgewingsimpakevalueringsproses te ontvang.

**Verduidelik u belangstelling in hierdie projek** (gebruik addisionele bladsye indien nodig):

*seem te wêreld is op my plaas gekloof uitgeken*

**Lys u vrae, opinies of besorhede in verband met hierdie projek** (gebruik addisionele bladsye indien nodig):

*geen vrae is bygevoeg*

**Verskaf bykommende kontak besonderhede van addisionele persoon/e wie u beskou as potensiële belangstellende en/of geaffekteerde partye:**

Naam & Van:

Organisasie & Rol:

Posadres:

Telefoon:

Faks:

/	
/	
/	Selfoon:
	E-pos:



(Sien omkeer bladsy vir Engels)

**ENVIRONMENTAL IMPACT ASSESSMENT PROCESS**  
**ADDITIONAL CSP FACILITIES ASSOCIATED WITH AUTHORISED CSP SITES (1.3, 1.4, 3, 4 & 5), AS**  
**WELL AS ASSOCIATED LINEAR INFRASTRUCTURE WITHIN THE KAROSHOEK SOLAR VALLEY PARK,**  
**NORTHERN CAPE PROVINCE**  
**STAKEHOLDER REGISTRATION /COMMENT SHEET**

Return completed reply form to: **Gabriele Wood** of **Savannah Environmental (Pty) Ltd**

Fax: 086 699 5796

Phone: 011 6563237

E-mail: gabriele@savannahsa.com

Postal Address: P O Box 148 Sunninghill 2157

**Please provide your complete contact details:**

Name & Surname:	Danie Strauss		
Organisation & Designation:			
Postal Address:	PO Box 106		
	Upington, 8800		
Telephone:	054-332-2863	Cellphone:	083-249-2885
Fax:		E-mail:	

**Would you like to register as an interested and affected party (I&AP)?** YES  NO   
 (please tick the relevant box)

Note: Please register as an I&AP to receive further correspondence regarding the EIA process for the project. Once registered on the project database, your contact details MAY be included in public documentation.

**Please state your interest in the project** (add additional pages if necessary):

A servitude has been registered on my farm Vaalkoppies.

**Please list your questions, views or concerns regarding the project** (add additional pages if necessary):

No map is attached.

**Please provide contact details of other persons who you regard as a potential interested or affected party:**

Name & Surname:			
Organisation & Designation:			
Postal Address:			
Telephone:		Cellphone:	
Fax:		E-mail:	



(Sien keersy vir Afrikaans)

**OMGEWINGSIMPAKEVALUERINGSPROSES**  
**BYKOMENDE KSK-AANLEGTE WAT GEPAARD GAAN MET DIE GEMAGTIGDE KSK-TERREINE (1.3, 1.4,**  
**3, 4 & 5) SOWEL AS GEPAARDGAANDE LINEERE INFRASTRUKTUUR IN DIE KAROSHOEK**  
**SONVALLEIPARK, NOORD-KAAPROVINSIE**  
**OPENBARE DEELNAMEPROSES REGISTRASIE/KOMMENTAAR VORM**

Stuur voltooide registrasie/kommentaar vorm aan: **Gabriele Wood** van **Savannah Environmental (Edms.) Bpk**

Faks: 086 699 5796

Telefoon: 011 6563237

E-pos: gabriele@savannahsa.com

Posadres: **Posbus 148 Sunninghill 2157**

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NEE

Nota: Dit word van u vereis om te registreer as 'n B&GP om alle toekomstige inligting in verband met die Omgewingsimpakevalueringproses te ontvang.

**Verduidelik u belangstelling in hierdie projek** (gebruik addisionele bladsye indien nodig):

**Lys u vrae, opinies of besorghede in verband met hierdie projek** (gebruik addisionele bladsye indien nodig):

**Verskaf bykommende kontak besonderhede van addisionele persoon/e wie u beskou as potensiële belangstellende en/of geaffekteerde partye:**

Naam & Van:			
Organisasie & Rol:			
Posadres:			
Telefoon:	Selfoon:		
Faks:	E-pos:		



(Sien omkeer bladsy vir Engels)

## Gabriele Wood

---

**From:** John Geeringh <GeerinJH@eskom.co.za>  
**Sent:** 20 April 2016 12:41  
**To:** Gabriele Wood  
**Subject:** RE: EIA PROCESS - ADDITIONAL CSP FACILITIES (CSP 2 – 5 & CSP TOWER 1) ASSOCIATED WITH AUTHORISED CSP SITES (1.3, 1.4, 3, 4 & 5) WITHIN THE KAROSHOEK SOLAR VALLEY PARK, NORTHERN CAPE - NOTICE OF AVAILABILITY OF EIA REPORTS FOR REVIEW AND PUBLIC OPEN DAY  
**Attachments:** Eskom requirements for work in or near Eskom servitudes SOLAR (3).doc; Renewable Energy Generation Plant Setbacks to Eskom Infrastructure - Signed.pdf

Please find attached Eskom requirements for works at or near Eskom infrastructure

Regards

John Geeringh (Pr Sci Nat)  
Senior Consultant Environmental Management

Eskom GC: Land Development  
Megawatt Park  
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P O Box 1091  
Johannesburg  
2000

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Fax: 086 661 4064  
Cell: 083 632 7663

---

**From:** Gabriele Wood [mailto:gabriele@savannahsa.com]  
**Sent:** 19 April 2016 04:44 PM  
**Subject:** EIA PROCESS - ADDITIONAL CSP FACILITIES (CSP 2 – 5 & CSP TOWER 1) ASSOCIATED WITH AUTHORISED CSP SITES (1.3, 1.4, 3, 4 & 5) WITHIN THE KAROSHOEK SOLAR VALLEY PARK, NORTHERN CAPE - NOTICE OF AVAILABILITY OF EIA REPORTS FOR REVIEW AND PUBLIC OPEN DAY

Dear Stakeholder

**Emvelo Holdings (Pty) Ltd**, an independent power developer of concentrated solar power (CSP) plants, is in the process of investigating additional CSP facilities immediately adjacent to **authorised** CSP sites (1.3, 1.4, 3, 4 & 5) within the **Karoshhoek Solar Valley Development** on sites located approximately 30 km east of Upington within the Khara Hais Local Municipality in the Northern Cape. The purpose of the additional CSP facilities to be investigated is to facilitate the increase in capacity of each authorised facility to 150MW in order to meet the generating capacity thresholds specified by the Department of Energy's (DoE) in its Expedited Bid Window of the Renewable Energy Independent Power Producers Procurement (REIPPP) Programme (Tender No: DOE/003/13/14 – as amended from time to time). In this regard, the following is proposed:

**Authorised Sites**      **Additional Projects Proposed**

**DEA Reference No.**

(as described  
in Table 1  
above)

Site 1.3	Ilanga CSP 2 50MW Parabolic Trough	14/12/16/3/3/2/861
Site 1.4	Ilanga CSP 5 50MW Parabolic Trough	14/12/16/3/3/2/864
Site 3	Ilanga Tower 1 100MW (with a maximum tower height of 270m)	14/12/16/3/3/2/866
Site 4	Ilanga CSP 3 50MW Parabolic Trough	14/12/16/3/3/2/862
Site 5	Ilanga CSP4 50 MW Parabolic Trough	14/12/16/3/3/2/868

Savannah Environmental has been appointed as the independent environmental consultant to undertake the required Scoping and EIA processes to identify and assess all the potential environmental impacts associated with the proposed project. Separate Environmental Impact Assessment Reports have been prepared for each of the aforementioned projects and will be available for review and comment by Interested and Affected Parties as outlined in the attached letter. Kindly refer to the attached notification letter for further details regarding the public review periods and the details of the public open day meeting which will be held for these projects.

Please do not hesitate to contact me if you have any queries in this regard.

Kind regards

**Mrs Gabriele Wood**

**Public Participation and Social Consultant**

**Savannah Environmental (Pty) Ltd**

**Tel: 27 11 656 3237**


**Fax: 086 684 0547**

**Email: [gabriele@savannahsa.com](mailto:gabriele@savannahsa.com)**

**[www.savannahsa.com](http://www.savannahsa.com)**

I'm part of the 49Million initiative...  
<http://www.49Million.co.za>

NB: This Email and its contents are subject to the Eskom Holdings SOC Limited EMAIL LEGAL NOTICE which can be viewed at [http://www.eskom.co.za/Pages/Email\\_Legal\\_Spam\\_Disclaimer.aspx](http://www.eskom.co.za/Pages/Email_Legal_Spam_Disclaimer.aspx)

	<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**

Revision: **0**

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Next Review Date: **N/A**

Disclosure Classification: **CONTROLLED DISCLOSURE**


**Compiled by**



**J W Chetty**  
**Mechanical Engineer**

Date: 20/02/2014

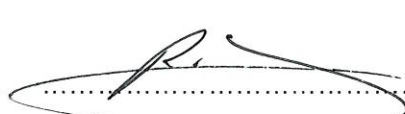
**Approved by**



**V Naidoo**  
**Chief Engineer (Lines)**

Date: 24/02/2014

**Authorised by**



**R A Vajeth**  
**Acting Snr Manager (Lines)**

Date: 27/2/2014

**Supported by SCOT/SC**



**R Vajeth**  
**SCOT/SC/ Chairperson**

Date: 27/2/2014

PCM Reference: 240-65132732 **LINE ENGINEERING SERVICES**

SCOT Study Committee Number/Name : **OVERHEAD LINES**

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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](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

## 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 [ $5.0 \times 10^{-5}$ ]<sup>[8]</sup>, the distances recorded were significant [750m]<sup>[8]</sup>

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**

- 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.
- 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.
- Eskom must be informed of any proposed wind turbine, concentrated solar plants and photovoltaic activity within a 5 km radius of a substation. No wind turbine structure shall be built within a 2 km radius of the closest point of the substation. Where concentrated solar plants and photovoltaic structures fall within a 2 km radius of the closest point of a substation, Eskom should be informed in writing during the planning phase of the construction of such plant or structure.
- Applicants must show that Eskom radio telecommunication systems (mainly microwave systems) will not be affected in any way by wind turbines.

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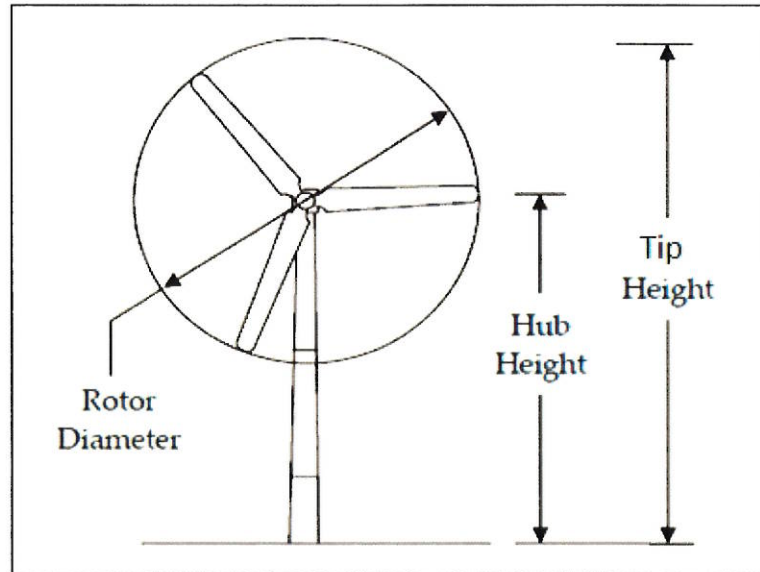


Figure 1: Horizontal Axis Wind Turbine <sup>[2]</sup>

**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

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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))

### **CONTROLLED DISCLOSURE**

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## 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)

Senior Consultant Environmental Management  
Eskom GC: Land Development

## Gabriele Wood

---

**From:** Leonard Shaw (LS) <ShawLS@telkom.co.za>  
**Sent:** 21 April 2016 13:52  
**To:** Gabriele Wood  
**Subject:** RE: EIA PROCESS - ADDITIONAL CSP FACILITIES (CSP 2 – 5 & CSP TOWER 1) ASSOCIATED WITH AUTHORISED CSP SITES (1.3, 1.4, 3, 4 & 5) WITHIN THE KAROSHOEK SOLAR VALLEY PARK, NORTHERN CAPE - NOTICE OF AVAILABILITY OF EIA REPORTS FOR REVIEW AND PUBLIC OPEN DAY

Good day Gabriele,

As discussed I am trying to map the area of the Karoshoek Solar Valley. Can you provide a geo file (KMZ) of the various Ilanga sites 1 to 9 ?

Kind regards,

**Leonard S Shaw Pr.Tech.(Eng.)**  
Specialist : Network Transformation and Planning

Tel: +27 (0)12 311-2012  
Mobile: +27 (0)81 428-6729



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---

**From:** Gabriele Wood [mailto:gabriele@savannahsa.com]  
**Sent:** Tuesday, April 19, 2016 4:44 PM  
**Subject:** EIA PROCESS - ADDITIONAL CSP FACILITIES (CSP 2 – 5 & CSP TOWER 1) ASSOCIATED WITH AUTHORISED CSP SITES (1.3, 1.4, 3, 4 & 5) WITHIN THE KAROSHOEK SOLAR VALLEY PARK, NORTHERN CAPE - NOTICE OF AVAILABILITY OF EIA REPORTS FOR REVIEW AND PUBLIC OPEN DAY

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**Emvelo Holdings (Pty) Ltd**, an independent power developer of concentrated solar power (CSP) plants, is in the process of investigating additional CSP facilities immediately adjacent to **authorised** CSP sites (1.3, 1.4, 3, 4 & 5) within the **Karoshoek Solar Valley Development** on sites located approximately 30 km east of Upington within the Khara Hais Local Municipality in the Northern Cape. The purpose of the additional CSP facilities to be investigated is to facilitate the increase in capacity of each authorised facility to 150MW in order to meet the generating capacity thresholds specified by the Department of Energy's (DoE) in its Expedited Bid Window of the Renewable Energy Independent Power Producers Procurement (REIPPP) Programme (Tender No: DOE/003/13/14 – as amended from time to time). In this regard, the following is proposed:

**Authorised Sites**      **Additional Projects Proposed**

**DEA Reference No.**

(as described  
in Table 1  
above)

Site 1.3	Ilanga CSP 2 50MW Parabolic Trough	14/12/16/3/3/2/861
Site 1.4	Ilanga CSP 5 50MW Parabolic Trough	14/12/16/3/3/2/864
Site 3	Ilanga Tower 1 100MW (with a maximum tower height of 270m)	14/12/16/3/3/2/866
Site 4	Ilanga CSP 3 50MW Parabolic Trough	14/12/16/3/3/2/862
Site 5	Ilanga CSP4 50 MW Parabolic Trough	14/12/16/3/3/2/868

Savannah Environmental has been appointed as the independent environmental consultant to undertake the required Scoping and EIA processes to identify and assess all the potential environmental impacts associated with the proposed project. Separate Environmental Impact Assessment Reports have been prepared for each of the aforementioned projects and will be available for review and comment by Interested and Affected Parties as outlined in the attached letter. Kindly refer to the attached notification letter for further details regarding the public review periods and the details of the public open day meeting which will be held for these projects.

Please do not hesitate to contact me if you have any queries in this regard.

Kind regards

**Mrs Gabriele Wood**

**Public Participation and Social Consultant**

**Savannah Environmental (Pty) Ltd**

**Tel: 27 11 656 3237**

**Fax: 086 684 0547**

**Email: [gabriele@savannahsa.com](mailto:gabriele@savannahsa.com)**

**[www.savannahsa.com](http://www.savannahsa.com)**

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## Gabriele Wood

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**From:** Gabriele Wood <gabriele@savannahsa.com>  
**Sent:** 17 May 2016 17:11  
**To:** 'Leonard Shaw (LS)'  
**Subject:** RE: EIA PROCESS - ADDITIONAL CSP FACILITIES (CSP 2 – 5 & CSP TOWER 1) ASSOCIATED WITH AUTHORISED CSP SITES (1.3, 1.4, 3, 4 & 5) WITHIN THE KAROSHOEK SOLAR VALLEY PARK, NORTHERN CAPE - NOTICE OF AVAILABILITY OF EIA REPORTS FOR REVIEW AND PUBLIC OPEN DAY  
**Attachments:** Ilanga Infrastructure Footprints 10.05.2016.kmz; Karoshoek Solar Park Projects sites\_Consolidated\_Layout Map \_14.04.16.jpg

Dear Leonard

Please find the maps and .kmz showing all projects as requested.

Kind regards

**Gabriele Wood**

Public Participation and Social Consultant | Savannah Environmental (Pty) Ltd  
Tel: +27 11 656 3237 | Fax: +27 86 684 0547

---

**From:** Leonard Shaw (LS) [mailto:ShawLS@telkom.co.za]  
**Sent:** 21 April 2016 13:52  
**To:** Gabriele Wood <gabriele@savannahsa.com>  
**Subject:** RE: EIA PROCESS - ADDITIONAL CSP FACILITIES (CSP 2 – 5 & CSP TOWER 1) ASSOCIATED WITH AUTHORISED CSP SITES (1.3, 1.4, 3, 4 & 5) WITHIN THE KAROSHOEK SOLAR VALLEY PARK, NORTHERN CAPE - NOTICE OF AVAILABILITY OF EIA REPORTS FOR REVIEW AND PUBLIC OPEN DAY

Good day Gabriele,

As discussed I am trying to map the area of the Karoshoek Solar Valley. Can you provide a geo file (KMZ) of the various Ilanga sites 1 to 9 ?

Kind regards,

**Leonard S Shaw Pr.Tech.(Eng.)**

Specialist : Network Transformation and Planning

Tel: +27 (0)12 311-2012  
Mobile: +27 (0)81 428-6729



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**From:** Gabriele Wood [mailto:gabriele@savannahsa.com]  
**Sent:** Tuesday, April 19, 2016 4:44 PM  
**Subject:** EIA PROCESS - ADDITIONAL CSP FACILITIES (CSP 2 – 5 & CSP TOWER 1) ASSOCIATED WITH

Dear Stakeholder

**Emvelo Holdings (Pty) Ltd**, an independent power developer of concentrated solar power (CSP) plants, is in the process of investigating additional CSP facilities immediately adjacent to **authorised** CSP sites (1.3, 1.4, 3, 4 & 5) within the **Karoshhoek Solar Valley Development** on sites located approximately 30 km east of Upington within the Khara Hais Local Municipality in the Northern Cape. The purpose of the additional CSP facilities to be investigated is to facilitate the increase in capacity of each authorised facility to 150MW in order to meet the generating capacity thresholds specified by the Department of Energy's (DoE) in its Expedited Bid Window of the Renewable Energy Independent Power Producers Procurement (REIPPP) Programme (Tender No: DOE/003/13/14 – as amended from time to time). In this regard, the following is proposed:

<b>Authorised Sites</b>	<b>Additional Projects Proposed</b>	<b>DEA Reference No.</b>
(as described in Table 1 above)		
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Please do not hesitate to contact me if you have any queries in this regard.

Kind regards

**Mrs Gabriele Wood**

**Public Participation and Social Consultant**

**Savannah Environmental (Pty) Ltd**

**Tel: 27 11 656 3237**

**Fax: 086 684 0547**

**Email: [gabriele@savannahsa.com](mailto:gabriele@savannahsa.com)**

**[www.savannahsa.com](http://www.savannahsa.com)**

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## Gabriele Wood

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**From:** Samantha De la Fontaine <[sdelafontaine@gmail.com](mailto:sdelafontaine@gmail.com)>  
**Sent:** 04 May 2016 11:55  
**To:** Gabriele Wood  
**Cc:** JacolineMa; Elsabe Swart  
**Subject:** Re: EIA PROCESS - ADDITIONAL CSP FACILITIES (CSP 2 – 5 & CSP TOWER 1) ASSOCIATED WITH AUTHORISED CSP SITES (1.3, 1.4, 3, 4 & 5) WITHIN THE KAROSHOEK SOLAR VALLEY PARK, NORTHERN CAPE - NOTICE OF AVAILABILITY OF EIA REPORTS FOR REVIEW AND PUBLIC OPEN DAY

Dear Gabriele

Please send me a kml file indicating the footprint areas for the proposed Ilanga CSP developments as well as that of the approved CSP development.

Kind regards

Samantha

-----  
Samantha De la Fontaine (Pr.Sci.Nat.)  
District Ecologist

Northern Cape Department of Environment and Nature Conservation  
Provincial Building (First Floor)  
Corner of Rivier & Nelson Mandela Road  
Upington  
8800

E-mail: [sdelafontaine@gmail.com](mailto:sdelafontaine@gmail.com)

Website: <http://denc.ncpg.gov.za/>

 Please consider the environment before printing this email

On Tue, Apr 19, 2016 at 4:43 PM, Gabriele Wood <[gabriele@savannahsa.com](mailto:gabriele@savannahsa.com)> wrote:  
Dear Stakeholder

**Emvelo Holdings (Pty) Ltd**, an independent power developer of concentrated solar power (CSP) plants, is in the process of investigating additional CSP facilities immediately adjacent to **authorised** CSP sites (1.3, 1.4, 3, 4 & 5) within the **Karoshhoek Solar Valley Development** on sites located approximately 30 km east of Upington within the Khara Hais Local Municipality in the Northern Cape. The purpose of the additional CSP facilities to be investigated is to facilitate the increase in capacity of each authorised facility to 150MW in order to meet the generating capacity thresholds specified by the Department of Energy's (DoE) in its Expedited Bid Window of the Renewable Energy Independent Power Producers Procurement (REIPPP) Programme (Tender No: DOE/003/13/14 – as amended from time to time). In this regard, the following is proposed:

<b>Authorised Sites</b>	<b>Additional Projects Proposed</b>	<b>DEA Reference No.</b>
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Please do not hesitate to contact me if you have any queries in this regard.

Kind regards

**Mrs Gabriele Wood**

**Public Participation and Social Consultant**

**Savannah Environmental (Pty) Ltd**

**Tel: [27 11 656 3237](tel:27116563237)**

**Fax: [086 684 0547](tel:0866840547)**

**Email: [gabriele@savannahsa.com](mailto:gabriele@savannahsa.com)**

**[www.savannahsa.com](http://www.savannahsa.com)**



## Gabriele Wood

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**From:** Thalita Botha <thalita@savannahsa.com>  
**Sent:** 11 May 2016 09:23  
**To:** sdelafontaine@gmail.com  
**Cc:** 'Gabriele Wood'; JacolineMa@daff.gov.za; elsabe.dtec@gmail.com; 'Tebogo Mapinga'  
**Subject:** EIA Process - Ilanga CSP Developments  
**Attachments:** Ilanga Infrastructure Footprints 10.05.2016.kmz; Karoshoek Solar Park Projects sites\_Consolidated\_Layout Map \_14.04.16.jpg

Dear Samantha,

Kindly see attach a KML file indicating the footprint areas for the proposed Ilanga CSP developments, including the authorised CSP development as requested. Please let us know if there is any other information that you may require.

Kind regards

**Thalita Botha**

Environmental Consultant  
Cell: 083 686 4538  
Email: thalita@savannahsa.com  
www.savannahSA.com

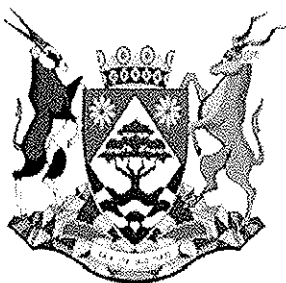


Tel: +27 11 656 3237 | Fax: +27 86 684 0547 | P.O. Box 148, Sunninghill, 2157  
1st Floor, Block 2, 5 Woodlands Drive Office Park, Woodlands Drive, Woodmead, 2191

*Awarded Leading Environmental Consultant on Wind Projects in 2013 & 2015 (SAWEA)*

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Department:  
Environment & Nature Conservation  
NORTHERN CAPE PROVINCE  
REPUBLIC OF SOUTH AFRICA

Private Bag X6102, Kimberley, 8300, Metlife Towers, T-Floor, Tel: 053 807 7300, Fax: 053 807 7328

Enquiries :  
Dipatlisilo : O Riba  
Navrae :  
Imibuzo :

Date :  
Letha : 04<sup>th</sup> May 2016  
Datum:  
Umhla :

Reference :  
Tshupelo : NC/NAT/ZFM/KHA/UPI5/2016  
Verwysing :  
Isalathiso : 14/12/16/3/3/2/864

Gabriele Woods  
Savannah Environmental  
P.O Box 148  
Sunninghill  
2157

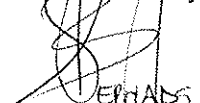
Email: [info@savannah.com](mailto:info@savannah.com)

**DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE PROPOSED ILANGA CSP5 FACILITY, NEAR UPINGTON, NORTHERN CAPE PROVINCE.**

The Department confirms having received the **Draft EI report** for public review for environmental authorisation of the above mentioned project on the **28<sup>th</sup> April 2016**. As required in term of the Environmental Impact Assessment Regulations, 2014.

The application has been assigned the reference number **NC/NAT/ZFM/KHA/UPI5/2016**. Kindly quote this reference number in any future correspondence in respect of the application. Please note the responsible officer is going to be **Mr. Ordain Riba** and can be contacted at **060 991 4817**.

Yours faithfully

  
\_\_\_\_\_  
Ms. L. Tools Bernado  
EIA: Administration



# agriculture, forestry & fisheries

Department:  
Agriculture, Forestry and Fisheries  
REPUBLIC OF SOUTH AFRICA

Directorate: Forestry Management (Other Regions)  
P.O. Box 2782, Uppington, 8800, Tel 054 338 5909, Fax 054 334 0030

Enquiries: J Mans  
E-mail: [JacolineMa@daff.gov.za](mailto:JacolineMa@daff.gov.za)  
Date: 11 May 2016  
Ref: 40.8.14.2/NC/29

Savannah Environmental (Pty) Ltd  
P.O. Box 148  
Sunninghill  
2157  
Gauteng

ATTENTION: Ms. Gabriele Wood ([Gabriele@savannahSA.com](mailto:Gabriele@savannahSA.com))

RE: COMMENTS ON DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT OF THE PROPOSED ILANGA CSP 5 (DEA REF: 14/12/16/3/3/2/864) 50 MW PARABOLIC TROUGH FACILITY AND ASSOCIATED INFRASTRUCTURE WITHIN KAROSHOEK SOLAR VALLEY, UPINGTON

## 1. DEPARTMENTAL MANDATE

The Directorate: Forestry Management (Other Regions) in the National Department of Agriculture, Forestry and Fisheries (DAFF) is responsible for implementation of the **National Forests Act, Act 84 of 1998 (NFA) and the National Veld and Forest Fires Act, Act 101 of 1998** as amended. The developer must take note of the following sections of the NFA:

### 1.1 Section 12(1): "The Minister may declare-

- (a) a particular tree,
- (b) a particular group of trees,
- (c) a particular woodland; or
- (d) trees belonging to a particular species, to be a protected tree, group of trees, woodland or species.

### 1.2 Section 15(1): "No person may-

- (a) Cut, disturb, damage or destroy any protected tree; or
- (b) Possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, or any forest product derived from a protected tree, except-
  - (i) under a license granted by the Minister; or
  - (ii) in terms of an exemption from the provision of this subsection published by the Minister in the Gazette on the advice of the Council."

- 1.3 Section 62(2)(c): “Any person who contravenes the prohibition on-
- (i) The cutting, disturbance, damage or destruction of temporarily protected trees or groups of trees referred to in section 14(2) or protected trees referred to in section 15(1)(a); or
  - (ii) The possession, collection, removal, transport, export, purchase or sale of temporarily protected trees or groups of trees referred to in section 14(2) or protected trees referred to in section 15(1)(b), or any forest product derived from a temporarily protected tree, group of trees or protected tree, is guilty of a first category offence.
- 1.4 Section 58 (1): “Any person who is guilty of a first category offence referred to in sections 62 and 63 may be sentenced to a fine or imprisonment for a period of up to three years, or to both a fine and such imprisonment.”
- 1.5 The list of protected tree species under section 12(1) (d) of the National Forests Act, 1998 (Act No. 84 of 1998) was published in GN1161 of 20 November 2015.

## 2. COMMENTS ON DRAFT EIA REPORT

- 2.1 Pages 63 and 64 of the draft EIA report refer to the NFA under applicable legislation and the need to apply for a Forest Act License to remove protected tree species. The statement is correct for species listed under the NFA such as *Boscia albitrunca*, but the examples provided refer to Red Listed plant species *Pelargonium reniforme* subsp. *reniforme* and *Brachystelma huttonii* not protected under the NFA. The examples mentioned require a Flora Permit from the DENC.
- 2.2 Pages 67 and 68 refers to the Flora Permit requirement under the Northern Cape Nature Conservation Act 9 of 2009 (NCNCA), but failed to mention that Fauna Permits may also be required under the NCNCA.
- 2.3 Under applicable legislation, no reference was made to the Sub-division of Agricultural Land Act 70 of 1970 (SALA). If the land is demarcated as ‘agricultural land’, it cannot be changed to another land use without the supported recommendation under the SALA. A local authority cannot change the zoning of demarcated agricultural land to any other zoning without a letter from the Registrar of this Act. What is the current zoning of the proposed development site and was an application to change the zoning (if zoned Agriculture) submitted to the DAFF, Registrar of the SALA, for review?

## 3. COMMENTS ON APPENDIX D: FAUNA AND FLORA SPECIALIST IMPACT ASSESSMENT

- 3.1 Page 4 of the specialist Fauna and Flora Impact Assessment Report for Ilanga CSP 5 site stated that the **density of *Boscia albitrunca* and *Boscia foetida* within the site is high with an estimated 5 trees per ha giving rise to the potential loss of 3000 trees or more from the full 600 ha development.** The inevitable impact on this keystone species is of great concern, not to mention the cumulative impacts of the larger Karoshhoek Solar Valley projects. This project alone may have significant impacts on the affected ecosystems (some of which comprise of veld types that have been significantly transformed and/or are under-protected) and loss of keystone tree species. **The Department is of the opinion that an**

offset would be triggered, should the planned project reaches preferred bidder status and that an offset requirement should be stipulated as a special condition in the Environmental Authorisation (if granted).

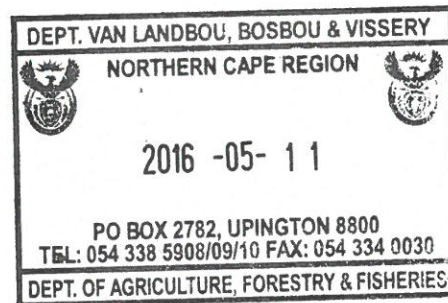
- 3.2 An offset should preferably be land formally declared as a Protected Area or Nature Reserve, of the affected Bushmanland Arid Grassland which is poorly represented in formal conservation areas. The size and location of an offset with time frames for implementation should be determined in consultation with the DAFF and the DENC (Ms. Elsabe Swart) who plays a key role in any environmental off-sets relating to the Northern Cape Province. The developer(s) are therefore encouraged to act pro-actively by appointing an off-set specialist and set up a meeting with the DAFF and DENC to present an offset proposal once preferred bidder status has been obtained. The recommendation of any off-set specialist employed may be followed, but all parties involved (including the developer, the DAFF and DENC) must agree on the exact nature, extent and location of the off-set in writing.

Thank you for allowing this Department to comment on the proposed development(s).

Kind Regards,



Jacoline Mans  
Chief Forester: NFA Regulation



23 May 2016

Mrs Gabriele Wood  
Savannah Environmental (Pty) Ltd  
Email: [gabriele@savannahsa.com](mailto:gabriele@savannahsa.com)

Dear Mrs Wood,

**RE: ENVIRONMENTAL IMPACT ASSESSMENT FOR ADDITIONAL CSP FACILITIES (CSP 2 – 5 & CSP TOWER 1) ASSOCIATED WITH AUTHORISED CSP SITES (1.3, 1.4, 3, 4 & 5) WITHIN THE KAROSHOK SOLAR VALLEY PARK, NORTHERN CAPE.**

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Ilanga CSP4 50 MW Parabolic Trough	14/12/16/3/3/2/868

BirdLife South Africa would like to thank you for the opportunity to comment on the above reports. We have chosen to comment on all applications together, as the impacts and issues are similar. We also believe that it is important to have an overview of all the proposed developments in the area, including Ilanga 7, 8 and 9 (currently also the subject of EIAs), as well as the already approved Ilanga Concentrated Solar Power (CSP) facilities.

BirdLife South Africa supports the responsible development of renewable energy. However, birds may be injured or killed at Concentrated Solar Power facilities if they collide with the reflective heliostats or troughs, or with associated infrastructure (e.g. powerlines and fences). CSP tower technology presents an additional risk to birds – they may be burned if they fly through the area of concentrated solar flux. CSP facilities may also impact on birds indirectly by destroying or degrading large areas of habitat, and displacing sensitive species. The latter impact is perhaps the easiest impact to quantify and assess.

If solar energy is to be developed without having marked negative impacts on birds, rigorous impact assessment of proposed CSP facilities is critical. We are therefore pleased to note that an avifaunal specialist has been consulted, and that he has broadly followed the recommendations in BirdLife South Africa's draft Best Practice Guidelines for birds and solar energy. However, only two site visits were conducted (one in the wet season and one in the dry season), as opposed to the four (or more) recommended in our draft guidelines for developments of this nature and scale. While the two site visits were probably adequate to obtain a representative sample of the diversity of species likely be affected by the facility, it may not be adequate to record finer details such as patterns of movement, important

habitats, breeding areas, rare species etc. This information could be important if impacts are to be properly understood and mitigated.

The avifaunal impact assessment confirmed that the sites are being used by a number of species of conservation concern including:

- Kori Bustard - Near-threatened and possibly breeding at some of the proposed development sites.
- Ludwig's Bustard - Endangered and possibly breeding.
- Secretarybird - Vulnerable, an unoccupied nest was found on site 4, but only one bird was recorded.
- Verreaux's Eagle - Vulnerable, the avifaunal reports suggest that breeding birds were recorded, but no further information is provided. Verreaux's Eagle are unlikely to breed on site, but may breed in rocky cliffs north and east of the proposed development area.
- Black Harrier (Endangered) – few details provided in report, possibly an irregular visitor?
- Lanner Falcon (Near-threatened)

A number of other species, including Rock Kestrel, Black-Chested Snake-Eagle, Northern Black Korhaan, large numbers of Namaqua Sandgrouse, and a number of water birds (attracted to a pan that is just outside the development sites, and the Orange River is further away) may also be affected by the proposed developments.

A significant challenge in assessing the impacts of CSP facilities is that there is a large degree of uncertainty with regards to how to predict and mitigate impacts. Confounding factors include that some birds may be displaced and avoid the area, while others may be attracted to the area, drawn to newly created habitats (e.g. evaporation ponds) and possibly mistaking the reflective surfaces for a waterbody.

The risk of solar collisions with reflective surfaces (heliostats and troughs) is hard to quantify, but we question the specialist's reliance on the priority list drawn up by the Birds and Wind Energy Specialist Group for wind energy. We suggest that this list may be more useful for predicting the risk of solar flux injuries, but for all technologies there are different factors at play that will affect risk and vulnerability. Flight height, time spent on the wing, and threat status may be more useful factors to use to predict the risk of solar flux injuries, while the propensity for landing on/in waterbodies and low flight heights may be more indicative of the risk of collisions with heliostats and troughs.

In addition to the uncertainty resulting from low number of site surveys, and linked to our limited understanding of how to predict impacts, there is also uncertainty surrounding the effectiveness of mitigation. CSP technology is new and most of the proposed mitigation has not been tested, and where it has been used in other contexts it has only been partially effective.

Potential mitigation include:

- *Site selection*
  - While we acknowledge that the applications are to expand existing and approved facilities, no site alternatives were assessed. It has not been demonstrated that alternative locations were adequately assessed for all phases of the development.
- *Layout*
  - The avifaunal specialist recommended avoiding specific areas (e.g. to mitigate against displacement of bustards and korhaans - assessed to be of high negative significance for many of the proposed sites). While this is included in the mitigation measures outlined in the EIA, and presumably influenced the residual significance rating, this recommendation does not appear to have been incorporated in the final proposed layouts.
  - The avifaunal specialist also recommended placing the proposed facilities as far away as possible from water sources that may attract birds. He also suggests that evaporation ponds should be located at least 1 km away from the heliostat field. Again, this has not been included in the final development layouts.
- *Habitat management*
  - Depending on the design, evaporation ponds could provide habitat for some bird species. While this may benefit some species, it could also pose a threat to birds if the water is contaminated. It may also present a risk if birds are attracted to the area as they may be vulnerable to colliding with the heliostats and troughs, or risk being burned by solar flux. We therefore support the specialist's suggestion that evaporation ponds should be covered (or placed well away from the facility) to minimise the risk to birds. While we note that the EMPr suggests that storage water reservoirs should be covered there is no mention of managing evaporation ponds in a similar manner.
  - The EIA suggests possibly "closing down" pans to minimise the risk of solar flux injuries. The impacts of this activity has not been assessed in the EIA and the pros and cons of this approach must be carefully considered.
- *Deterrents*
  - The use of bird scaring devices (e.g. prisms) may be effective, but only for a limited suite of species, and there is a risk the birds may become habituated. The suggestion to use of "tori lines" warrants investigation, but at this stage the effectiveness remains uncertain.
- *Infrastructure management/design*
  - We support the suggestion that bird-flight diverters should be put on all new spans of powerline to reduce the risk of collisions, especially for species such as bustards. However, it must be noted that this measure is not 100% effective for such species and some risk of collisions will remain.
  - The EIA suggests that the heliostats should be positioned vertically when not in use, arguing that this would lessen the collision risk. However, vertically positioned heliostats could present a collision-risk for low-flying birds, much



like the windows of building do. We suggest that heliostats should rather be tilted when being cleaned or when not in use.

- There has been some promising work on minimising the area of solar flux at power tower facilities (e.g. see Walston et al 2015). We suggest that should the development be approved, a similar approach should be adopted.

We are of the opinion that it is misleading to include mitigation measures in the assessment, if these mitigation measures are not considered feasible by the developer and have not been included in the final plan. While it would be appropriate to discuss these measures and note why they are not supported, they should not influence the assessed significance ratings “with mitigation” as reported in the EIA. For example, the specialist predicted that impacts on bustards could be reduced from high to medium significance with an altered layout, but this has not been incorporated in the final proposed development plan. The significance rating should therefore remain high.

A large number of solar facilities have been proposed in the area, including one that is already under construction (Ilanga 1). This clustering of developments has pros and cons. It presents opportunities to develop a holistic layout that minimises impacts on the environment. For example, the length of new powerlines, roads and fencing required can be rationalised, and evaporation ponds could be placed well away from **any** heliostats and troughs so that birds are drawn away from, rather than attracted to, high-risk areas.

Without proper planning for the entire development area (in all phases) it is difficult to assess if setting specific areas aside (as was suggested by the avifaunal specialist) would be effective or desirable, or if some other mitigation could be more appropriate (e.g. compensating for impacts by marking existing un-marked lines with bird flight diverters). BirdLife South Africa questions whether there has been sufficient strategic oversight to properly plan for all phases of this development.

The combined effect of the proposed developments will result in the large-scale transformation of thousands of hectares of land, and will place significant demands on water resources. Further, as more and more developments are approved, based on an incomplete understanding of how to assess and mitigate impacts, the risk of unintentional negative impacts increases. We question the wisdom of approving multiple facilities in the face of this uncertainty and suggest that a phased approach, where we can learn from and improve on the design and management of early projects, and more accurately predict the impacts of scaling up the development, would be a more prudent and precautionary strategy.

Should these proposed developments be approved, despite the predicted impacts, risks and uncertainties, BirdLife South Africa suggests that monitoring the impacts on birds at all the operational facilities is imperative. We are pleased to note that this has been included in the EMPr for the new phases of development, but it is not clear what, if any requirements for monitoring have been included in the EMPrs for the already approved facilities. We urge that if it is not already a requirement, monitoring should extend over the entire facility (i.e. not just the expanded footprint) and that this should follow the recommended protocols outlined



BirdLife South Africa is a partner of BirdLife International, a global partnership of nature conservation organisations.  
Member of IUCN (International Union for Conservation of Nature).  
Reg No: 001 – 298 NPO  
PBO Exemption No: 930004518

in the Best Practice Guidelines for Birds and Solar Energy. BirdLife South Africa requests that these monitoring reports are sent to us as this will help us develop a better understanding of the impacts across multiple sites, and will help ensure that recommendations and decisions are based on the best available information.

Yours sincerely

Samantha Ralston-Paton  
Birds and Renewable Energy Manager

with

Simon Gear  
Policy and Advocacy Manager

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Partnership for  
nature and people



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*Honorary Patrons: Mrs Gaynor Rupert, Dr Precious Moloi-Motsepe, Mr Mark Shuttleworth*

Our Ref:



an agency of the  
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South African Heritage Resources Agency | 111 Harrington Street | Cape Town  
P.O. Box 4637 | Cape Town | 8001  
www.sahra.org.za

Enquiries: Natasha Higgitt

Date: Tuesday May 24, 2016

Page No: 1

Email: nhiggitt@sahra.org.za

CaseID: 8804

## Final Comment

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

Attention: FG Emvelo

Postnet Suite 306  
Private Bag X9  
Benmore

**The construction of additional CSP facilities immediately adjacent to the authorised CSP sites (1.3, 1.4, 3, 4 & 5) within the Karoshoek Solar Valley Development and associated infrastructure on Lot 944 Karos Settlement; Portion 3 of Matjiesrivier 41; Portion 2 of Matjiesrivier 41; and Portion RE of Matjiesrivier 41, located approximately 30 km east of Upington within the Khara Hais Local Municipality in the Northern Cape**

Savannah Environmental (Pty) Ltd was appointed by Emvelo Holdings (Pty) Ltd to conduct an Environmental Impact Assessment (EIA) process in support of an Environmental Authorisation Application for the proposed Ilanga CSP 5 Facility, near Upington, Northern Cape Province. The EIA was conducted in terms of the National Environmental Management Act, 1998 (NEMA) and the EIA Regulations, 2014. The proposed Ilanga CSP 5 project will consist of an area of approximately 610 ha with infrastructure such as parabolic troughs, internal access roads, power plant/power island, power line, water abstraction point, water treatment plant, lined evaporation ponds, workshop and office buildings. Heritage Contracts and Archaeological Consulting was appointed to conduct the Archaeological Impact Assessment (AIA).

*Van der Walt, 2016. Archaeological Impact Assessment Report for the Proposed Establishment of the Ilanga CSP 5 Project, near Upington, Northern Cape Province*

Several surface occurrences of Middle Stone Age (MSA) and Late Stone Age (LSA) were recorded within the proposed development area, however these sites were given a low heritage significance rating and do not require any further mitigation measures.

Recommendations provided in the report include the following:

- Shallow pans and depressions that contain seasonal water may incorporate archaeologically significant materials and should be avoided;
- The impact area should be subjected to a walk-down prior to construction and if any sites are identified that are of significance these sites can be preserved or mitigated; and
- If during construction any possible finds such as stone tool scatters, artefacts or bone and fossil

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Enquiries: Natasha Higgitt

Date: Tuesday May 24, 2016

Page No: 2

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CaseID: 8804

remains are made, the operations must be stopped and a qualified archaeologist must be contacted to assess the find.

### Final Comment

The SAHRA Archaeology, Palaeontology and Meteorites (APM) Unit accepts the submitted AIA and promotes the recommendations included in the report. The following additional conditions must be included in the Environmental Management Programme (EMPr):

- An Archaeological Walk-Down of the impact footprint must be completed prior to construction by a qualified archaeologist. If heritage resources are identified, the impacts to the heritage must be assessed and mitigation measures recommended. A Walk-Down report detailing the results of the study must be submitted to SAHRA for comment. No construction may occur without comments from SAHRA;
- Comments provided in the issued Interim Comment dated 15/01/2016 pertaining to Palaeontological resources are still valid; and
- 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. If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Itumeleng Masiteng/Mimi Seetelo 012 320 8490), must be alerted immediately. A professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the findings. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required.

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

Yours faithfully

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Our Ref:



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Department of Arts and Culture

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Date: Tuesday May 24, 2016

Page No: 3

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CaseID: 8804

Natasha Higgitt  
Heritage Officer  
South African Heritage Resources Agency

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Phillip Hine  
SAHRA Head Archaeologist (Acting)  
South African Heritage Resources Agency

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**ADMIN:**

Direct URL to case: <http://www.sahra.org.za/node/345820>  
(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.



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Department:  
Environment & Nature Conservation  
NORTHERN CAPE PROVINCE  
REPUBLIC OF SOUTH AFRICA

Private Bag X6102, Kimberley, 8300, Metlife Towers, T-Floor, Tel: 053 807 7300, Fax: 053 807 7328

Enquiries :  
Dipatisilo :  
Navrae : Samantha De la Fontaine  
Imibuzo :

Date :  
Letiha :  
Datum : 23 May 2016  
Umhla:

Reference :  
Tshupelo : DEA Ref. 14/12/16/3/3/2/866 (Ilanga CSP Tower 1)  
Verwysing : DEA Ref. 14/12/16/3/3/2/861 (Ilanga CSP 2)  
Isalathiso : DEA Ref. 14/12/16/3/3/2/862 (Ilanga CSP 3)  
DEA Ref. 14/12/16/3/3/2/868 (Ilanga CSP 4)  
DEA Ref. 14/12/16/3/3/2/864 (Ilanga CSP 5)

The Director-General

Department of Environmental Affairs

Private Bag X447

Pretoria

0001

**ATTENTION: MR D. SMIT**

**RECOMMENDATIONS TOWARDS THE DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORTS:  
THE PROPOSED ILANGA TOWER 1, ILANGA CSP 2, ILANGA CSP 3, ILANGA CSP 4 & ILANGA CSP  
5 FACILITIES, UPINGTON, //KHARA HAIS LOCAL MUNICIPALITY, ZF MCGAWU DISTRICT  
MUNICIPALITY, NORTHERN CAPE PROVINCE**

Herewith the comments and recommendations for the proposed development:

- 1.1 **No bat monitoring** was done for the areas where the Ilanga CSP 1 tower facility is proposed. Strong evidence have surfaced illustrating that bats are at high risks regarding CSP towers: tower's spray lights and infrastructure provide for roosting and foraging sites where after bats fall victim within the steam outlets (duct system) during normal operation.
- 1.2 It is advised that the evaporation ponds for Ilanga tower 1 be moved to areas where less bird activity was recorded.

- 1.3 The Ilanga Solar Thermal Power Plant (DEA Ref. 12/12/20/2056) was awarded a permit for the removal of ~4020 *Boscia foetida* trees. **Mitigation options for this tree species are limited**; it is almost impossible to relocate this protected tree (protected under the Northern Cape Nature Conservation Act 9 of 2009) as transplant and germination success is poorly understood. *Boscia spp.* is also slow growing and very limited information exists regarding tree age, growth rate, etc. With 5 proposed CSP facilities (and additional 2 towers and 1 parabolic trough is now in Scoping Phase) within the Karoshoek Solar Development Area (~14000 hectare) thousands of *Boscia spp.* will still be destroyed.
- 1.4 *Aloe dichotoma* (protected under the Northern Cape Nature Conservation Act 9 of 2009) was listed in the specialist studies as potentially occurring within the proposed Karoshoek Solar Development Area. It must be noted that at present there is a moratorium in place in the Northern Cape on the removal of *A. dichotoma* from the wild due to historic trade related pressures on populations (Proclamation No 968, 1 April 2005). Hence, **trees may not be removed until the moratorium is lifted.**
- 1.5 If electrification of the property as security measure is considered, possible electrocution damage to small mammals such as pangolin and tortoises should be taken into consideration. Structures (fences) should be erected in such a manner to **ease the free movement of wildlife.**
- 1.6 The following points should be addressed in the EMPr:
- 1.6.1 Preventative measures with regard to fauna drowning in evaporation ponds, and
- 1.6.2 Possible faunal poisonings by drinking water from evaporation ponds.
- 1.7 The pipeline proposed for the development is proposed for an area through the Endangered Lower Gariep Alluvial Vegetation [see Appendix A; only 50.3% of this vegetation type was left in 2006 with a conservation target of 31% (Mucina and Rutherford, 2006)]. By implication, this means that this vegetation type will be removed and irreversibly disturbed in order to construct the pipeline if no mitigation efforts are incorporated. In order to avoid that part of this vegetation type be irreversibly disturbed, the pipeline should be proposed for areas that are already disturbed (e.g. agricultural areas).



## Conclusion & recommendations

- A bat specialist should be appointed to look into potential bat mortality as a result of the active CSP tower and mitigation efforts should be proposed and incorporated.
- No *Aloe dichotoma* trees may be removed as a result of the moratorium in place within the Province. All *A. dichotoma* individuals within close proximity to the planned facilities must be mapped and information provided to the DENC.
- **A Biodiversity Off-set is proposed** as a result of the large number of protected tree species that will be impacted with limited mitigation efforts as in the case with *Boscia* spp.
- **A Biodiversity Off-set assessment must be done by a specialist** to guide negotiations regarding an appropriate off-set.
  - This should include (but not restricted to) a spatial evaluation in terms of the contribution of this development to the 'transformation' of the Gordonia Duneveld, Bushmanland Arid Grassland, Kalahari Karroid Shrubland and Lower Gariiep Alluvial Vegetation Types.
  - Information should be supplied in terms of maps and statistical data.

We hope you find these recommendations in order and do not hesitate to contact the Research and Development Support Unit of the DENC if there are any uncertainties.

Yours sincerely

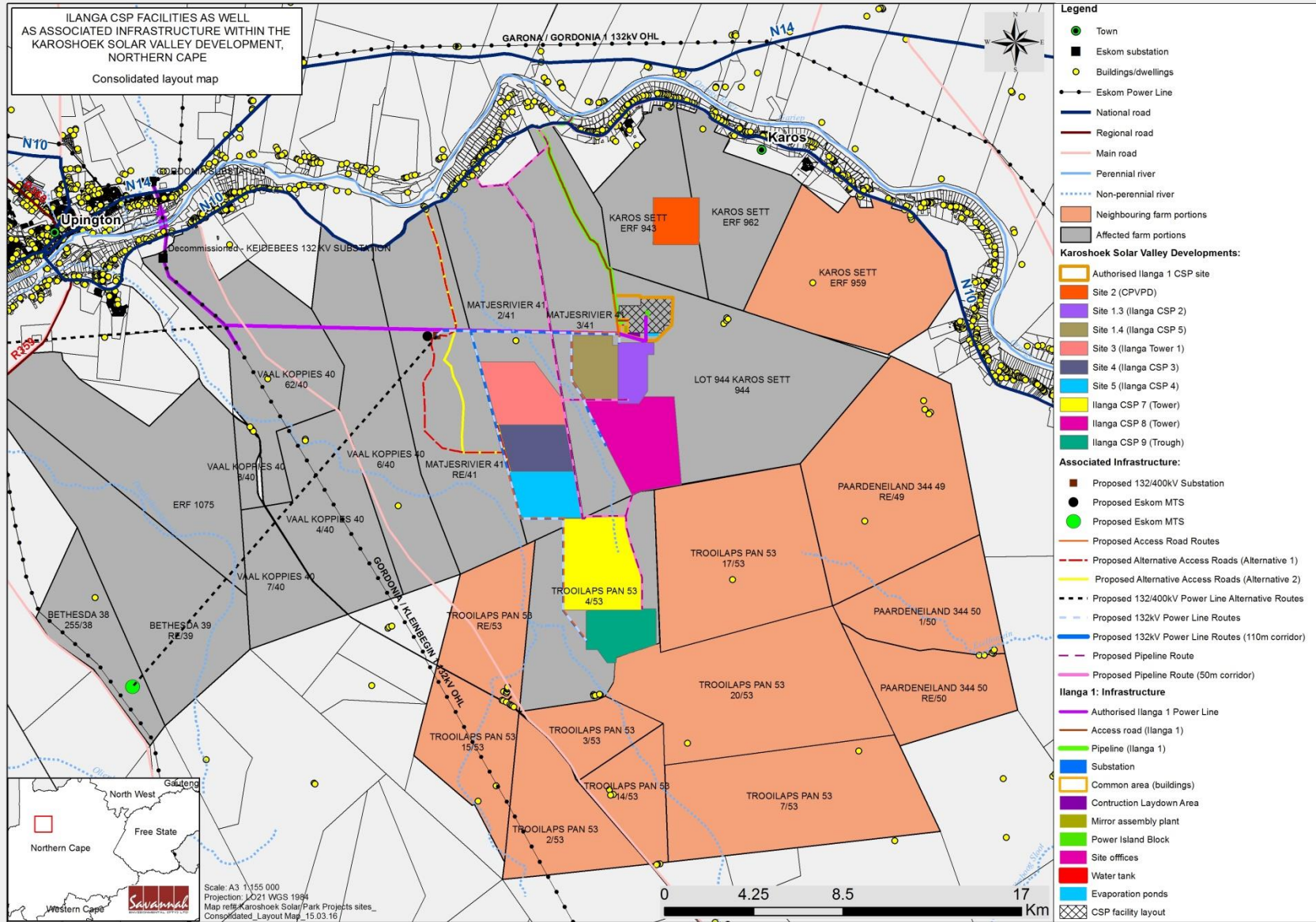


**E SWART**

**SCIENTIFIC MANAGER GR A**

**RESEARCH AND DEVELOPMENT SUPPORT UNIT**

24/5/2016



## References

Mucina, L., Rutherford, M.C. (eds). 2006. The vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19. South African National Biodiversity Institute, Pretoria.

# **STAKEHOLDER CONSULTATION**

## Gabriele Wood

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**From:** Gabriele Wood <gabriele@savannahsa.com>  
**Sent:** 17 June 2016 11:15  
**To:** 'cloetes@dwa.gov.za'  
**Subject:** EIA Process - Ilanga CSP 1 - 5 - Minutes of the Meeting held on 5 May 2016  
**Attachments:** Ilanga CSP 1 - 5 DWS Minutes Final.pdf; Karoshoek CSP DEIAr Letter 19.04.2016.pdf

Dear Shaun Cloete

The EIA processes being undertaken for the following projects has reference:

1. Additional CSP facilities (Ilanga CSP 2 – 5 & Ilanga CSP Tower 1) associated with the authorised CSP sites (1.3, 1.4, 3, 4 & 5) located within the Karoshoek Solar Valley Development;
2. Ilanga CSP 7, Ilanga CSP 8 and Ilanga CSP 9 which are new proposed CSP facilities proposed to be located within the Karoshoek Solar Valley Development; and
3. Associated linear infrastructure (including a power line, internal grid connection infrastructure, extraction point and the water pipelines & access roads) within the Karoshoek Solar Valley development.

Please find the minutes of the meeting held on 5 May 2016 attached for your records. Please could you kindly sign-off on the minutes as agreed.

Please could you also kindly submit the written comments for Ilanga CSP 2 – 5 at your earliest convenience. Please can you email me a scanned version of the original hard copies which are usually sent via post.

We hereby confirm receiving comments from your Department for the Ilanga CSP Tower 1 as well as the CSP 7, 8 and 9 projects, thank you. These comments will be included in the Scoping Report.

Please do not hesitate to contact me if you have any queries in this regard.

Kind regards  
Gabriele Wood