



Implanting kan hom weer laat hoor

GEMSBOK-UPINGTON: 'n kogleëre implanting kan klein Shanwill Mouton se lewe drasties verander.

Hierdie opgeruimde en lewenslustige seuntjie is met uitermatige bilaterale sensories-neurale gehoor verlies gedagnoseer. Dit beteken dat hy, heel moontlik sedert sy geboorte, feitlik niks kan hoor nie. Shanwill, wat vanjaar sesjaar oud word, is onlangs deur die Foundation for Children with Hearing Loss in South Africa, as 'n goete kandidaat vir 'n kogleëre implanting bestempel.

Die operasie kan help dat Shanwill se spraak en taal nog kan ontwikkel, sodat hy met sy geteëldes en maatjies kan kommunikeer. As die operasie nie nou gedoen word nie, mag die gehoorgedeelte van sy brein so drasties verander, dat die implanting nie moontlik sal wees nie.

En kogleëre apparaat kos sowat R275 000, waarvan die mediese fonds stegs R187 000 betaal. Dit beteken Shanwill se familie moet baie dringend R88 000 opdoek, sodat die operasie so gou moontlik gedoen kan word. Daar is 'n fonds gestig, waarin gelde wat vir Shanwill ingesameld word inbetaal kan word.

Enige persone wat 'n bydrae wil maak, hoe klein dit ookal is kan dit inbetaal by die volgende rekening: Rekening naam: Foundation for Children with a Hearing Loss in SA

Bank: Standard Bank Tak: Gezina

Tak kode: 01484500

Rekening nommer: 011794798

Verwysing: AB/Moutons

Betalingsbewyse moet gestuur word

aan Rinie Lotter by fax nommer: 086

643 6595

Kansa Relay for Life 2015

UPINGTON: Upington Kansa se jaarlikse Relay for Life word op Saterdag, 28 Maart 2015 by Die Eiland se veld gehou.

Die publiek word aangemoedig om spanne of besighede in te skryf vir hierdie groot fees gebeurtenis in die geveg teen kanker.

Hierdie deurmaagstap belooft om 'n prettige geleentheid vir die hele gesin te wees, sowel as 'n spanbou ervaring vir jou besigheid.

Skrif vandag jou span in en maak 'n verskil. 'n Reeks van vermaak word dwars deur die nag verskaf en hope pret vir almal. Vir meer inligting rondom die inskrywings skakel die Upington Kansa kantoor by 054 332 4937.

Vervolg van bl. 5

Radio Riverside gee beurse ter waarde van R143 920

Verlede jaar het 32 studente beurse ontvang van Radio Riverside en meeste van hierdie studente het goed gevaar en is in 2015 besig met hulle tweede jaar van studies.

Me Samatha Titus die voorsitter van die raad van Radio Riverside sê dat die vele aansoeke wat Radio Riverside ontvang het vir hierdie beurse is 'n aanduiding dat baie jongmense in ons gemeenskappe gretig is om hul studies voort te sit, maar dat die finansiële hulpbronne die meeste van die tyd 'n hindernis is. Titus het die studente aangemoedig om hierdie geleentheid met albei hande aan te gryp en die onderrig te gebruik as 'n instrument om hul lewens te verbeter in die gemeenskappe waarin hulle woon.

Belinda Boer een van die studente wie 'n beurs ontvang het, het Radio Riverside bedank vir die geleentheid en gesê, dat hulle almal bereid is om die beste van die geleentheid te maak, aangesien onderwys 'n belangrike instrument is om te hê as jy jou drome wil bereik.



Veronica Chikosi
Clinical Psychologist
M.A. (Clin. Psych) MBA (UIKZN)



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SIVEST
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SIVEST
Establis in 1982

OMGEWINGSIMPAAKEVALUERING (OIE) EN OMGEWINGSBESTUURSPROGRAM (OBPP) VIR DIE VOORGESTELDE ONTWIKKELING VAN DRIE 75 MW FOTVOLTAÏESE (FV) SONKRAGAANLEGTE NABY COPPERTON, NOORD-KAAPROVINSE

HELENA SOLAR 1 – DO Verw. No.: 14/12/16/3/2/765
HELENA SOLAR 2 – DO Verw. No.: 14/12/16/3/2/766
HELENA SOLAR 3 – DO Verw. No.: 14/12/16/3/3/2/767

Ingevolge die Nasionale Wet op Omgevingsbestuur, 1998 (Wet 107 van 1998) (NEMA), soos gewysig, en die Regulasies en Omgevingsimpakbeoordelings (OIE-regulasies) ingevolge Staatskennisgewing R543, R544, R545 en R546 wat op 18 Junie 2010 ingevolge Artikel 24(5) afgekondig is, aangevul met Artikel 44 van NEMA, geskied kennis hiermee dat BioTherm Energy (Edms.) Bpk. SIVEST SA (Edms.) Bpk. aangesiel het as die onafhanklike omgewingsbeoordelingspraktisyn (OBP) ten einde die nodige OIE en OBPP-beoordelingsprosesse vir die bogenoemde voorgestelde projekte ten opsigte van die volgende gelystede aktiwiteite te onderneem:

Staatskennisgewing R544 (18 Junie 2010)	Lysing 1 Aktiviteit (10)	(11)	(18)	(22)	(26)	(38)	(39)	(47)
Staatskennisgewing R545 (18 Junie 2010)	Lysing 2 Aktiviteit (1)	(15)						
Staatskennisgewing R546 (18 Junie 2010)	Lysing 3 Aktiviteit (4)	(12)	(13)	(14)	(16)	(19)		

Hoewel nuwe OIE-regulasies op 4 Desember 2014 afgekondig en op 8 Desember 2014 in werking gestel is (Staatskoerantnommer 38282), is die aansoek vir die drie voorgestelde FV-sonkragaanlegte by die Departement van Omgewingsake (DO) ingedien voordat die 2014 OIE-regulasies in werking getree het. Kragtens Regulasie 53(1) van die 2014 OIE-regulasies, moet enige aansoek wat ingevolge die vorige NEMA-regulasies ingedien is, onderneem word asof die vorige NEMA-regulasies nie herroep is nie. Die OIE-proses sal derhalwe ingevolge die 2010 OIE-regulasies onderneem word.

PROJEKBERYSKRIVING

BioTherm Energy (Edms.) Bpk. stel die oprigting van 'n drie fase fotovoltaïese (FV) sonkragaanleg met 'n totale uitvoervermoë van 225 MW. Die voorgestelde projek sal bestaan uit drie FV-sonkragaanlegte met 'n totale uitvoervermoë van sowat 75 MW elk, wat as Helena Solar 1, 2 en 3 sal bekendstaan. Elke FV-sonkragaanleg sal uit sowat 300 000 FV-paneel en gepaardgaande infrastruktuur bestaan. Die voorgestelde FV-sonkragaanlegte sal via 'n kraglyn van minder as 275 kV by die Kronos Substasie by die nasionale distribusienetwerk aansluit.

PROJEKLEIGING

Die voorgestelde projek is in die Noord-Kaaprovinsie, sowat 9 km suid van Copperton geleë. Dit is in die Siyethemba Plaaslike Munisipaliteit geleë wat deel vorm van die Pixley ka Seme Distriksmunisipaliteit. Die projek sal die volgende plekke in:

- Geëelte 3 van die plaas Kijpagspan No. 117 (sonkragaanleg)
- Geëelte 4 van die plaas Kijpagspan No. 117 (kraglyn)

U word hiermee in kennis gestel dat SIVEST die tersaaklike Aansoekvorms by die DO ingedien het en dat die voorgestelde projekte onder die verwysingsnommers wat hierbo aangedui is, by die DO geregistreer is.

Ten einde as 'n Belangstellende en/of Geïnteresseerde Party (B&GP) te registreer en/of om meer inligting te bekom, moet u asseblief u naam, kontakbesonderhede en die belang wat u by die aansoek het binne 30 dae vanaf die datum van hierdie kennisgewing indien.

Rig asseblief u skriftelike navrae aan die Omgevingskonsultante hieronder:

Andrea Gibb of Lynsey Rimbault
SIVEST Environmental
Posbus 2921
RIVONIA
2128
Tel: 011 798 0600
Tel: 011 803 7272
Faks: andreag@sivest.co.za of
lynseyr@sivest.co.za
E-pos: lynseyr@sivest.co.za
Webwerf: www.sivest.co.za

SIVEST
Environmental Division

SIVEST
Establis in 1982

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) AND ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPP) FOR THE PROPOSED DEVELOPMENT OF THREE 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

HELENA SOLAR 1 – DEA Ref No: 14/12/16/3/2/765
HELENA SOLAR 2 – DEA Ref No: 14/12/16/3/2/766
HELENA SOLAR 3 – DEA Ref No: 14/12/16/3/3/2/767

In terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) as amended and the Environmental Impact Assessment (EIA) Regulations, under Government Notice No. R543, R544, R545 and R546 promulgated on 18 June 2010, Section 24 (5) read with section 44 of the NEMA, notice is hereby given that BioTherm Energy (Pty) Ltd has appointed SIVEST SA (Pty) Ltd, as the independent environmental assessment practitioner (EAP), to undertake the required EIA and public participation for the above-mentioned proposed projects in terms of the following listed activities:

Government Notice R544 (18 June 2010)	Lysing 1 Aktiviteit (10)	(11)	(18)	(22)	(26)	(38)	(39)	(47)
Government Notice R545 (18 June 2010)	Lysing 2 Aktiviteit (1)	(15)						
Government Notice R546 (18 June 2010)	Lysing 3 Aktiviteit (4)	(12)	(13)	(14)	(16)	(19)		

Although new EIA Regulations were promulgated on 4 December 2014 and came into effect on 8 December 2014 (Government Gazette No. 38282), the application forms for the three proposed solar PV energy facilities were submitted to the Department of Environmental Affairs (DEA), prior to the 2014 EIA Regulations taking effect. In accordance with Regulation 53 (1) of the 2014 EIA Regulations, any applications submitted in terms of the previous NEMA regulations must be undertaken as if the previous NEMA regulations were not repealed. The EIA process will therefore be undertaken in accordance with the 2010 EIA Regulations.

PROJECT DESCRIPTION

BioTherm Energy (Pty) Ltd are proposing to construct a three phase solar photovoltaic (PV) energy facility with a total export capacity of 225MW. The proposed project will consist of three solar PV facilities with a total capacity of approximately 75MW each, referred to as Helena Solar 1, 2 and 3. Each solar PV energy facility will consist of approximately 300 000 solar PV panels and associated infrastructure. The proposed solar PV facilities will connect with the national distribution network at Kronos substation via a power line of less than 275kV.

PROJECT LOCATION

The proposed project is located within the Northern Cape Province, approximately 9km south of Copperton. It falls within the Siyethemba Local Municipality that forms part of the Pixley ka Seme District Municipality. The project includes the following farms:

- Portion 3 of the farm Kijpagspan No. 117 (solar facilities)
- Portion 4 of the farm Kijpagspan No. 117 (power line)

You are hereby informed that SIVEST has submitted the relevant Application Forms to the DEA and that the proposed projects are registered with them under the reference numbers listed above.

To register as an Interested and / or Affected Party (I&AP) and / or to obtain additional information please submit your name, contact details and the interest which you have in the application within 30 days from the date of this notice.

Please direct enquiries, in writing, to the Environmental Consultants below:

Andrea Gibb or Lynsey Rimbault
SIVEST Environmental
P O Box 2921
RIVONIA
2128
Tel: (011) 798 0600
Fax: (011) 803 7272
E-mail: andreag@sivest.co.za or
lynseyr@sivest.co.za
Website: www.sivest.co.za

OMGEWINGSIMPAKEVALUERING (OIE) EN OMGEWINGSBESTUURSPROGRAM (OBPr) VIR DIE VOORGESTELDE ONTWIKKELING VAN DRIE 75 MW FOTOVOLTAÏESE (FV) SONKRAGANLEGTE NABY COPPERTON, NOORD-KAAPROVINSIE

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Staatkennissgewing R544 (18 Junie 2010)								
Lysting 1 Aktiwiteit	(10)	(11)	(18)	(22)	(26)	(38)	(39)	(47)
Staatkennissgewing R545 (18 Junie 2010)								
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BioTherm Energy (Edms.) Bpk. stel die oprigting voor van 'n driefase fotovoltaïese (FV) sonkragaanleg met 'n totale uitvoervermoë van 225 MW. Die voorgestelde projek sal bestaan uit drie FV-sonkragaanlegte met 'n totale uitvoervermoë van sowat 75 MW elk, wat as Helena Solar 1, 2 en 3 sal bekendstaan. Elke FV-sonkragaanleg sal uit sowat 300 000 FV-panele en gepaardgaande infrastruktuur bestaan. Die voorgestelde FV-sonkragaanlegte sal via 'n kraglyn van minder as 275 kV by die Kronos Substasie by die nasionale distribusienetwerk aansluit.

PROJEKLIIGING

Die voorgestelde projek is in die Noord-Kaapprovinsie, sowat 9 km suid van Copperton geleë. Dit is in die Siyathemba Plaaslike Munisipaliteit geleë wat deel vorm van die Pixley ka Seme Distriksmunisipaliteit. Die projek sluit die volgende plase in:

- Gedeelte 3 van die plaas Klipgatspan No. 117 (sonkragaanlegte)
- Gedeelte 4 van die plaas Klipgatspan No. 117 (kraglyn)

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Rig asseblief u **skriftelike** navrae aan die Omgewingskonsultante hieronder:

Andrea Gibb of Lynsey Rimbault		
SiVEST Environmental		
Posbus 2921	Tel:	011 798 0600
RIVONIA	Faks:	011 803 7272
2128	E-pos:	andreag@sivest.co.za of lynseyr@sivest.co.za
	Webwerf:	www.sivest.co.za

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) AND ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) FOR THE PROPOSED DEVELOPMENT OF THREE 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

HELENA SOLAR 1 – DEA Ref No: 14/12/16/3/3/2/765

HELENA SOLAR 2 – DEA Ref No: 14/12/16/3/3/2/766

HELENA SOLAR 3 – DEA Ref No: 14/12/16/3/3/2/767

In terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) as amended and the Environmental Impact Assessment (EIA) Regulations, under Government Notices No R543, R544, R545 and R546 promulgated on 18 June 2010, Section 24 (5) read with section 44 of the NEMA, notice is hereby given that BioTherm Energy (Pty) Ltd has appointed SiVEST SA (Pty) Ltd, as the independent environmental assessment practitioner (EAP), to undertake the required EIA and public participation for the above-mentioned proposed projects in terms of the following listed activities:

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Listing 2 Activity	(1)	(15)						
Government Notice R546 (18 June 2010)								
Listing 3 Activity	(4)	(12)	(13)	(14)	(16)	(19)		

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PROJECT DESCRIPTION

BioTherm Energy (Pty) Ltd are proposing to construct a three phase solar photovoltaic (PV) energy facility with a total export capacity of 225MW. The proposed project will consist of three solar PV facilities with a total export capacity of approximately 75MW each, referred to as Helena Solar 1, 2 and 3. Each solar PV energy facility will consist of approximately 300 000 solar PV panels and associated infrastructure. The proposed solar PV facilities will connect with the national distribution network at Kronos substation via a power line of less than 275kV.

PROJECT LOCATION

The proposed project is located within the Northern Cape Province approximately 9km south of Copperton. It falls within the Siyathemba Local Municipality that forms part of the Pixley ka Seme District Municipality. The project includes the following farms:

- Portion 3 of the farm Klipgatspan No. 117 (solar facilities)
- Portion 4 of the farm Klipgatspan No. 117 (power line)

You are hereby informed that SiVEST has submitted the relevant Application Forms to the DEA and that the proposed projects are registered with them under the reference numbers listed above.

To register as an Interested and / or Affected Party (I&AP) and / or to obtain additional information please submit your name, contact details and the interest which you have in the application within 30 days from the date of this notice.

Please direct enquiries, **in writing**, to the Environmental Consultants below:

Andrea Gibb or Lynsey Rimbault	
SiVEST Environmental	
P O Box 2921	Tel: (011) 798 0600
RIVONIA	Fax: (011) 803 7272
2128	E-mail: andreag@sivest.co.za or lynseyr@sivest.co.za
	Website: www.sivest.co.za



**Appendix 5D:
Correspondence**

Andrea Gibb

From: Veronique Evans
Sent: Friday, March 06, 2015 8:36 AM
To: Andrea Gibb
Subject: FW: EIA Commencing for Three 75MW Solar PV Energy Facilities near Copperton

From: ThokoB [mailto:ThokoB@daff.gov.za]
Sent: 18 February 2015 03:57 PM
To: Veronique Evans
Subject: RE: EIA Commencing for Three 75MW Solar PV Energy Facilities near Copperton

Attention Veronique

This serves as confirmation of receipt of the email sent through for a Solar PV Energy Facility. I will forward your email to the Registry division for capturing and a formal acknowledgement letter of receipt will be sent to you once the garland agis system is back on.

I hope you find this in order.

Yours in service:

Thoko Buthelezi
Client Liaison Office
Tel: 012 319 7580
Fax: 012 329 5938
E-mail: thokob@daff.gov.za



BEFORE PRINTING THIS E-MAIL
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From: Veronique Evans [mailto:VeroniqueE@sivest.co.za]
Sent: 18 February 2015 07:57 AM
Cc: Andrea Gibb; Rebecca Thomas; Nicolene Venter (nicolenev@zitholele.co.za); Lynsey Rimbault
Subject: EIA Commencing for Three 75MW Solar PV Energy Facilities near Copperton

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Dear Stakeholder

- Helena Solar 1 – DEA Ref No: 14/12/16/3/3/2/765
- Helena Solar 2 – DEA Ref No: 14/12/16/3/3/2/766
- Helena Solar 3 – DEA Ref No: 14/12/16/3/3/2/767

SiVEST SA (Pty) Ltd (hereafter referred to as SiVEST) has been appointed by BioTherm Energy (Pty) Ltd (hereafter referred to as BioTherm) to undertake the required Environmental Impact Assessment (EIA) process for the proposed development of a three phase solar photovoltaic (PV) energy facility with a total export capacity of 225MW, near Copperton within the Northern Cape Province. The proposed project will consist of three 75MW export capacity solar PV facilities referred to as Helena Solar 1, 2 and 3.

Please find attached, for your attention; the Background Information Document (BID), Invitation Letter and Registration and Comment Form for the proposed project. The documents are provided in English and Afrikaans for your convenience.

We look forward to receiving your comments.

Kind Regards

Andrea Gibb (B.Sc. Landscape Architecture; B.Sc.(Hons) Environmental Management)

Environmental Practitioner and Visual Specialist

SIVEST Environmental Division



SIVEST is a Level 3 BBBEE Contributor

Direct +27 11 798 0638 **Tel** +27 11 798 0600 **fax** +27 11 803 7272 **cell** +27 72 587 6525
email andrea@sivest.co.za **website** www.sivest.co.za



Consulting Engineers - Project Managers - Environmental Consultants - Town and Regional Planners
Durban - Johannesburg - Pietermaritzburg - Richards Bay - Ladysmith - Cape Town - Harare (Zimbabwe)

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Andrea Gibb

From: Veronique Evans
Sent: Friday, March 06, 2015 8:36 AM
To: Andrea Gibb
Subject: FW: EIA Commencing for Three 75MW Solar PV Energy Facilities near Copperton
Attachments: Renewable Energy Generation Plant Setbacks to Eskom Infrastructure - Signed.pdf; Eskom requirements for work in or near Eskom servitudes SOLAR (3).doc

From: John Geeringh [mailto:GeerinJH@eskom.co.za]
Sent: 18 February 2015 01:28 PM
To: Veronique Evans
Subject: RE: EIA Commencing for Three 75MW Solar PV Energy Facilities near Copperton

Please find attached Eskom requirements for works at or near Eskom infrastructure. Please make sure these requirements are taken into consideration during the layout planning of your development.

Regards

John Geeringh (Pr Sci Nat)
Senior Consultant Environmental Management

Eskom GC: Land Development
Megawatt Park
D1Y39
P O Box 1091
Johannesburg
2000

Tel: 011 516 7233
Fax: 086 661 4064
Cell: 083 632 7663

From: Veronique Evans [mailto:VeroniqueE@sivest.co.za]
Sent: 18 February 2015 07:57 AM
Cc: Andrea Gibb; Rebecca Thomas; Nicolene Venter (nicolenev@zitholele.co.za); Lynsey Rimbault
Subject: EIA Commencing for Three 75MW Solar PV Energy Facilities near Copperton

******* Please note that this email was sent from a NO REPLY email address. Please do not reply to this address as it is an unmonitored email account. *******

Dear Stakeholder

- Helena Solar 1 – DEA Ref No: 14/12/16/3/3/2/765
- Helena Solar 2 – DEA Ref No: 14/12/16/3/3/2/766
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SIVEST SA (Pty) Ltd (hereafter referred to as SiVEST) has been appointed by BioTherm Energy (Pty) Ltd (hereafter referred to as BioTherm) to undertake the required Environmental Impact Assessment (EIA) process for the proposed development of a three phase solar photovoltaic (PV) energy facility with a total export capacity of 225MW, near

Copperton within the Northern Cape Province. The proposed project will consist of three 75MW export capacity solar PV facilities referred to as Helena Solar 1, 2 and 3.

Please find attached, for your attention; the Background Information Document (BID), Invitation Letter and Registration and Comment Form for the proposed project. The documents are provided in English and Afrikaans for your convenience.

We look forward to receiving your comments.

Kind Regards

Andrea Gibb (B.Sc. Landscape Architecture; B.Sc.(Hons) Environmental Management)
Environmental Practitioner and Visual Specialist
SiVEST Environmental Division



SiVEST is a Level 3 BBBEE Contributor

Direct +27 11 798 0638 Tel +27 11 798 0600 fax +27 11 803 7272 cell +27 72 587 6525
email andrea@sivest.co.za website www.sivest.co.za



Consulting Engineers - Project Managers - Environmental Consultants - Town and Regional Planners
Durban - Johannesburg - Pietermaritzburg - Richards Bay - Ladysmith - Cape Town - Harare (Zimbabwe)

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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

	<p style="text-align: center;">SCOT</p>	<p style="text-align: center;">Technology</p>
---	---	---

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**

Total Pages: **8**

Next Review Date: **N/A**

Disclosure Classification: **CONTROLLED DISCLOSURE**


Compiled by



J W Chetty
Mechanical Engineer

Date: 20/02/2014

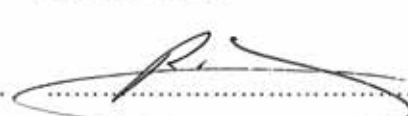
Approved by



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
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 Figure 1)

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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.

CONTROLLED DISCLOSURE

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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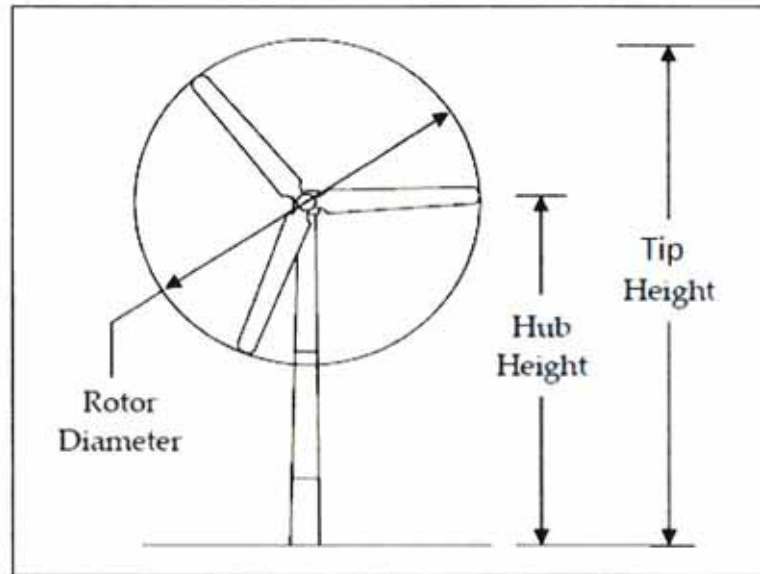


Figure 1: Horizontal Axis Wind Turbine [2]

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

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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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agriculture, forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

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

Enquiries: J Mans
E-mail: jacomm@daff.gov.za
Date: 19 February 2015
Ref: F13/11/2/301

SiVEST
P.O. Box 2921
RIVONIA
2128

ATTENTION: Ms. Andrea Gibb (andreas@sivest.co.za)

RE: COMMENTS ON BACKGROUND INFORMATION DOCUMENT OF THE PROPOSED THREE 75MW HELENA SOLAR 1, 2 AND 3 (DEA REF: 14/12/16/3/3/2/765, 766 AND 767) ENERGY FACILITIES NEAR COPPORTON, NORTHERN CAPE

1. DEPARTMENTAL MANDATE

1.1 The Directorate: Forestry Management (Other Regions) in the Department of Agriculture, Forestry and Fisheries (DAFF) is mainly concerned about the potential impact on protected tree species. See the National Forests Act, Act 84 of 1998 (NFA) as amended, section 12(1)(d) read with s15(1) and s62(2)(c). The most recent list of protected tree species was published in GN 908 of 21 November 2014. **No protected tree may be damaged, disturbed, cut or destroyed without a valid Forest Act license, irrespective of other authorisations and approvals.**

1.2 The DAFF is also responsible for the administration of the National Veld and Forest Fires Act, Act 101 of 1998 (NVFFA) as amended. Please take note of roles and responsibilities in terms of the NVFFA.

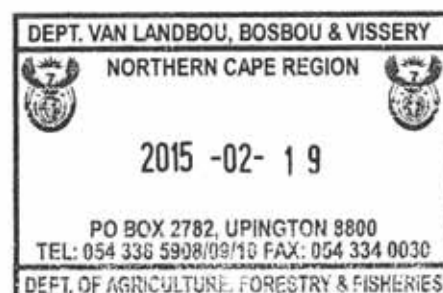
2. COMMENTS ON BACKGROUND INFORMATION DOCUMENT

2.1 Kindly ensure that you assess the potential impact on NFA listed protected tree species (if any) and provide a copy of the biodiversity specialist report to this office for comments.

Kind Regards,

J Mans
Jacoline Mans

Chief Forester: NFA Regulation



EIA AND EMP_r FOR THE PROPOSED DEVELOPMENT OF THREE 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

- HELENA SOLAR 1 – DEA Ref No: 14/12/16/3/3/2/765
- HELENA SOLAR 2 – DEA Ref No: 14/12/16/3/3/2/766
- HELENA SOLAR 3 – DEA Ref No: 14/12/16/3/3/2/767

REGISTRATION AND COMMENT FORM

Accompanying Background Information Document: 18 February 2015



Public Participation Office



Andrea Gibb / Lynsey Rimbault
 SiVEST Environmental
 PO Box 2921, RIVONIA, 2128
 Tel (011) 798 0600
 Fax (011) 803 7272
 Email andreag@sivest.co.za /
 lynseyr@sivest.co.za

Please complete by Thursday 19 March 2015, and return by post, fax or e-mail to the Public Participation Office (as above)

TITLE	Ms	FIRST NAME	Jacoline Mans
INITIALS	J	SURNAME	Mans
ORGANISATION	DAFF	EMAIL	Jacoline.Mae.daff.gov.za
POSTAL ADDRESS	PO Box 2782		
	Upington	POSTAL CODE	8800
TEL NO	054 338 5909	FAX NO	054 334 0030

REGISTRATION AS INTERESTED AND/OR AFFECTED PARTY (I&AP) (please circle applicable box)

Please formally register me as an interested and affected party (I&AP) so that I may receive further information and notifications during the EIA process	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
In terms of GNR 543 (2010 EIA regulations) I disclose below any direct business, financial, personal or other interest that I may have in the granting or rejection of the application for environmental authorisation (please use separate sheets if you wish): No interest.....		

COMMENTS (please use separate sheets if you wish)

I suggest that the following issues of concern be investigated in the EIA:

Potential impacts on NFA Listed Protected Tree Species (if any).....

I suggest the following for the EIA process and / or the public participation process:

Any other comments:

Please contact the following colleagues/friends to register as I&APs for this EIA (name and contact details e.g. e-mail address):

J. Mans
 Signature

THANK YOU FOR YOUR CONTRIBUTION

19/02/2015
 Date



17 Baker Street
Rosebank
Johannesburg
South Africa
2196

Tel: +27 (0) 11 442 2434
Fax: +27 (0) 11 442 2454
Email: atiplady@ska.ac.za

Andrea Gibb
Environmental Practitioner and Visual Specialist
SiVEST Environmental Division
PO Box 2921
Rivonia
2128

E-mail: andrea@sivest.co.za

Date: 23 February 2015

Dear Andrea,

Re: Development of three 75MW Solar PV Energy Facilities (Helena Solar 1-3) near Copperton in the Northern Cape Province.

This letter is in response to your email request, to provide an assessment on the potential development of three 75MW solar electricity generation facilities in the Northern Cape Province and the risk they may pose on the Square Kilometre Array Project.

A high level risk assessment has been conducted at the South African SKA Project Office to determine the potential impact of such facilities on the Square Kilometre Array. This letter serves to confirm the outcomes of the risk assessment, and proposals for any future investigations associated with this facility.

- I. The location of the proposed facility has been provided in the background information document compiled by SiVEST Environmental Division,
- II. The nearest SKA station has been identified SKA-Ant-190, at approximately 23km from the proposed installation at Klipgatspan;
- III. Based on distance to the nearest SKA station, detailed design of the solar installation, and the cumulative impact of multiple renewable energy facilities of a similar nature in the same vicinity, the proposed facilities poses a **high** risk of detrimental impact on the SKA;
- IV. Any transmitters that are to be established, or have been established, at the site for the purposes of voice and data communication will be required to comply with the relevant AGA regulations concerning the restriction of use of the radio frequency spectrum that applies in the area concerned;
- V. As a result of the **high** risk associated with these facilities, The SKA project office recommends that further detailed EMI and RFI detailed studies be conducted as significant mitigation measures would be required to lower the risk of detrimental impact to an acceptable level. It is not guaranteed that sufficient mitigation measures would be available. The South African SKA Project Office would like to



be kept informed of progress with this project, and reserves the right to further risk assessments at a later stage.

This technical advice is provided by the South African SKA Project Office on the basis of the protection requirements of the SKA in South Africa, and does not constitute legal approval of the renewable energy projects in terms of the Astronomy Geographic Advantage Act, the Management Authority, and its regulations or declarations.

Regards,

Dr. Adrian Tiplady
South African SKA Site Bid Manager
SKA South Africa
Tel: 011 442 2434
Fax: 011 442 2454
atiplady@ska.ac.za

Andrea Gibb

From: Simphiwe Masilela <SimphiweM@atns.co.za>
Sent: Thursday, February 26, 2015 8:21 AM
To: Veronique Evans; Andrea Gibb
Subject: RE: EIA Commencing for Three 75MW Solar PV Energy Facilities near Copperton



Good day Andrea,

[RE: EIA Commencing for Three 75MW Solar PV Energy Facilities near Copperton](#)

Please note that ATNS is aware of the above mentioned.

We might not be able to attend some if not all your public meetings, however we request that you please update us should there be any new developments that may affect our interests. We will duly conduct assessments as required when the project is ready for construction.

Looking forward to working with you further,

Kind Regards,

Simphiwe Masilela
Obstacle Evaluator | ATM
ATNS Head Office, Bruma, Johannesburg, South Africa

T: 011 607 1228 • F: 011 607 1466 • C:
E: SimphiweM@atns.co.za • W: www.atns.co.za



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From: Veronique Evans [<mailto:VeroniqueE@sivest.co.za>]
Sent: 18 February 2015 07:57
To: undisclosed-recipients
Cc: Andrea Gibb; Rebecca Thomas; Nicolene Venter (nicolenev@zitholele.co.za); Lynsey Rimbault
Subject: EIA Commencing for Three 75MW Solar PV Energy Facilities near Copperton

******* Please note that this email was sent from a NO REPLY email address. Please do not reply to this address as it is an unmonitored email account. *******

Dear Stakeholder

- Helena Solar 1 – DEA Ref No: 14/12/16/3/3/2/765
- Helena Solar 2 – DEA Ref No: 14/12/16/3/3/2/766
- Helena Solar 3 – DEA Ref No: 14/12/16/3/3/2/767

SiVEST SA (Pty) Ltd (hereafter referred to as SiVEST) has been appointed by BioTherm Energy (Pty) Ltd (hereafter referred to as BioTherm) to undertake the required Environmental Impact Assessment (EIA) process for the proposed development of a three phase solar photovoltaic (PV) energy facility with a total export capacity of 225MW, near Copperton within the Northern Cape Province. The proposed project will consist of three 75MW export capacity solar PV facilities referred to as Helena Solar 1, 2 and 3.

Please find attached, for your attention; the Background Information Document (BID), Invitation Letter and Registration and Comment Form for the proposed project. The documents are provided in English and Afrikaans for your convenience.

We look forward to receiving your comments.

Kind Regards

Andrea Gibb (B.Sc. Landscape Architecture; B.Sc.(Hons) Environmental Management)

Environmental Practitioner and Visual Specialist

SiVEST Environmental Division



SiVEST is a Level 3 BBBEE Contributor

Direct +27 11 798 0638 Tel +27 11 798 0600 fax +27 11 803 7272 cell +27 72 587 6525
email andrea@sivest.co.za website www.sivest.co.za



Consulting Engineers - Project Managers - Environmental Consultants - Town and Regional Planners
Durban - Johannesburg - Pietermaritzburg - Richards Bay - Ladysmith - Cape Town - Harare (Zimbabwe)

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**NETWORK INFRASTRUCTURE PROVISIONING
WAYLEAVE MANAGEMENT
CENTRAL REGION**

**Telkom SA SOC Limited
Private Bag X20700
BLOEMFONTEIN
9300**

Enquiries: Chris Schutte
Telephone: 051 - 401 6701
Fax : 088 0514016238
e-mail : WayleaCR@telkom.co.za

Our Ref no: CCPN0096-15

Your ref: 14/12/16/3/3/2/765

27 February 2015

SIVEST
P.O. Box 2921
RIVONIA
2128

EIA COMMENCING FOR THREE 75MW SOLAR PV ENERGY FACILITIES NEAR COPPERTON

Your letter received on the 18 February 2015.

With reference to your above-mentioned application, I hereby inform you that Telkom SA SOC LTD approves the proposed work indicated on your drawings in terms of Section 23 of the Electronic Communication Act No. 36 of 2005 as amended.

No Telkom SA SOC Ltd infrastructure will be affected by this proposal.

Although we are not affected by this proposal, Mr Petrus Fourie must be contacted at 081 363 5213 from our Network Field Services before commencement of work.

Approval of the proposed route is valid for six months. If construction has not yet commenced within this period, then the file must be resubmitted for approval

Any changes/deviations from the original planning during or prior to construction must immediately be communicated to this office.

As per supplied sketches it would appear as if Telkom SA SOC Ltd infrastructure would not be affected. However, care should still be taken should it become evident that there is in fact Telkom SA SOC LTD network present at the actual sites. Such lines should be treated in accordance with, and clearances stipulated in the occupational Health and Safety Act no. 85 of 1993, Electrical Machinery regulations 20 – Crossings, and Electrical Machinery Regulations 15 – Clearance Power Lines. If the specifications could not be met, all deviations costs will be for applicant's account. We also refer to section 25 of the Electronic Communication Act 36 of 2005

Application approved on condition that, should it later be found necessary to deviate the existing communication line due to existing noise interference or any other reason whatsoever, the cost of such remedial action shall be repayable.

On completion of this project, please certify that all requirements as stipulated in this letter have been met. Please note that should any of Telkom SA SOC LTD infrastructure has to be relocated or altered as a result of your activities the cost for such alteration or relocation will be for your account in terms of section 25 of the Electronic Communication Act.

Although we are not affected by this proposal, Mr Petrus Fourie must be contacted at 081 363 5213 from our Network Field Services before commencement of work.

Please notify this office and forward an as built plan, within 30 days of completion of construction.

Should Telkom SA SOC Ltd infrastructure be damaged while work is undertaken, kindly call the Toll free number – 0800203957 – immediately.

Yours sincerely


HELEEN VAN DEN HEEVER

Andrea Gibb

From: René de Kock (WR) <Dekockr@nra.co.za>
Sent: Tuesday, May 12, 2015 3:01 PM
To: Andrea Gibb
Subject: RE: Helena PV Energy Facilities near Copperton: Public Meeting Invite

Andrea,

Thank you for your email.

Please forward me a locality map in relation to the site and the national road. I need to make sure if SANRAL is affected or not.

Kind regards



Ms René de Kock

Statutory Control

Tel: +27 21 957 4607

Fax: +21 946 1630

Cell:

Email: Dekockr@nra.co.za



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Private Bag X19

www.nra.co.za

SANRAL Fraud Hotline: 0800204558

From: Andrea Gibb [mailto:AndreaG@sivest.co.za]
Sent: 12 May 2015 02:14 PM
Cc: Nicolene Venter (nicolenev@zitholele.co.za); Lynsey Rimbault
Subject: Helena PV Energy Facilities near Copperton: Public Meeting Invite

Dear Stakeholder

Attached herewith is your invitation and draft agenda for the Public Meeting that will be held on **Thursday 21 May 2015** at the Omega Hall, Bonteheuwel, Prieska at 16h30.

Kindly complete the attached Registration Form and return it to us before **Tuesday 19 May 2015**.

Kind Regards

Beste Rolspeler

Aangeheg is u uitnodiging en konsep agenda vir die Publiekevergadering wat op **Donderdag 21 Mei 2015** by Omega Hall, Bonteheuwel, Prieska om 16h30 gehou word.

U word vriendelik versoek om die aangehegde Registrasievorm te voltooi en aan ons deur te stuur voor of op
Dinsdag 19 Mei 2015.

Vriendelike groete

Kind Regards

Andrea Gibb (B.Sc. Landscape Architecture; B.Sc.(Hons) Environmental Management)

Environmental Practitioner and Visual Specialist

SiVEST Environmental Division



SiVEST is a Level 3 BBBEE Contributor

Direct +27 11 798 0638 Tel +27 11 798 0600 fax +27 11 803 7272 cell +27 72 587 6525

email andrea@sivest.co.za website www.sivest.co.za



Consulting Engineers - Project Managers - Environmental Consultants - Town and Regional Planners

Durban - Johannesburg - Pietermaritzburg - Richards Bay - Ladysmith - Cape Town - Harare (Zimbabwe)

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If verification is required please request a hard-copy version. The South African National Roads Agency SOC Ltd, PO Box 415, Pretoria, 0001, South Africa, Tel +27-(0)12 844 8000, www.nra.co.za.

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Andrea Gibb

From: René de Kock (WR) <Dekockr@nra.co.za>
Sent: Friday, May 15, 2015 1:07 PM
To: Andrea Gibb
Cc: Colene Runkel (WR)
Subject: RE: Helena PV Energy Facilities near Copperton: Public Meeting Invite

Andrea,

Thank you for your email.

The South African National Roads Agency SOC Limited (SANRAL) has no comment with regard to the above solar energy facilities near Copperton, as this will not affect the national road.

Kind regards



Ms René de Kock

Statutory Control

Tel: +27 21 957 4607

Fax: +21 946 1630

Cell:

Email: Dekockr@nra.co.za



**Are you ready?
Get tagged**

Western Region

1 Havenga Street Oakdale Bellville

Private Bag X19

www.nra.co.za

SANRAL Fraud Hotline: 0800204558

From: Andrea Gibb [mailto:AndreaG@sivest.co.za]
Sent: 13 May 2015 07:58 AM
To: René de Kock (WR)
Subject: RE: Helena PV Energy Facilities near Copperton: Public Meeting Invite

Hi René

Attached is the site locality map. As indicated on the map, no national roads are located within close proximity to the proposed development.

Kind Regards

Andrea Gibb (B.Sc. Landscape Architecture; B.Sc.(Hons) Environmental Management)

Environmental Practitioner and Visual Specialist

SiVEST Environmental Division



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Direct +27 11 798 0638 **Tel** +27 11 798 0600 **fax** +27 11 803 7272 **cell** +27 72 587 6525
email andrea@sivest.co.za **website** www.sivest.co.za



From: René de Kock (WR) [<mailto:Dekockr@nra.co.za>]
Sent: Tuesday, May 12, 2015 3:01 PM
To: Andrea Gibb
Subject: RE: Helena PV Energy Facilities near Copperton: Public Meeting Invite

Andrea,

Thank you for your email.

Please forward me a locality map in relation to the site and the national road. I need to make sure if SANRAL is affected or not.

Kind regards



Ms René de Kock

Statutory Control
Tel: +27 21 957 4607
Fax: +21 946 1630
Cell:
Email: Dekockr@nra.co.za



**Are you ready?
Get tagged**

Western Region
1 Havenga Street Oakdale Bellville
Private Bag X19
www.nra.co.za
SANRAL Fraud Hotline: 0800204558

From: Andrea Gibb [<mailto:AndreaG@sivest.co.za>]
Sent: 12 May 2015 02:14 PM
Cc: Nicolene Venter (nicolenev@zitholele.co.za); Lynsey Rimbault
Subject: Helena PV Energy Facilities near Copperton: Public Meeting Invite

Dear Stakeholder

Attached herewith is your invitation and draft agenda for the Public Meeting that will be held on **Thursday 21 May 2015** at the Omega Hall, Bonteheuwel, Prieska at 16h30.
Kindly complete the attached Registration Form and return it to us before **Tuesday 19 May 2015**.

Kind Regards

Beste Rolspeler

Aangeheg is u uitnodiging en konsep agenda vir die Publiekevergadering wat op **Donderdag 21 Mei 2015** by Omega Hall, Bonteheuwel, Prieska om 16h30 gehou word.

U word vriendelik versoek om die aangehegde Registrasievorm te voltooi en aan ons deur te stuur voor of op **Dinsdag 19 Mei 2015**.

Vriendelike groete

Kind Regards

Andrea Gibb (B.Sc. Landscape Architecture; B.Sc.(Hons) Environmental Management)
Environmental Practitioner and Visual Specialist
SiVEST Environmental Division



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Direct +27 11 798 0638 Tel +27 11 798 0600 fax +27 11 803 7272 cell +27 72 587 6525
email andrea@sivest.co.za website www.sivest.co.za



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Andrea Gibb

From: WESSA Northern Cape <wessanc@yahoo.com>
Sent: Sunday, May 17, 2015 6:54 PM
To: Andrea Gibb
Cc: Nicolene Venter (nicolenev@zitholele.co.za); Lynsey Rimbault
Subject: Re: Helena PV Energy Facilities near Copperton: Public Meeting Invite

WESSA in the Northern Cape is not able to deal with these matters.

Please do not send faxes or hard copies of documents to us. They will be destroyed. Registered mail will NOT be collected.

Please consult the website for other WESSA contact details, or direct your e-mail to info@wessa.co.za or info@wessanorth.co.za

From: Andrea Gibb <AndreaG@sivest.co.za>
To:
Cc: "Nicolene Venter (nicolenev@zitholele.co.za)" <nicolenev@zitholele.co.za>; Lynsey Rimbault <LynseyR@sivest.co.za>
Sent: Tuesday, 12 May 2015, 14:13
Subject: Helena PV Energy Facilities near Copperton: Public Meeting Invite

Dear Stakeholder

Attached herewith is your invitation and draft agenda for the Public Meeting that will be held on **Thursday 21 May 2015** at the Omega Hall, Bonteheuwel, Prieska at 16h30.
Kindly complete the attached Registration Form and return it to us before **Tuesday 19 May 2015**.

Kind Regards

Beste Rolspeler

Aangeheg is u uitnodiging en konsep agenda vir die Publiekevergadering wat op **Donderdag 21 Mei 2015** by Omega Hall, Bonteheuwel, Prieska om 16h30 gehou word.
U word vriendelik versoek om die aangehegde Registrasievorm te voltooi en aan ons deur te stuur voor of op **Dinsdag 19 Mei 2015**.

Vriendelike groete

Kind Regards

Andrea Gibb (B.Sc. Landscape Architecture; B.Sc.(Hons) Environmental Management)
Environmental Practitioner and Visual Specialist
SiVEST Environmental Division



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Direct +27 11 798 0638 **Tel** +27 11 798 0600 **fax** +27 11 803 7272 **cell** +27 72 587 6525
email andreag@sivest.co.za **website** www.sivest.co.za

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the denc

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 :
Navrae : I. Gwija
Imibuzo :

Date :
Letha :
Datum: 10th June 2015
Umhla :

Reference :
Tshupelo : NC/NAT/PIX/SIY/COPI/2015
Verwysing : 14/12/16/3/3/2/765
Isalathiso : 14/12/16/3/3/2/766
14/12/16/3/3/2/767

SiVEST
51 Wessel Road
Rivonia
2128

Fax: info@sivest.co.za

PROPOSED CONSTRUCTION OF THE HELENA 1, 2 AND 3 75 MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE DRAFT SCOPING REPORT.

The Department confirms having received the **Draft scoping report** for environmental authorisation of the above mentioned project on the **08th June 2015**. As required in terms of the Environmental Impact Assessment Regulations, 2014.

The application has been assigned the reference number **NC/NAT/PIX/SIY/COP1/2015**. Kindly quote this reference number in any future correspondence in respect of the application. Please note the responsible officer is going to be **Mr. I. Gwija** and can be contacted at **(053) 807 7430/ 7468**.

Yours faithfully

Ms. L. Tools-Bernado
EIA: Administrator

Land Use Classification











-  Degraded Land
-  Mines/Quarries
-  Urban/Built-Up Areas
-  Natural/Undeveloped Areas
-  Waterbodies

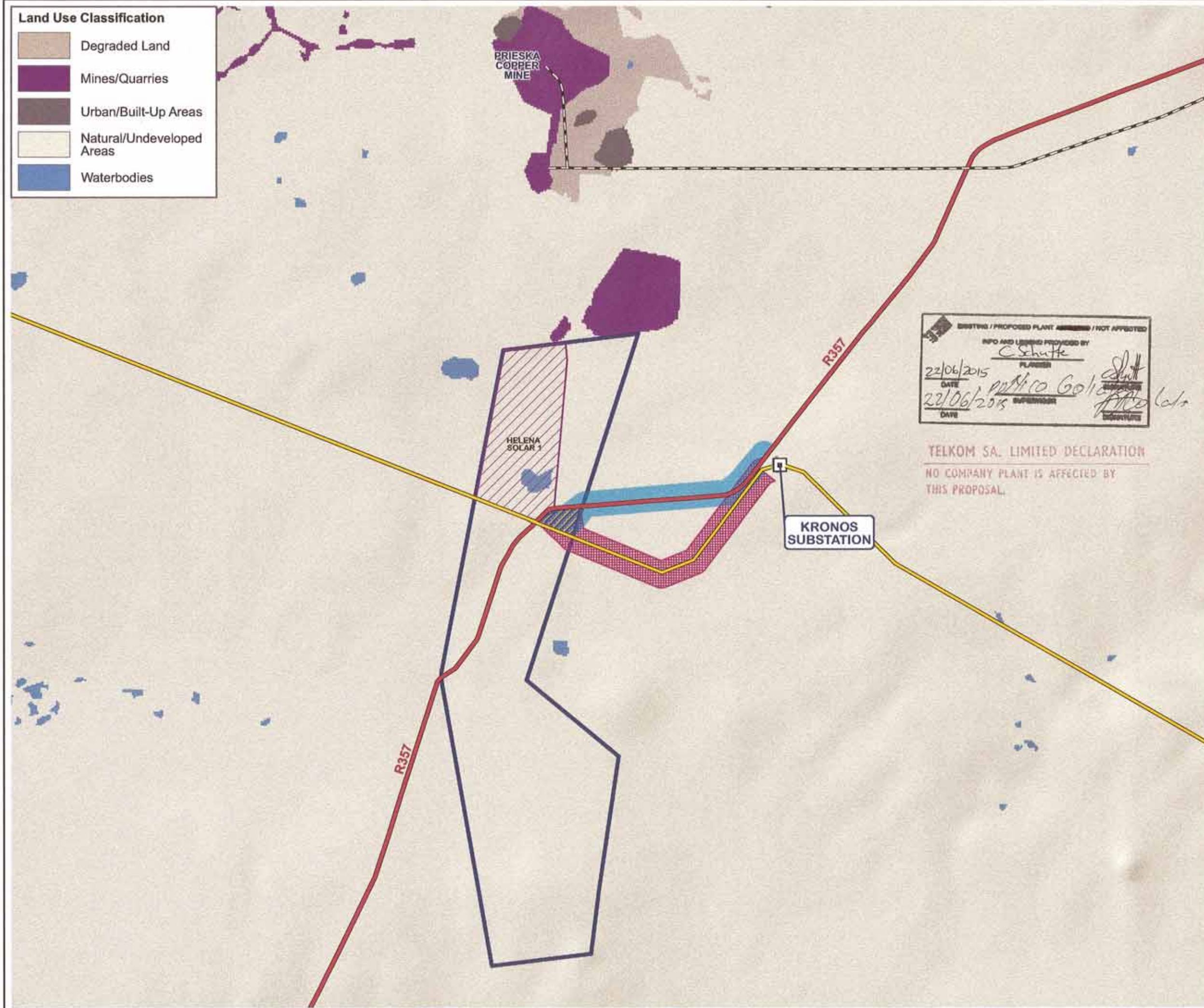
**PROPOSED
CONSTRUCTION OF A
75MW SOLAR
PHOTOVOLTAIC (PV)
ENERGY FACILITY**

**HELENA SOLAR 1
NEAR COPPERTON
NORTHERN CAPE PROVINCE**

**BROAD LAND USE
CLASSIFICATION**

Legend

-  Main Roads
-  Railway Line
-  Existing High Voltage Power Lines (400kV)
-  Main Rivers/Water Courses
-  Existing Substation
-  Application Site
-  Proposed Helena Solar 1 Development Area
-  Substation Assessment Area
-  Proposed Power Line Corridor: Option 1
-  Proposed Power Line Corridor: Option 2



EXISTING / PROPOSED PLANT AFFECTED / NOT AFFECTED

INFO AND LEGEND PROVIDED BY
C. Schutte
PLANNER

DATE 22/06/2015

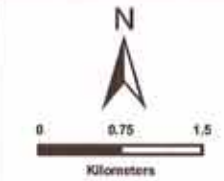
DATE 22/06/2015 SUPERVISOR *[Signature]*

TELKOM SA. LIMITED DECLARATION

NO COMPANY PLANT IS AFFECTED BY THIS PROPOSAL.

**KRONOS
SUBSTATION**

SOURCE:
ESKOM HOLDINGS, 2012
NGI, 2014
SANBI, 2009



SIVEST

ENVIRONMENTAL DIVISION
51 WESSELS ROAD
RIVONIA, 2128
JOHANNESBURG
SOUTH AFRICA

Phone: +27 11 798 0600
Fax: +27 11 803 7272
e-mail: info@sivest.co.za

Project No	Map Ref No	Prepared By	Date
13031	13031/SC1_06	KLS	22/05/2015

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THIS MAP HAS BEEN PREPARED UNDER THE CONTROLS ESTABLISHED BY THE SIVEST QUALITY MANAGEMENT SYSTEM AND MEETS THE REQUIREMENTS OF THE SETA QUALITY GRADING SYSTEM THAT IS ISO COMPLIANT



Mvelaphande Trading

**WAYLEAVE MANAGEMENT
CENTRAL REGION**

**Mvelaphande Trading
44 B Mill Street
BLOEMFONTEIN
9300**

Enquiries: Chris Schutte
Telephone: 051 - 401 6701/ 0810455686
Fax : 088 0514016238
e-mail : Schutce5@telkom.co.za

Our reference: CCPN0376-15

Your reference: HELENA SOLAR 1 & 2 & 3

22 June 2015

SIVEST
P.O. Box 2921
RIVONIA
2128

EIA COMMENCING FOR THREE 75MW SOLAR PV ENERGY FACILITIES NEAR COPPERTON

With reference to your letter received on 09 June 2015.

With reference to your above-mentioned application, I hereby inform you that our Client (Telkom SA SOC Ltd) approves the proposed work indicated on your drawings in terms of Section 23 of the Electronic Communication Act No. 36 of 2005 as amended.

No infrastructure of our Client (Telkom SA SOC Ltd) will be affected by this proposal.

Although we are not affected by this proposal, Mr Petrus Fourie must be contacted at 081 363 5213 from our Client (Telkom SA SOC Ltd)'s Network Field Services before commencement of work.

Approval of the proposed route is valid for six months. If construction has not yet commenced within this period, then the file must be resubmitted for approval

Any changes/deviations from the original planning during or prior to construction must immediately be communicated to this office.

As per supplied sketches it would appear as if our Client (Telkom SA SOC Ltd)'s infrastructure would not be affected. However, care should still be taken should it become evident that there is in fact our Client (Telkom SA SOC Ltd)'s network present at the actual sites. Such lines should be treated in accordance with, and clearances stipulated in the occupational Health and Safety Act no. 85 of 1993, Electrical Machinery regulations 20 – Crossings, and Electrical Machinery Regulations 15 – Clearance Power Lines. If the specifications could not be met, all deviations costs will be for applicant's account. We also refer to section 25 of the Electronic Communication Act 36 of 2005

Application approved on condition that, should it later be found necessary to deviate the existing communication line due to existing noise interference or any other reason whatsoever, the cost of such remedial action shall be repayable.

On completion of this project, please certify that all requirements as stipulated in this letter have been met. Please note that should any of our Client (Telkom SA SOC Ltd)'s infrastructure has to be relocated or altered as a result of your activities the cost for such alteration or relocation will be for your account in terms of section 25 of the Electronic Communication Act.

Although we are not affected by this proposal, Mr Petrus Fourie must be contacted at 081 363 5213 from our Client (Telkom SA SOC Ltd)'s Network Field Services before commencement of work.

Please notify this office and forward an as built plan, within 30 days of completion of construction.

Should our Client (Telkom SA SOC Ltd)'s infrastructure be damaged while work is undertaken, kindly call the Toll free number – **0800203957** – immediately.

Yours faithfully



Chris Schutte

Hlengiwe Ntuli

From: Natalie Uys <nuys.denc@gmail.com>
Sent: 18 August 2015 09:36 AM
To: Hlengiwe Ntuli
Subject: Re: Helena Solar 1, 2 & 3 Final Scoping Reports Submitted to the DEA

Dear Hlengiwe

Is it possible for you to please send me a dropbox file for the 3 facilities info to make it easier to access and download over the slow connection?

Best regards

Natalie

Best regards

Natalie Uys

Candidate Scientist: Botanist on Contract

Northern Cape Department of Environment and Nature Conservation (DENC), Private Bag X6102, Kimberley, 8300. Tel: 053 - 807 7430/72/81 Fax: 053 - 831 3530 Cell nr. (3G): 0716047621 (can only receive calls), Email: nuys.denc@gmail.com
Website: <http://denc.ncpg.gov.za/> Permit office contact information: Email: dencpermits@ncpg.gov.za (2MB) (For submitting new applications); Tel: 053-8077510/7477; Fax: 086 5151 769 (For submitting new applications) Courier address: 90 Long Street / Longstraat 90, Kimberley. Forms: <http://denc.ncpg.gov.za/index.php/44-about-us/our-services-to-you/117-permit-applications>;

On 18 August 2015 at 09:23, Hlengiwe Ntuli <HlengiweN@sivest.co.za> wrote:

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Dear Interested and/or Affected Party

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) AND ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) FOR THE THREE HELENA SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

DEA Ref. HELENA SOLAR 1: 14/12/16/3/3/2/765

HELENA SOLAR 2: 14/12/16/3/3/2/766

HELENA SOLAR 3: 14/12/16/3/3/2/767

- **FSR AVAILABLE FOR REVIEW**

We wish to express our appreciation to the stakeholders who submitted comments on the Draft Scoping Reports (DSRs) for the above mentioned proposed projects during the public review period (Thursday 28 May 2015 to Monday 29 June 2015). After the public review period, the DSRs were updated, taking into consideration the issues and concerns raised by stakeholders.

The Final Scoping Reports (FSRs) were submitted to the Department of Environmental Affairs (DEA) for their consideration on Monday 17 August 2015.

In accordance with the National Environmental Management Act (NEMA), the FSRs will be available for public comment and review from **Tuesday 18 August 2015 to Monday 7 September 2015** (end of business day). The FSRs are available on SiVEST's website: <http://www.sivest.co.za/> click on 'Downloads' (top right), then scroll down to *13031 Helena PV EIA*. Alternatively, please contact SiVEST to obtain an electronic copy of the reports on CD.

Should you have any comments on the FSRs, please submit these in writing directly to the DEA on or before **Monday 7 September 2015** (close of business day):

Department of Environmental Affairs (DEA)

Ms Mmatlala Rabothata

Private Bag X447

PRETORIA

0001

Tel: 012 399 9372

Email: mrabothata@environment.gov.za

As per the EIA Regulations, please send a copy of your comments to the SiVEST Office at the following address:

SiVEST Environmental

Andrea Gibb

PO BOX 2921

Rivonia

2128

Tel: 011 798 0600

Fax: 011 803 7272

Email: andreag@sivest.co.za

Kind Regards,

Andrea Gibb

Environmental Practitioner

SiVEST Environmental Division

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Direct [+27 11 798 0638](tel:+27117980638) **Tel** [+27 11 798 0600](tel:+27117980600) **fax** [+27 11 803 7272](tel:+27118037272)

email AndreaG@sivest.co.za **website** www.sivest.co.za

Consulting Engineers - Project Managers - Environmental Consultants - Town and Regional Planners

Durban - Johannesburg - Pietermaritzburg - Richards Bay - Ladysmith - Cape Town - Harare (Zimbabwe)

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Interim Comment

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

Attention: Sivest - Gauteng
PO BOX 2921
Rivonia
2128

Proposed Construction of the Helena 1, 2, and 3 75MW Solar Photovoltaic (PV) Energy Facilities near Copperton, Northern Cape Province.

Fourie, W. March 2015. THREE 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES – HELENA PROJECTS: Heritage Scoping Report

The proposed development entails three 75mw solar photovoltaic energy facilities and associated infrastructure, near Copperton, Northern Cape Province

The report has demonstrated that the proposed Helena Solar projects may have heritage resources present on the property, as confirmed through archival research and evaluation of aerial photography of the sites. The author recommends further field truthing through an archaeological walk down and palaeontological desktop study covering the site, in order to compile a comprehensive database of heritage sites in the study areas, with the aim of developing a heritage management plan for inclusion in the Environmental Management Plan as derived from the EIA.

Interim Comment

The SAHRA Archaeology, Palaeontology and Meteorites (APM) Unit supports the author's recommendations for an archaeological walk down and palaeontological desktop study covering the site. Once these reports have been submitted, SAHRA APM will be able to provide final comments.

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

Yours faithfully

Andrew Salomon
Heritage Officer: Archaeology
South African Heritage Resources Agency



ADMIN:

Direct URL to case: <http://www.sahra.org.za/node/273471>
(DEA, Ref: 14/12/16/3/3/2/765, 14/12/16/3/3/2/766, and 14/12/16/3/3/2/767)

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.



Andrea Gibb

To: Hlengiwe Ntuli; Lynsey Rimbault
Subject: RE: Helena 1, 2 and 3 Solar PV Facilities: EIA Newsletter

From: HettieB [<mailto:HettieB@daff.gov.za>]
Sent: 02 December 2015 11:16 AM
To: Hlengiwe Ntuli <HlengiweN@sivest.co.za>
Subject: RE: Helena 1, 2 and 3 Solar PV Facilities: EIA Newsletter

Good day
Please send me the title deed on this property.

Regards
Hettie Buys

From: Hlengiwe Ntuli [<mailto:HlengiweN@sivest.co.za>]
Sent: 30 November 2015 02:52 PM
Cc: Andrea Gibb; Lynsey Rimbault
Subject: Helena 1, 2 and 3 Solar PV Facilities: EIA Newsletter

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Dear Stakeholder

We would like to take this opportunity to inform you that the Department of Environmental Affairs has accepted the Final Scoping Reports and approved the Plan of Study for the Environmental Impact Phase of the Helena 1, 2, and 3 Solar Photovoltaic Energy Facilities.

Attached is the EIA Newsletter, Comment form and Site Locality Map for your information.

Kind Regards

Andrea Gibb (B.Sc. Landscape Architecture; B.Sc.(Hons) Environmental Management) Environmental Practitioner and Visual Specialist SiVEST Environmental Division

SiVEST is a Level 3 BBBEE Contributor

Direct +27 11 798 0638 Tel +27 11 798 0600 fax +27 11 803 7272
email andreas@sivest.co.za website www.sivest.co.za

Consulting Engineers - Project Managers - Environmental Consultants - Town and Regional Planners
Durban - Johannesburg - Pietermaritzburg - Richards Bay - Ladysmith - Cape Town - Harare (Zimbabwe)

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agriculture, forestry & fisheries

Department:
Agriculture, forestry & fisheries
REPUBLIC OF SOUTH AFRICA

Directorate Land Use and Soil Management, Private Bag x120, Gezina Pretoria, 0031
Delpen Building, c/o Annie Botha & Union Streets, Riviera

From: Director: Land Use and Soil Management

Tel: (012) 319 7634 **Fax:** (012) 329 5938 **e-mail:** nhlakad@daff.gov.za

**Sivest
PO Box 2921
Rivonia
2128**

8 December 2015

Dear Si/Madam

This serves as a notice of receipt and confirms that your application has been captured in our electronic AgriLand tracking and management system. It is strongly recommended that you use the on-line AgriLand application facility in future.

Detail of your application as captured:

Application type: Solar

Your reference: **Helena Solar 1,2,3**

Property Description: ***Klipgats Pan 117, ptn 3***

Dated: **30 November 2015**

Please use the following reference number in all enquiries:

AgriLand reference number: 2015_12_0073

Enquiries can be made to the above postal, fax or e-mail address.

Yours sincerely,

**HJ Buys
pp DIRECTOR: LAND USE AND SOIL MANAGEMENT**

<http://www.agis.agric.za/agriland>

Andrea Gibb

From: Lehlohonolo Roestof (LB) <RoestLB5@telkom.co.za>
Sent: Tuesday, December 08, 2015 8:34 AM
To: Andrea Gibb
Subject: CCPN0773-15 HELENA SOLAR

Good Day,

We acknowledge receipt of your application for Helena Solar. Our reference is CCPN0773-15 for further enquiries in this regard.

Kind Regards

Ben Roestof
Mvelaphanda Trading
Roestlb5@telkom.co.za
051 401 6256/081 438 3017

~~~~~  
This e-mail is subject to the Telkom SA SOC Ltd electronic communication legal notice,  
available at : <http://www.telkom.co.za/TelkomEMailLegalNotice.PDF>  
~~~~~

Andrea Gibb

From: Hlengiwe Ntuli
Sent: Monday, December 14, 2015 11:29 AM
To: Andrea Gibb; Lynsey Rimbault
Subject: FW: Three Proposed Helena Solar Photovoltaic Energy Facilities: DEIAr Available for Comment
Attachments: Solar Park footprint corners.xls; Pylon Geographic co ordinates.xls

FYA

Kind Regards,

Hlengiwe Ntuli
Projects Secretary
SiVEST Environmental Division



SiVEST is a Level 3 BBBEE Contributor

Direct +27 11 798 0690 **Tel** +27 11 798 0600 **fax** +27 11 803 7272
email HlengiweN@sivest.co.za **website** www.sivest.co.za



Consulting Engineers - Project Managers - Environmental Consultants - Town and Regional Planners
Durban - Johannesburg - Pietermaritzburg - Richards Bay - Ladysmith - Cape Town - Harare (Zimbabwe)

From: Lizelle Stroh [mailto:StrohL@caa.co.za]
Sent: 14 December 2015 11:26 AM
To: Hlengiwe Ntuli <HlengiweN@sivest.co.za>
Subject: RE: Three Proposed Helena Solar Photovoltaic Energy Facilities: DEIAr Available for Comment

Your enquiry regarding approval from the SACAA with regard to PV farms refers. There is a SACAA process whereby permission is applied for wrt obstacles which could pose an aviation hazard. More information can be obtained at <http://www.caa.co.za>. Click on information for industry 'Obstacles' on the LHS. Forms, Part 139-27 and submit on the form itself.

- Kindly provide a **.kml (Google Earth) file reflecting the footprint of the proposed development site including the proposed overhead electric power line route that will evacuate the generated power to the national grid.**
- Also indicate the **highest** structure of the project & the Overhead electric power transmission line.
- Note that there may be other wind farms and PV farms in the area. Unique names are preferable.
- *Please always use the proposed PV farm name in the Subject box when corresponding via email with this office and indicate the name & address which should appear on the CAA approval/decline letter.*
- *There is an assessment fee of R690 per application.*
- *For billing purposes: company name VAT nr. and postal details.*

- *Kindly ensure that all the above data is forwarded. Incomplete data causes unnecessary delays.*

Note that the lead time for approval may take up to 90 days upon receipt of the correct data.

Thanks

Kind regards



Lizell Stroh
Obstacle Specialist
PANS-OPS (Procedures for Air navigation Services – Aircraft Operations)
Air Navigation Services
Tel: +27 11 545 1232 | Fax: +27 011 545 1282 | Mobile: +27 83 461 6660 |
Email: strohl@caa.co.za
www.caa.co.za
Follow us on  

From: Hlengiwe Ntuli [<mailto:HlengiweN@sivest.co.za>]

Sent: 14 December 2015 11:04 AM

To: Andrea Gibb; Lynsey Rimbault

Cc: 'Sindisile Madyo'; 'John Geeringh'; Lizelle Stroh; 'Simon Gear'; 'Amanda Bester'; 'Andrew Timothy'; 'Lourens Leeuwner'; 'Thulani Mthombeni'; 'Heleen van den Heever'; 'Thoko Buthelezi'; 'Simphiwe Masilela'; 'Onwabile Ndzumo'; 'JRM Alexander'; 'Mashudu Marubini'; 'Ester Makungo'; 'Johan Koegelenberg'; 'Johanna Morobane'; 'Jenna Lavin'; 'Jasper Nieuwoudt'; 'Jacoline Mans'; 'Ivan Steenkamp'; 'Suzanne Erasmus'; 'Gert Steenkamp'; 'Sam Fiff'; 'Shaun Dyers'; 'Adriaan Tiplady'

Subject: Three Proposed Helena Solar Photovoltaic Energy Facilities: DEIAr Available for Comment

***** Please note that this email was sent from a NO REPLY email address. Please do not reply to this address as it is an unmonitored email account. *****

Dear Stakeholder

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

* DEA Ref No: HELENA SOLAR 1: 14/12/16/3/3/2/765

HELENA SOLAR 2: 14/12/16/3/3/2/766

HELENA SOLAR 3: 14/12/16/3/3/2/767

As indicated in the email which was sent you on Wednesday 9 December 2015, we would like to remind you that in accordance with the National Environmental Management Act (NEMA), the three Draft Environmental Impact Assessment Reports (DEIARs) have been made available for public comment and review as from Wednesday 9 December 2015 to Wednesday 27 January 2016 (end of business day).

For your convenience, electronic copies (on CD) of the three DEIARs as well as the accompanying appendices have been posted to you. The reports are also available on SiVEST's website:

<http://www.sivest.co.za/>, click on 'Downloads' and then browse to the folder '13031 Helena PV EIA'. We kindly request that you submit your comments to us at the below details, on or before Wednesday 27 January 2016 (end of business day). In terms of section 56 (7) of the Environmental Impact Assessment Regulations 2010, under Government Notices No R543, comments from state departments will be accepted until Monday 8 February 2016 (end of business day). SiVEST will forward any comments received after the public comment and review period directly to the relevant case officer at the Department of Environmental

Affairs (DEA).

Should you have any questions or queries please do not hesitate to contact us at:

Andrea Gibb / Lynsey Rimbault
PO BOX 2921, Rivonia, 2128
Tel - (011) 798 0600
Fax - (011) 803 7272
Email - andreag@sivest.co.za / lynseyr@sivest.co.za

Kind Regards

Andrea Gibb (B.Sc. Landscape Architecture; B.Sc.(Hons) Environmental Management) Environmental Practitioner and Visual Specialist
SiVEST Environmental Division

SiVEST is a Level 3 BBBEE Contributor

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Consulting Engineers - Project Managers - Environmental Consultants - Town and Regional Planners
Durban - Johannesburg - Pietermaritzburg - Richards Bay - Ladysmith - Cape Town - Harare (Zimbabwe)

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Andrea Gibb

From: Lehlohonolo Roestof (LB) <RoestLB5@telkom.co.za>
Sent: Monday, December 14, 2015 11:34 AM
To: Andrea Gibb
Cc: Vivian Groenewald (VR)
Subject: CCPN0773-15 ENVORIMENTAL ASSESSMENT FOR HELENA SOLAR
Attachments: CCPN0773-15 COVER LETTER.pdf; CCPN0773-15 UPDATED SKETCH.pdf

Good day

Approval is granted, subject to the following conditions, as per attached drawings supplied, our Client (Telkom SA SOC Ltd) infrastructure will be affected as indicated in GREEN. Our Client (Telkom SA SOC Ltd) infrastructure must be regarded as approximate only. Consequently, the following conditions apply:

Mr Vivian Groenewald must be contacted at 054 338 6501/081 362 6738 two weeks prior of commencement on construction work.

Regards,

Ben Roestof
Mvelaphanda Trading
Roestlb5@telkom.co.za
051 401 6256/081 438 3017

~~~~~  
This e-mail is subject to the Telkom SA SOC Ltd electronic communication legal notice,  
available at : <http://www.telkom.co.za/TelkomEMailLegalNotice.PDF>  
~~~~~



Mvelaphande Trading

Mvelaphande Trading
44 B Mill Street
BLOEMFONTEIN
9300

Enquiries: Lehlohonolo Roestof
Telephone: 051 - 401 6256/ 0814383017
Fax : 088 0514016238
E-mail : Roestlb5@telkom.co.za

Our reference: CCPN0773-15

Your reference: 13031

14 December 2015

SIVEST
P O Box 2921
RIVONIA
2128

ENVIROMENTAL IMPACT ASSESSMENT (EIA) AND ENVIROMENTAL MANAGEMENT PROGRAMME (EMPr) FOR THE HELENA SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON

With reference to your letter dated 30 November 2015.

With reference to your above-mentioned application, I hereby inform you that our Client (Telkom SA SOC Ltd) approves the proposed work indicated on your drawings in terms Section 29 of the Electronic Communications Act 36 of 2005 as amended.

Any changes/deviations from the original planning during or prior to construction must immediately be communicated to this office.

Approval is granted, subject to the following conditions, as per attached drawings supplied, our Client (Telkom SA SOC Ltd) infrastructure will be affected as indicated in GREEN. Our Client (Telkom SA SOC Ltd) infrastructure must be regarded as approximate only. Consequently, the following conditions apply:

Aerial Plant - At points of crossing, the overhead power lines should cross above the communications lines in accordance with and clearances stipulated in the Occupational Health and safety Act no 85 of 1993, Machinery regulations 20 – Crossings, and Electrical machinery Regulations 15 – Clearance of Power Lines. If the specifications could not be met, all deviation costs will be for the applicant's account. We also refer to section 25 of Electronic Communication Act 36 of 2005.

At points of crossing, the overhead power line should cross over the overhead communication lines with a minimum vertical separation of 0.6 meters.

Suitable protection as laid down in section 5 of the Code of Practice should be provided at all important crossings.

The crossing of supply lines or overhead service mains directly above or adjacent to communication poles must be avoided if possible. If not clearance of 3 meters must be provided.

In order to minimize noise induction into the telecommunication systems, the angle of crossing between the overhead power line and all communication lines, should be as near to a right angle as possible – the following deviation from the right angle being permitted at:

- Power voltage of lower than 48 kV - 45 degrees

Approved on condition that, should it later be found necessary to deviate the existing communication line due to existing noise interference or any other reason whatsoever, the cost of such remedial action shall be repayable.

Paragraph 2.4.1 of the Code of Practice stipulates the minimum acceptable horizontal separation between power and the communication lines and where this cannot be met, the design of the power line is also stipulated. This could apply between the attached plans and these requirements should strictly be adhered to.

Calculations have shown that an earth fault on the high voltage Power lines will induce excessive low frequency induction into the Communication lines. As a result of this, the cost to deviate / alter the communication lines to prevent this induction will be for the power provider.

Approved on condition that, should it later be found necessary to deviate the existing communication line due to existing noise interference or any other reason whatsoever, the cost of such remedial action shall be repayable.

Relocations of our Client (Telkom SA SOC Ltd) plant will be done at customer's request and will be a repayable project.

Please notify the office within 21 working days from date of this letter of acceptance and if any alternative proposal is available of if a recoverable work should commence, the liaison officer is **Lehlohonolo Roestof** at tel. no. **051 – 401 6256**.

As important cables are affected, **Mr Vivian Groenewald must be contacted at 054 338 6501/081 362 6738 two weeks prior of commencement on construction work. It would be appreciated if this office can be notified within 30 days on completion of construction work.** Confirmation is required on completion of construction as per agreed requirements.

On completion of this project please certify that all requirements as stipulated in this letter have been met. Please note that should any of our Client (Telkom SA SOC Ltd) infrastructure has to be relocated or altered as a result of your activities the cost for such alterations or relocations will be for your account in terms of section 25 of the Electronic Communications Act.

Should our Client (Telkom SA SOC Ltd) infrastructure be damaged while work is undertaken, kindly call the Toll free number **0800203951** immediately

All of our Client (Telkom SA SOC Ltd) rights remain reserved.




Mr Vivian Groenewald must be contacted at 054 338 6501/081 362 6738, before any commencement of work.

Yours faithfully



L Roestof

Development Areas










-  Helena Solar 1
-  Helena Solar 2
-  Helena Solar 3

**PROPOSED
CONSTRUCTION OF
THREE 75MW SOLAR
PHOTOVOLTAIC (PV)
ENERGY FACILITIES**


**HELENA SOLAR 1; HELENA
SOLAR 2 AND HELENA SOLAR 3
NEAR COPPERTON
NORTHERN CAPE PROVINCE**

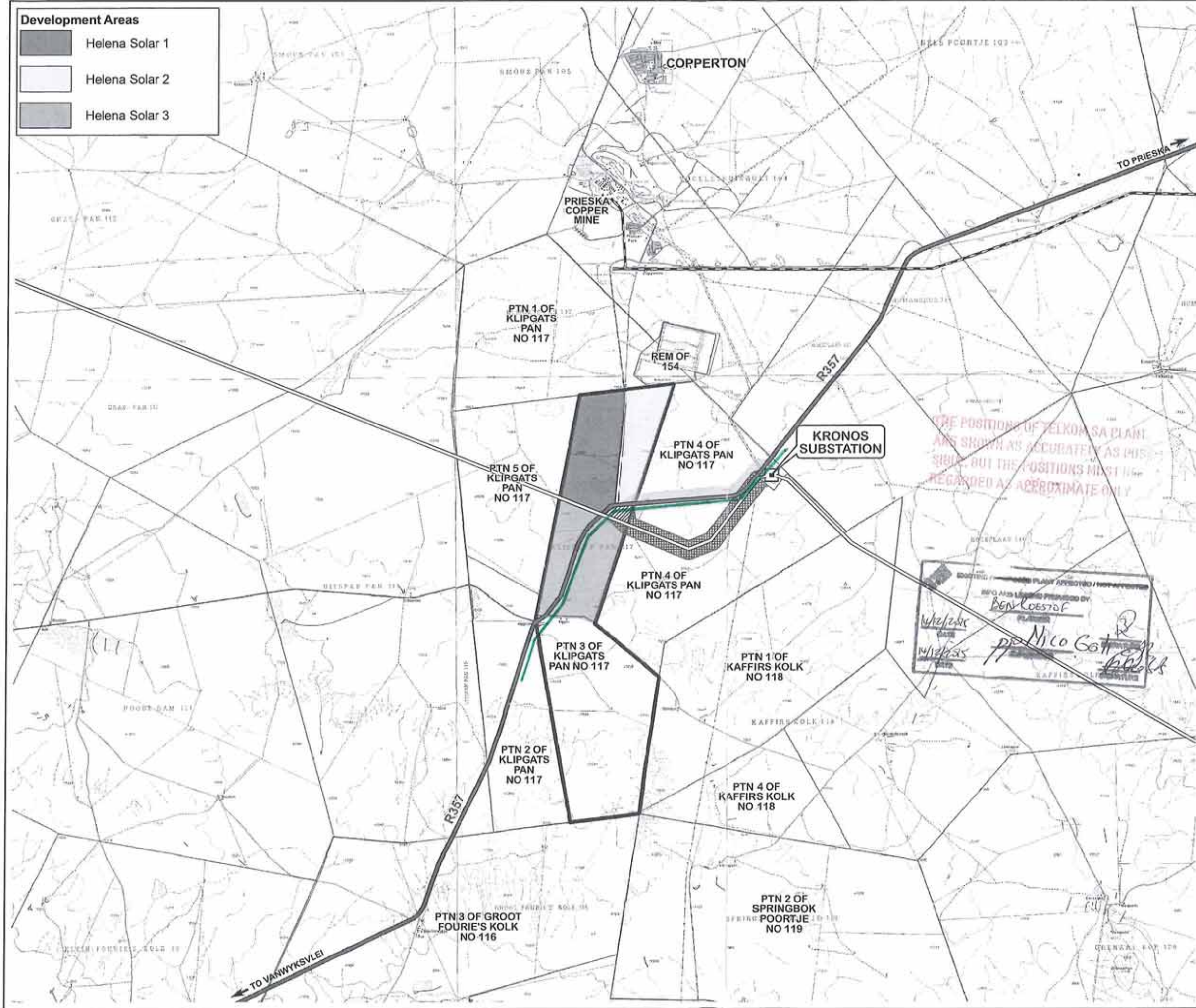
SITE LOCALITY

Legend

-  Main Roads
-  Railway Line
-  Existing High Voltage Power Lines (400kV)
-  Existing Substations
-  Adjoining Farm Boundaries
-  Application Site
-  Substation Assessment Area
-  Proposed Power Line Corridor: Option 1 (500m)
-  Proposed Power Line Corridor: Option 2 (500m)

TELKOM SA SOC LTD LEGEND

 OVERHEAD CABLE





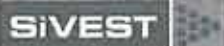
THE POSITIONS OF TELKOM SA PLANT ARE SHOWN AS ACCURATELY AS POSSIBLE, BUT THE POSITIONS MUST BE REGARDED AS APPROXIMATE ONLY

APPROVED BY: *Ben Roestof*
DATE: *14/2/2015*

APPROVED BY: *Nico Gort*
DATE: *14/2/2015*

SOURCE:
ESKOM HOLDINGS, 2012
MUNICIPAL DEMARICATION BOARD, 2011



 Kilometers


ENVIRONMENTAL DIVISION
 51 WESSELS ROAD
 RIVONIA, 2128
 JOHANNESBURG
 SOUTH AFRICA
 Phone: +27 11 780 0600
 Fax: +27 11 903 7272
 e-mail: info@sivest.co.za

Project No	Map Ref No	Prepared By	Date
13031	13031/SC1_01	KLS	24/02/2015

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THIS MAP HAS BEEN PREPARED UNDER THE CONTROLS ESTABLISHED BY THE SIVEST QUALITY MANAGEMENT SYSTEM AND MEETS THE REQUIREMENTS OF THE SETA QUALITY GRADING SYSTEM THAT IS ISO COMPLIANT



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Rosebank
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2196

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Fax: +27 (0) 11 442 2454
Email: atiplady@ska.ac.za

Andrea Gibb
Environmental Practitioner and Visual Specialist
SiVEST Environmental Division
PO Box 2921
Rivonia
2128

E-mail: andrea@sivest.co.za

Date: 17 December 2015

Dear Andrea,

**Re: Development of three 75MW Solar PV Energy Facilities (Helena Solar 1-3) near
Copperton in the Northern Cape Province.**

A high level risk assessment was conducted for the above mentioned photovoltaic electricity generation facilities, based on the distance to the nearest SKA station and information available on the detailed design of PV facilities. The result of the initial assessment, which indicated that the proposed facility could pose a medium to high risk of detrimental impact on the SKA telescope, was communicated to SiVest Environmental Division in a letter dated 23 February 2015. In the letter, it was recommended that further detailed electromagnetic interference (EMI) studies be conducted in order to scientifically validate the impact of the proposed PV facilities on the SKA, and also to identify any possible mitigation measures that could result in the facility meeting SKA radio emission protection requirements.

Since February, SKA South Africa has engaged with the developers, BioTherm Energy, on this and other projects. BioTherm appointed MESA Solutions (Pty) Ltd to conduct appropriate EMI studies. The initial results from the topographical technical report produced by MESA Solutions (Pty) Ltd, based on radio propagation simulations, were found to be inconclusive. SKA South Africa requested more detailed studies to be conducted, which would have to include measuring the electromagnetic profile of facilities that use similar technology as the one proposed for Helena PV facilities. These measurements have been conducted, and a report provided to SKA South Africa for review.

The results from both studies conducted by MESA Solutions indicates that the development of these facilities would pose a high risk of detrimental impact on the SKA radio telescope – higher than originally understood. This risk is even higher once consideration is given to the cumulative impact of multiple facilities at, or near, the proposed location. The proposed mitigation measures are untested at the scale of implementation required, and



technical proof of concepts would need to be implemented and measured to prove their efficacy before the identified risk is to be revisited.

If these facilities were to be developed as currently defined, they would pose an unacceptable risk to the SKA, and would not be able to meet SKA radio emission protection requirements as prescribed in the Astronomy Geographic Advantage Act. SKA South Africa therefore does not support the development of these projects as they are currently defined, or until further proof of concepts tests can be conducted to assess the efficacy of proposed mitigation measures, whereupon SKA South Africa will review the risk (review of this risk does not guarantee the risk can be reduced to an acceptable level).

This technical advice is provided by the South African SKA Project Office on the basis of the protection requirements of the SKA in South Africa, and does not constitute legal approval of the renewable energy projects in terms of the Astronomy Geographic Advantage Act, the Management Authority, and its regulations or declarations.

Regards,

Dr. Adrian Tiplady
Head of Strategy
SKA South Africa
Tel: 011 442 2434
Fax: 011 442 2454
atiplady@ska.ac.za



the denc

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 :
Dipatlisiso :
Navrae : I. Gwija
Imibuzo :

Date :
Letlha : 19th January 2016
Datum:
Umhla :

Reference :
Tshupelo : NC/NAT/PIX/SIY/COP1/2015
Verwysing : 14/12/16/3/3/2/765
Isalathiso : 14/12/16/3/3/2/766
14/12/16/3/3/2/767

SiVEST
51 Wessel Road
Rivonia
2128

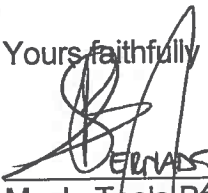
Fax: info@sivest.co.za

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY NEAR COPPERTON, NORTHERN CAPE PROVINCE.

The Department confirms having received the **EIA and X 1 CD** for environmental authorisation of the above mentioned project on the **14th January 2016**. As required in terms of the Environmental Impact Assessment Regulations, 2014.

The application has been assigned the reference number **NC/NAT/PIX/SIY/COP1/2015**. Kindly quote this reference number in any future correspondence in respect of the application. Please note the responsible officer is going to be **Mr Isaac Gwija** and can be contacted at **(053) 631 0601/16**.

Yours faithfully



Ms. L. Tools-Bernado
EIA: Administrator



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

Andrea Gibb
SiVEST Environmental Division
andrea@sivest.co.za

1 February 2016

Dear Andrea

Re: Proposed Construction of the three Helena 75MW solar photovoltaic (PV) energy facilities near Copperton, Northern Cape Province

DEA ref no: Helena solar 1: 14/12/16/3/3/2/765
Helena solar 2: 14/12/16/3/3/2/766
Helena solar 3: 14/12/16/3/3/2/767

BirdLife South Africa would like to thank you for the opportunity to comment on the above reports. We are pleased that an avifaunal specialist study has been conducted. As noted in the avifaunal specialist's report BirdLife South Africa's guidelines on solar energy (2012) are undergoing substantial update. The guidelines should be finalised soon and we encourage environmental assessment practitioners to familiarise themselves with the updated version and use these to guide the scope impact assessments in the future.

Seasonal variation can have a significant impact on the presence, absence or movement of bird species. Our updated guidelines therefore recommend that avifaunal studies for proposed developments such as Helena 1, 2 and 3 should include surveys over a period of at least 6 months, preferably spanning the wet and dry season. However, the updated guidelines have not been finalised, and given the homogenous nature of the receiving environment, and that surveys have been conducted for other proposed developments nearby, we are satisfied with the specialist's approach.

The proximity of the proposed developments to a Martial Eagle nest is a concern. We do not usually support the relocation of nests (preferring the relocation of developments to more suitable areas), but given the large number of developments around the area, and that the birds are already facing disturbance, displacement and effective habitat loss, the provision of an alternative structure for nesting may be a solution. However, nest relocation is invasive and success is not guaranteed. It is therefore important that the relevant authorities are consulted before proceeding. The location of the new nest site will need to be carefully selected to ensure that it is not within an area that has also been earmarked for development.

While we respect the need for security, we discourage the use of double fencing around the solar facility. Birds and other animals may get stuck between the fences causing unintended harm.

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Private Bag X5000, Parklands
Johannesburg, Gauteng 2121, South Africa
Tel: +27 (0)11 789 1122
Fax: +27 (0)11 789 5185
Email: info@birdlife.org.za
www.birdlife.org.za





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

We support the proposed use of Bird Flight Diverters and we recommend that their installation along the entire length of the new transmission line should be a condition of authorisation, should this be granted.

The EIA reports do not indicate whether evaporation ponds will be constructed. Appropriately designed evaporation pond(s) could provide valuable habitat to birds in this arid environment, although the benefits of this should be carefully weighed against the risk that contaminated water could pose to birds. If evaporation ponds are planned we suggest this issue should be addressed in the impact assessments.

BirdLife South Africa supports the responsible development of renewable energy. When viewed in isolation, we are satisfied that the impacts of the proposed facilities on birds have been adequately identified and addressed. However, the cumulative impact of displacement is a concern, particularly for species such as Martial Eagle, Ludwig's Bustard, Kori Bustard and endemic passerines. We therefore encourage developers/operators of solar facilities in the area to collaborate to ensure environmental impacts are minimised and that conservation gains are realised (e.g. with regards to the relocation and monitoring of the Martial Eagle nest, the management of remaining habitat, and minimising the use of fencing).

Given our limited understanding of the impacts of solar energy on birds we strongly support the proposed operational-phase monitoring of birds. Again, significant gains could be made though collaborating with neighbouring renewable energy facilities in this regard (i.e. resources could be pooled to look at questions most relevant to the fauna in the area).

BirdLife South Africa wishes to facilitate the exchange of information and help improve decision-making in the future; we therefore request that the results of operational-phase monitoring be shared with us and made available to other relevant stakeholders.

Yours sincerely

Simon Gear
Policy & Advocacy Manager

with

Mmatjie Mashao
Birds and Renewable Energy Intern

Isdell House, 17 Hume Road
Dunkeld West, Gauteng 2196
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Partnership for
Sustainable Design



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



agriculture, forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

Private Bag X120, Pretoria (Tshwane), 0001
Delpen Building, C/o Annie Botha & Union Street, Riviera, 0084

From: Directorate Land Use and Soil Management
Tel: 012-319-7634 Fax: 012-329-5938 E-mail: Thokob@nda.agric.za
Enquiries: Helpdesk Ref: 2015_12_0073

Sivest Environmental
P. O. Box 2921
RIVONIA
2128

Attention: Andrea Gibb

PROPOSED CONTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITY ON PORTION 4 AND PORTION 5 OF THE FARM KLIP PAN NO. 117, NORTHERN CAPE PROVINCE

Your letter bearing reference 13031 dated November 2015 refers.

With reference to the above-mentioned matter, the department wishes to inform you that it has no objection against the Solar Energy Facility on the above mentioned property measuring approximately 1266 hectares. However the following needs to be adhered to:

- This approval is granted subject to the proposed project being awarded as a preferred bidder by the Department of Energy.
- Any further extension of this proposed project should be reviewed in terms of the Subdivision of Agricultural Land Act, 70 (Act 70 of 1970).
- No subdivision for the purposes of demarcating the individual footprint area should be allowed.
- No construction should be placed in areas that are of high or unique agricultural value and those that are under cultivation.
- Natural vegetation should be restored after the construction of the plant to prevent degradation.
- Where applicable a provision should be made for the control of runoff water.
- Water needed for the maintenance of the site should not be sourced from existing water rights allocated to the site or nearby farm portions as it will negatively impact on agricultural production.

- The applicant should take responsibility for the maintenance and well being of the natural resources base of the site.
- These comments are valid for two years and if the development does not take place, the proposed rezoned portions must revert back to its original parent portion and remain agricultural land in terms of section (1) of the Subdivision of Agricultural Land Act, Act 70 of 1970.
- The application for the registration of the long-term lease shall be considered upon receipt of the positive Record of Decision and a copy of the rezoning approval.

These comments do not exempt any person from the provisions of any other law, with special reference to the Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983) and does not purport to interfere with the rights of any person who may have an interest in the agricultural land.

Yours faithfully



DR M.E. TAU
DEPUTY DIRECTOR-GENERAL: FORESTRY
AND NATURAL RESOURCES MANAGEMENT
DELEGATE OF THE MINISTER

DATE: 27.07.2016

CC: Coenrad Agenbach, Deputy Director: Environmental Impact Evaluation: Special Projects, Department of Environmental Affairs,
Private Bag X447, PRETORIA, 0001
Fax: 012 320 7539

Andrea Gibb

From: Andrea Gibb
Sent: Wednesday, May 13, 2015 7:58 AM
To: 'René de Kock (WR)'
Subject: RE: Helena PV Energy Facilities near Copperton: Public Meeting Invite
Attachments: A3_13031_SiteLocalityLR.pdf

Hi René

Attached is the site locality map. As indicated on the map, no national roads are located within close proximity to the proposed development.

Kind Regards

Andrea Gibb (B.Sc. Landscape Architecture; B.Sc.(Hons) Environmental Management)
Environmental Practitioner and Visual Specialist
SiVEST Environmental Division



SiVEST is a Level 3 BBBEE Contributor

Direct +27 11 798 0638 **Tel** +27 11 798 0600 **fax** +27 11 803 7272 **cell** +27 72 587 6525
email andrea@sivest.co.za **website** www.sivest.co.za



Consulting Engineers - Project Managers - Environmental Consultants - Town and Regional Planners
Durban - Johannesburg - Pietermaritzburg - Richards Bay - Ladysmith - Cape Town - Harare (Zimbabwe)

From: René de Kock (WR) [mailto:Dekockr@nra.co.za]
Sent: Tuesday, May 12, 2015 3:01 PM
To: Andrea Gibb
Subject: RE: Helena PV Energy Facilities near Copperton: Public Meeting Invite

Andrea,

Thank you for your email.

Please forward me a locality map in relation to the site and the national road. I need to make sure if SANRAL is affected or not.

Kind regards



Ms René de Kock

Statutory Control
Tel: +27 21 957 4607
Fax: +21 946 1630



Are you ready?
Get tagged

Cell:
Email: Dekockr@nra.co.za

Western Region
1 Havenga Street Oakdale Bellville
Private Bag X19
www.nra.co.za
SANRAL Fraud Hotline: 0800204558

From: Andrea Gibb [<mailto:AndreaG@sivest.co.za>]
Sent: 12 May 2015 02:14 PM
Cc: Nicolene Venter (nicolenev@zitholele.co.za); Lynsey Rimbault
Subject: Helena PV Energy Facilities near Copperton: Public Meeting Invite

Dear Stakeholder

Attached herewith is your invitation and draft agenda for the Public Meeting that will be held on **Thursday 21 May 2015** at the Omega Hall, Bonteheuwel, Prieska at 16h30.
Kindly complete the attached Registration Form and return it to us before **Tuesday 19 May 2015**.

Kind Regards

Beste Rolspeler

Aangeheg is u uitnodiging en konsep agenda vir die Publiekevergadering wat op **Donderdag 21 Mei 2015** by Omega Hall, Bonteheuwel, Prieska om 16h30 gehou word.
U word vriendelik versoek om die aangehegde Registrasievorm te voltooi en aan ons deur te stuur voor of op **Dinsdag 19 Mei 2015**.

Vriendelike groete

Kind Regards
Andrea Gibb (B.Sc. Landscape Architecture; B.Sc.(Hons) Environmental Management)
Environmental Practitioner and Visual Specialist
SIVEST Environmental Division



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If verification is required please request a hard-copy version. The South African National Roads Agency SOC Ltd, PO Box 415, Pretoria, 0001, South Africa, Tel +27-(0)12 844 8000, www.nra.co.za.

This Disclaimer is deemed to form part of the content of this email in terms of Section 11 of the Electronic Communications and Transactions Act, 25 of 2002.

Lynsey Rimbault

From: Lynsey Rimbault
Sent: 27 August 2015 13:32
To: 'nuys.denc@gmail.com'
Cc: Hlengiwe Ntuli
Subject: RE: Helena Solar 1, 2 & 3 Final Scoping Reports Submitted to the DEA

Dear Natalie,

We apologise for the delayed reply. The full three reports (including all appendices) are available on the SiVEST website at : <http://www.sivest.co.za/> click on 'Downloads'. They should be easily available at the same speed as Dropbox. If necessary I can create a Dropbox folder that contains the three FSRs but excluding appendices. Please let me know if this is necessary.

Kind Regards

Lynsey Rimbault (B.Sc.(Hons) Geography; M.Sc. Biodiversity, Conservation and Management)
Environmental Consultant
SiVEST Environmental



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email lynseyr@sivest.co.za **website** www.sivest.co.za



Consulting Engineers - Project Managers - Environmental Consultants - Town and Regional Planners
Durban - Johannesburg - Pietermaritzburg - Richards Bay - Ladysmith - Cape Town - Harare (Zimbabwe)

From: Natalie Uys [<mailto:nuys.denc@gmail.com>]
Sent: 18 August 2015 09:36 AM
To: Hlengiwe Ntuli <HlengiweN@sivest.co.za>
Subject: Re: Helena Solar 1, 2 & 3 Final Scoping Reports Submitted to the DEA

Dear Hlengiwe

Is it possible for you to please send me a dropbox file for the 3 facilities info to make it easier to access and download over the slow connection?

Best regards
Natalie

Best regards
Natalie Uys
Candidate Scientist:Botanist on Contract

Northern Cape Department of Environment and Nature Conservation (DENC), Private Bag X6102, Kimberley, 8300. Tel: 053 - 807 7430/72/81 Fax: 053 - 831 3530 Cell nr. (3G): 0716047621 (can only receive calls), Email: nuys.denc@gmail.com
Website: <http://denc.ncpg.gov.za/> Permit office contact information: Email: dencpermits@ncpg.gov.za (2MB) (For submitting new applications); Tel: 053-8077510/7477; Fax: 086 5151 769 (For submitting new applications) Courier address: 90 Long Street / Longstraat 90, Kimberley. Forms: <http://denc.ncpg.gov.za/index.php/44-about-us/our-services-to-you/117-permit-applications;>

On 18 August 2015 at 09:23, Hlengiwe Ntuli <HlengiweN@sivest.co.za> wrote:

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Dear Interested and/or Affected Party

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) AND ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) FOR THE THREE HELENA SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

DEA Ref. **HELENA SOLAR 1: 14/12/16/3/3/2/765**

HELENA SOLAR 2: 14/12/16/3/3/2/766

HELENA SOLAR 3: 14/12/16/3/3/2/767

• **FSR AVAILABLE FOR REVIEW**

We wish to express our appreciation to the stakeholders who submitted comments on the Draft Scoping Reports (DSRs) for the above mentioned proposed projects during the public review period (Thursday 28 May 2015 to Monday 29 June 2015). After the public review period, the DSRs were updated, taking into consideration the issues and concerns raised by stakeholders.

The Final Scoping Reports (FSRs) were submitted to the Department of Environmental Affairs (DEA) for their consideration on Monday 17 August 2015.

In accordance with the National Environmental Management Act (NEMA), the FSRs will be available for public comment and review from **Tuesday 18 August 2015 to Monday 7 September 2015** (end of business day). The FSRs are available on SiVEST's website: <http://www.sivest.co.za/> click on 'Downloads' (top right), then scroll down to *13031 Helena PV EIA*. Alternatively, please contact SiVEST to obtain an electronic copy of the reports on CD.

Should you have any comments on the FSRs, please submit these in writing directly to the DEA on or before **Monday 7 September 2015** (close of business day):

Department of Environmental Affairs (DEA)

Ms Mmatlala Rabothata

Private Bag X447

PRETORIA

0001

Tel: 012 399 9372

Email: mrabothata@environment.gov.za

As per the EIA Regulations, please send a copy of your comments to the SiVEST Office at the following address:

SiVEST Environmental

Andrea Gibb

PO BOX 2921

Rivonia

2128

Tel: 011 798 0600

Fax: 011 803 7272

Email: andreag@sivest.co.za

Kind Regards,

Andrea Gibb

Environmental Practitioner

SiVEST Environmental Division

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email AndreaG@sivest.co.za **website** www.sivest.co.za

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Andrea Gibb

From: Andrea Gibb
Sent: Friday, December 04, 2015 7:44 AM
To: 'HettieB@daff.gov.za'
Cc: Lynsey Rimbault; Hlengiwe Ntuli
Subject: RE: Helena 1, 2 and 3 Solar PV Facilities: EIA Newsletter
Attachments: Helena Solar Title Deed - CTN - T18316_2008.pdf

Hi Hettie

Attached is the title deed document as requested.

Kind Regards

Andrea Gibb (B.Sc. Landscape Architecture; B.Sc.(Hons) Environmental Management)
Environmental Practitioner and Visual Specialist
SIVEST Environmental Division



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Durban - Johannesburg - Pietermaritzburg - Richards Bay - Ladysmith - Cape Town - Harare (Zimbabwe)

From: HettieB [<mailto:HettieB@daff.gov.za>]
Sent: 02 December 2015 11:16 AM
To: Hlengiwe Ntuli <HlengiweN@sivest.co.za>
Subject: RE: Helena 1, 2 and 3 Solar PV Facilities: EIA Newsletter

Good day
Please send me the title deed on this property.

Regards
Hettie Buys

From: Hlengiwe Ntuli [<mailto:HlengiweN@sivest.co.za>]
Sent: 30 November 2015 02:52 PM
Cc: Andrea Gibb; Lynsey Rimbault
Subject: Helena 1, 2 and 3 Solar PV Facilities: EIA Newsletter

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Dear Stakeholder

We would like to take this opportunity to inform you that the Department of Environmental Affairs has accepted the Final Scoping Reports and approved the Plan of Study for the Environmental Impact Phase of the Helena 1, 2, and 3 Solar Photovoltaic Energy Facilities.

Attached is the EIA Newsletter, Comment form and Site Locality Map for your information.

Kind Regards

Andrea Gibb (B.Sc. Landscape Architecture; B.Sc.(Hons) Environmental Management) Environmental Practitioner and Visual Specialist SiVEST Environmental Division

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OIE EN OBPR VIR DIE VOORGESTELDE ONTWIKKELING VAN DRIE 75 MW FOTOVOLTAÏESE (FV) SONKRAGAAANLEGTE NABY COPPERTON, NOORD-KAAPPROVINSIE

- HELENA SOLAR 1 – DO Verw. No.: 14/12/16/3/3/2/765
- HELENA SOLAR 2 – DO Verw. No.: 14/12/16/3/3/2/766
- HELENA SOLAR 3 – DO Verw. No.: 14/12/16/3/3/2/767

REGISTRASIE- EN KOMMENTAARVORM

Vergesel die AgtergrondInligtingsdokument: 18 Februarie 2015



Openbare Deelnamekantoor



Andrea Gibb / Lynsey Rimbault
 SIVEST Environmental
 Posbus 2921, RIVONIA, 2128
 Tel: 011 798 0600
 Faks: 011 803 7272
 E-pos: andreag@sivest.co.za /
 lynseyr@sivest.co.za

Vul asseblief in teen Donderdag, 19 Maart 2015 en stuur dit per pos, faks of e-pos terug aan die Openbare Deelnamekantoor (soos hierbo).

TITEL	MNR.	VOORNAAM	FRANCOIS.
VOORLETTERS	F.P.	VAN	EKLERD
INSTANSIE	BOER. UITSAANVAAR		
POSADRES	BUS 446	POSKODE	8940
TEL NO.	0833808427	FAKS NO.	

REGISTRASIE AS BELANGSTELLEDE EN/OF GEAFFEKTEERDE PARTY (B&GP) (omkring asseblief die toepaslike blokkie)

Registreer my asseblief formeel as 'n belangstellende en geaffekteerde party (B&GP) sodat ek verdere inligting en kennisgewings tydens die OIE-proses kan ontvang.	<input checked="" type="checkbox"/>	NEE
Ingevolge Staatskennisgewing R543 (2010 OIE-regulasies) maak ek hieronder enige regstreekse sake, finansiële, persoonlike of ander belang wat ek mag hê in die goedkeuring of afkeuring van die aansoek om omgewingsmagtiging bekend (gebruik gerus aparte bladsye indien u wil):		

KOMMENTAAR (gebruik gerus aparte bladsye indien u wil)

Ek stel voor dat die volgende knelpunte tydens die OIE ondersoek word:

.....

.....

Ek stel die volgende vir die OIE-proses en/of die openbare deelnameproses voor:

.....

.....

Enige ander kommentaar:

DIE PAD VANAF DIE R357 NA KLIPGATSPAN GED.1 MAGNIE GESLUIT WORD. DIT IS MY TOEGANGS ROETE TOT DIE GROND.

Tree asseblief in verbinding met my onderstaande kollegas/vriende om as B&GP's vir hierdie OIE te registreer (naam en kontakbesonderhede, bv. e-posadres):

.....

.....

Handtekening

DANKIE VIR U BYDRAE

Datum

Andrea Gibb

From: Lynsey Rimbault
Sent: Thursday, May 28, 2015 11:54 AM
To: fjandreas.fa@gmail.com; andrea@eskom.co.za
Cc: Andrea Gibb; Irene Bezuidenhout
Subject: RE: Bio Therm solar project

Hi Frank,

SiVEST is the Environmental Impact Assessment Practitioner on the Helena projects. We are responsible for assessing the environmental impact of the project, but we are not involved in the project development at all.

I have forwarded your email to Irene Bezuidenhout from BioTherm Energy. She can direct you to the correct person to address your enquiry to.

Kind Regards

Lynsey Rimbault (B.Sc.(Hons) Geography; M.Sc. Biodiversity, Conservation and Management)
Environmental Consultant
SiVEST Environmental



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email lynsey@sivest.co.za website www.sivest.co.za



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From: Frank Andreas [mailto:fjandreas.fa@gmail.com]
Sent: 26 May 2015 11:16
To: andreaq@sivest.co.za; andrea@eskom.co.za; Lynsey Rimbault
Subject: Bio Therm solar project

Hi

In terms of the presentation presented in Prieska community hall for the Prieska community refer to the construction part of your project for Bio Therm Energy.

We have a construction company which are interested to do construction work on your plant in order to compliment local based Bee representation and what we want is information to enter such discussions into a contract.

Do you already appoint a main contractor for the establishment to which we can apply and negotiate subcontracting work for or is there scope to apply for the construction job directly to SiVEST.

Please guide me through that process and do not hesitate to contact me on my cell: 081 098 9446 for any feedback regarding the project.

Regards
Frank Andreas

F.P Ekkerd
Posbus 446
Prieska
8940

7 Julie 2015

Si Vest Environmental
Posbus 2921
Rivona 2128
Faks: 011 803 7272
Epos: andreaag@sivest.co.za

BEOOGDE: P.V SONKRAG AANGLEGTE TE KLIPPAN N.C. HELENA SOLAR
1.2.3

Ek eenaar van die naby geleë plaas Uitspanpan beskou myself as 'n groene. Op die plaas bedryf ek al vir die afgelope 25 jaar my eie sonkrag stelsel. Ek is baie bly en opgewonde oor die aanlegte wat hier opgerig sal word. Voor my afgetrede as ingenieur het ek verskeie hidroelektriese skemas vir boere uitgewerk net om van die tafel af gegee te word deur Eskom en samespanning met die Department van Waterwese.

Dit is ook dat enige ontwikkeling tot voordeel van die hele gemeenskap sover moontlik moet strek. President Zuma het onlangs 'n beroep op sakelui gedoen om in die platteland te belê sodoende sal armoede en werkloosheid bekamp word. Dit is ook my uitgangspunt om daar toe 'n bydrae te lewer hoe klein ook al. So het die paaië afdeling kosteloos water op my plaas onttrek asook was die verwydering van gruis uit die leengroewe kosteloos. Ek beskou die werk van die paaië afdeling as 'n vooruitgang vir die gemeenskap.

So het ek dan ook water kosteloos verskaf aan die kontrakteur by een van die terreine waar daar werk aan die gang is vir die sonplaas. Die ontwikkeling gaan ook nie gepaard sonder probleme nie. Daar word tans beoog om 24 sonplase (1 windplaas) hier te ontwikkel en dit net op 4 plase.

Die gemeenskap voel ongelukkig oor die toedrag van sake en bepleit 'n beter regverdiige verdeling. As die verdeling oor 24 plase geskied sal dit 'n groter ekonomiese impak op die omgewing en dorp hê. Die aantal plase sal maklik byvoorbeeld 150 arbeiders of huishoudings kan absorbeer terwyl 4 plase sowat 20 mense sal absorbeer. Om 'n stelling te maak en te sê dit is nie ekonomies haalbaar nie is geen rede nie. As ek kyk en ek sien die daaglikse korrupsie jaloesie en rugstekery wat hier plaasvind dan is daar beslis nie 'n tekort aan geld nie. Alles word onder dekmantel van BEE gedoen. BEE het 'n rookskerm vir korrupsie geword. Ek self was 'n slagoffer van so 'n komplot en het dit my baie kostes uit die sak gejaag om die teendeel te bewys. Ek het 'n swart vennoot (hy het terloops op die plaas Klippan groot geword en sy vader is daar begrawe).

Ten einde my vennoot te help het ek gevera om die heinings by die sonplase te span. Dit is my geweier want ek wou nie geld betaal nie. Daar is glo 'n kontrakteur wat dit doen en hy vlieg met helikopter. Dit is die eerste draadkamper wat ek hoor wat met 'n helikopter vlieg.

Ek wil u dus in kennis stel dat ek ernstig beswaar daarteen het vir die oprigting van 3 sonaanglegte te Klippan. Die aanglegte moet in Noord-Suid na 'n Oos-Wes rigting gedraai word. Die aanlegte sal dan oor 3 plase strek nl. Klippan, Irene en Uitspanpan. Die probleem of ek eerder sê die vooruitgang wat hierdie aanlegte te weeg kan bring is astronomies as dit reg hanteer word. Die aanlegte is alreeds met Afriforum en Solidariteit opgeneem en ons wag op sekere skrywe. Daar was tot soveer geen blankes in diens geneem nie en die uit die agtergeblewende gemeenskappe is minimaal. Dit wat ek hier vermeld het is alles op terrein waarneembaar. Met elke konstruksie van die 3 aangegte sal hierdie slegte dinge ook nie vry gespring word. Wag op u antwoord.

Die Uwe



E.P EKKERD

**PROPOSED
CONSTRUCTION OF A
THREE PHASED 75MW
SOLAR PHOTOVOLTAIC
(PV) ENERGY FACILITY
HELENA SOLAR 1;
HELENA SOLAR 2 AND
HELENA SOLAR 3
NEAR COPPERTON
NORTHERN CAPE
PROVINCE
SITE LOCALITY**

- Legend**
- Development Areas
 - Helena Solar 1
 - Helena Solar 2
 - Helena Solar 3
 - Main Roads
 - Railway Line
 - Power Lines (100kV)
 - Existing Substation
 - Adjoining Farm
 - Application Site
 - Substation Assessment Area
 - Proposed Power Line Corridor Option 1 (50cm)
 - Proposed Power Line Corridor Option 2 (50cm)

SIVEST

Environmental Division

Scale: 1:50,000

Project No.	Map Sheet No.	Project No.	Date
2024/001	2024/001	2024/001	2024/001

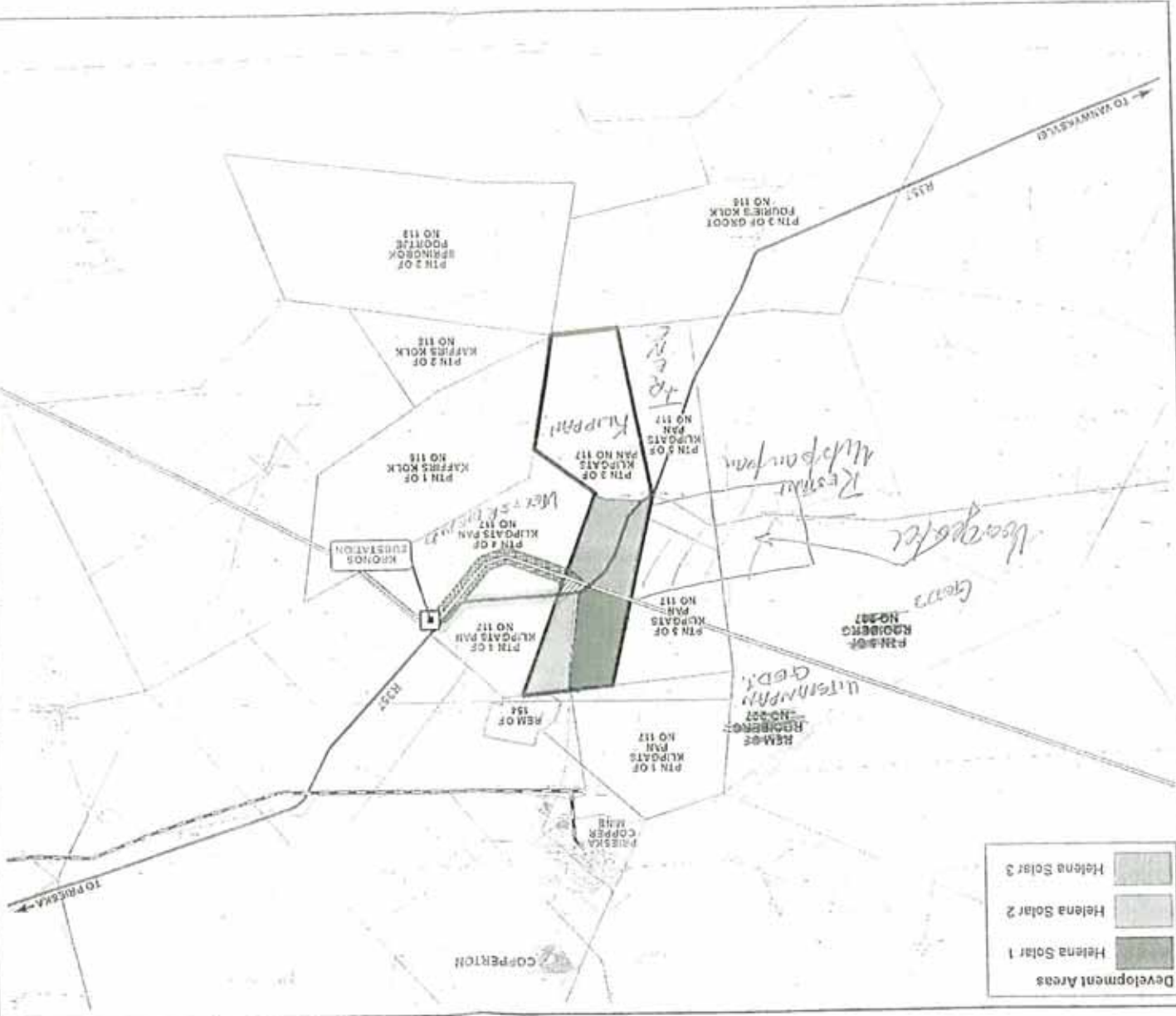


Figure 1: Locality Map / Figuur 1: Ligingskaart

F.P Ekkerd
P.O. Box 446
Prieska
8940

7 July 2015

SiVEST Environmental
P.O. Box 2921
Rivonia 2128
Fax: 011 803 7272
Email: andreag@sivest.co.za

PLANNED: PV SOLAR POWER FACILITY/PLANT AT THE FARM KLIPPAN NC. HELENA SOLAR 1, 2, 3.

I, the owner of the nearby situated Farm Uitspanpan, regard myself as a "greenie". For the past 25 years I have been running/maintaining my own solar power facility / unit on my/the farm. I am very pleased and excited about the new/planned facility/plant that is to be constructed here. Before my retirement as an Engineer, I proposed various hydroelectric schemes/systems for farmers just to have them scrapped (from the table) by Eskom in co-operation/association with the Department of Water Affairs.

It must be said that any development should also be in the best interest of/advantageous to the entire community so far as possible. President Zuma recently appealed to entrepreneurs/businessmen/businesses to invest in the country/ rural or pastoral communities in order to fight against poverty and unemployment. It is also my point to make a contribution towards this, however small it may be. The Department of Roads/Roadworks therefore withdrew water from my farm free of charge and the removal of debris from the borrow pits was also done free of charge. I consider the work of the Department of Roads/Roadworks to be progress for the community.

I also supplied/ distributed water free of charge to the Contactor at one of the sites where work is being done on the Solar Facility/Solar Farm. The development is also not without its issues. It is currently contemplated/ planned to develop/construct 24 Solar Facilities/Solar farms (1 Wind farm), and all of this on just 4 farms.

The community feels unhappy about the state of affairs and advocate/support a better, equitable distribution. If the distribution (of the facilities) is made over 24 farms it will have a bigger economic impact/effect on the community and the town. This number of farms will easily be able to absorb/support 150 workers or households while 4 farms will only absorb about 20 people/individuals. To make a statement by saying that it is not economically feasible is no reason at all. If I look and see the daily corruption, jealousy, and backstabbing that takes place here then there is definitely/surely no shortage of money. Everything is done under cover of BEE. BEE has become a "smoke-screen" for corruption. I myself was a victim of such a plot/conspiracy and it cost me a lot of money to prove the contrary. I have a black partner (he grew up on the Farm Klippan and his father is buried there).

In order to help my partner I asked to erect/span the fences at the Solar Facilities/ Solar Farms. I was refused this because/as I did not want to pay money. There is apparently a Contractor which is in charge of/doing this (the fencing) and he flies with a helicopter. This is the first fencing person (draadkammer is somebody who does fences) I hear of that flies with a helicopter.

I therefore want to inform you that I strongly objected to the erection/installation/construction of the 3 Solar Facilities/plants at Klippan. The Facilities/plants must be turned North-South in an East-West direction. The Facilities/plants will then stretch over 3 farms, namely Klippan, Irene and Uitspanpan. The problem, or let me rather say the progress, that these Facilities/plants can bring/produce is astronomical if it is handled correctly. The issue of the Facilities/Plants has already been taken up with Afriforum and Solidarity (Solidaritet) and we are currently waiting for certain letters. So far there have been no white individuals that have been employed and those that have been employed from disadvantaged communities are minimal. Everything I have mention here is perceptible/visible on site. With the construction of each of the 3 facilities/plants, these bad things/issues will not be avoided. Awaiting your reply.

Yours truly,

E.P EKKERD

Andrea Gibb

Subject: FW: Helena 1, 2 and 3 Landowner FGM Draft Minutes

From: Gerrie Rudolph [<mailto:gerrierudolph@vodamail.co.za>]

Sent: 08 July 2015 06:48 PM

To: Veronique Evans <VeroniqueE@sivest.co.za>

Subject: Re: Helena 1, 2 and 3 Landowner FGM Draft Minutes

Hi Veronique,

I see that a CD has been posted during May 2015 to me of which up to date I have not received.

I have cleared y post today and nothing of that sorts was found.

Kind regards.

Gerrie

From: [Veronique Evans](#)

Sent: Wednesday, July 08, 2015 2:37 PM

Cc: [Danie & Jomima Bernard](#) ; [Jermaine Isaacs](#) ; [Chetna Mistry](#) ; [Irene Richardson](#) ; [Lynsey Rimbault](#) ; [Gerrie Rudolph](#) ; [Lynsey Rimbault](#) ; [Andrea Gibb](#)

Subject: Helena 1, 2 and 3 Landowner FGM Draft Minutes

******* Please note that this email was sent from a NO REPLY email address. Please do not reply to this address as it is an unmonitored email account. *******

Dear Stakeholder,

Please see attached the Draft Minutes for the Landowner Focus Group Meeting held at letznietz Guest House, Copperton on Friday the 22nd of May 2015.

Please submit your comments on the Draft Minutes on or before Wednesday 15 July 2015.

Kind Regards

Andrea Gibb (B.Sc. Landscape Architecture; B.Sc.(Hons) Environmental Management)

Environmental Practitioner and Visual Specialist

SIVEST Environmental Division



SIVEST is a Level 3 BBBEE Contributor

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email andrea@sivest.co.za **website** www.sivest.co.za

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M&M VAN NIEKERK

Prokureurs en Transportbesorgers
(voorheen Van Niekerk & Groenewoud)

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Prieska 8940

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Faks: (053) 353 2344
E-pos: vankerk@mjvn.co.za

Ons verwysing: FJ LOTZ / ep/EKK1/0001

U verwysing: 13031

23 NOVEMBER 2015

SIVEST
RIVONIA

PER FAX: (011) 803 7272

ENVIRONMENTAL IMPACT ASSESSMENT: HELENA SOLAR 1; 2 & 3

We attach hereto letter from yourselves received by our client Mr FP Ekkerd.

Mnr Ekkerd consequently replied to your letter on 7 July 2015 of which letter we also attach a copy hereto.

Please provide us with your response thereto as a matter of urgency.

Die uwe



M & M VAN NIEKERK ING.

SIVEST
Environmental

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2128
Gauleng, South Africa

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Fax + 27 11 803 7272
Email info@sivest.co.za
www.sivest.co.za



Established 1952

Your reference	N/A
Our reference	13031
Date	18 February 2015

Dear Interested and/or Affected Party

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) AND ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) FOR THE PROPOSED DEVELOPMENT OF THREE 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE (HELENA SOLAR 1 – DEA Ref No: 14/12/16/3/3/2/765, HELENA SOLAR 2 – DEA Ref No: 14/12/16/3/3/2/766, HELENA SOLAR 3 – DEA Ref No: 14/12/16/3/3/2/767)

• INVITATION TO PARTICIPATE IN THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

In terms of the EIA Regulations and the National Environmental Management Act, 1998 (Act No. 107 of 1998), SIVEST SA (Pty) Ltd (hereafter referred to as SIVEST) has been appointed as the independent Environmental Assessment Practitioner (EAP) by BioTherm Energy (Pty) Ltd (hereafter referred to as BioTherm) to conduct the EIA process for the proposed development of a three phase solar photovoltaic (PV) energy facility with a total export capacity of 225MW. The proposed project is located in the Northern Cape Province near Copperton and will consist of three 75MW export capacity solar PV facilities referred to as Helena Solar 1, 2 and 3. The project is registered with the Department of Environmental Affairs (DEA) under the following reference numbers:

- Helena Solar 1 – DEA Ref No: 14/12/16/3/3/2/765
- Helena Solar 2 – DEA Ref No: 14/12/16/3/3/2/766
- Helena Solar 3 – DEA Ref No: 14/12/16/3/3/2/767

SIVEST would like to invite you, as a potential Interested and/or Affected Party (I&AP), to become actively involved in the EIA and public participation process for this proposed project. The aim of this process are as follows:

- to ensure that all the relevant environmental impacts are taken into consideration;
- to ensure public input; and
- provide decision-makers with sufficient information to make an informed decision on the proposed activities.

Attached is the BID which contains information regarding the proposed project as well as the EIA and public participation process.

By completing and submitting the accompanying registration and comment form, you will be registered as an I&AP on the project database.

We would like to thank you, in advance, for becoming part of the public participation process and are looking forward to receiving your valuable comments relating to the proposed project.

Yours sincerely

Andrea Gibb
Environmental Practitioner
SIVEST Environmental Division

encl: Background Information Document
Registration and Comment Form

F.P Ekkerd
Posbus 446
Prieska
8940

7 Julie 2015

Si Vest Environmental
Posbus 2921
Rivona 2128
Faks: 011 803 7272
Epos: andreag@sivest.co.za

BEOOGDE: P.V SONKRAG AANGLEGTE TE KLIPPAN NC. HELENA SOLAR
1, 2, 3

Ek eienaar van die naby geleë plaas Uitspanpan beskou myself as 'n groene. Op die plaas bedryf ek al vir die afgelope 25 jaar my eie sonkrag stelsel. Ek is baie bly en opgewonde oor die aanlegte wat hier opgerig sal word. Voor my afgetrede as ingenieur het ek verskeie hidroelektriese skemas vir boere uitgewerk net om van die tafel af gegee te word deur Eskom en samespanning met die Department van Waterwese.

Dit is ook dat enige ontwikkeling tot voordeel van die hele gemeenskap sover moontlik moet strek. President Zuma het onlangs 'n beroep op sakelui gedoen om in die platteland te belê sodoende sal armoede en werkloosheid bekamp word. Dit is ook my uitgangspunt om daar toe 'n bydrae te lewer hoe klein ook al. So het die paaie afdeling kosteloos water op my plaas onttrek asook was die verwydering van gruis uit die leengroewe kosteloos. Ek beksou die werk van die paaie afdeling as 'n vooruitgang vir die gemeenskap.

So het ek dan ook water kosteloos verskaf aan die kontrakteur by een van die terreine waar daar werk aan die gang is vir die sonplaas. Die ontwikkeling gaan ook nie gepaard sonder probleme nie. Daar word tans beoog om 24 sonplase (1 windplaas) hier te ontwikkel en dit net op 4 plase.

Die gemeenskap voel ongelukkig oor die toedrag van sake en bepleit 'n beter regverdige verdeling. As die verdeling oor 24 plase geskied sal dit 'n groter ekonomiese impak op die omgewing en dorp hê. Die aantal plase sal maklik byvoorbeeld 150 arbeiders of huishoudings kan absorbeer terwyl 4 plase sowat 20 mense sal absorbeer, Om 'n stelling te maak en te sê dit is nie ekonomies haalbaar nie is geen rede nie. As ek kyk en ek sien die daaglikse korrupsie jaloesie en rugstekery wat hier plaasvind dan is daar beslis nie 'n tekort aan geld nie. Alles word onder dekmantel van BEE gedoen. BEE het 'n rookskerm vir korrupsie geword. Ek self was 'n slagoffer van so 'n komplot en het dit my baie kostes uit die sak gejaag om die teendeel te bewys. Ek het 'n swart vennoot (hy het terloops op die plaas Klippan groot geword en sy vader is daar begrawe).

Ten einde my vennoot te help het ek gevra om die heinings by die sonplase te span. Dit is my geweier want ek wou nie geld betaal nie. Daar is glo 'n kontrakteur wat dit doen en hy vlieg met helikopter. Dit is die eerste draadkamper wat ek hoor wat met 'n helikopter vlieg.

Ek wil u dus in kennis stel dat ek ernstig beswaar daarteen het vir die oprigting van 3 sonaanglegte te Klippan. Die aanglegte moet in Noord-Suid na 'n Oos-Wes rigting gedraai word. Die aanlegte sal dan oor 3 plase strek nl. Klippan, Irene en Uitspanpan. Die probleem of ek eerder sê die vooruitgang wat hierdie aanlegte te weeg kan bring is astronomies as dit reg hanteer word. Die aanlegte is alreeds met Afriforum en Solidariteit opgeneem en ons wag op sekere skrywe. Daar was tot soveer geen blankes in diens geneem nie en die uit die agtergeblewende gemeeskappe is minimaal. Dit wat ek hier vermeld het is alles op terrein waarneembaar. Met elke konstruksie van die 3 aangelegte sal hierdie slegte dinge ook nie vry gespring word. Wag op u antwoord.

Die Uwe



E.P EKKERD

THANK YOU FOR YOUR CONTRIBUTION

Signature

Date

05/01/2016

Firstly, I need to inform you that I did submit my CV for a position at the project office in Pisto around April 2015. Until now, I was not contacted and that is surprising to me because a lot of applicants around me have been employed since we went to apply at the same time. I have experience in Advanced Driving Truck operation I also have experience working with a team without supervision. My experience in security also contributes to my skills. Therefore I am applying for a position as a manager on 1 of any of the abovementioned sites.

I have the following issues and concerns regarding the EIA Newsletter, EIA Process or Helena 1/Helena 2/Helena 3 project (kindly specify the project you are enquiring for):

NGO-Managerial position in on of abovementioned sites

COMMENTS: (You are welcome to use a separate sheet if required)

TITLE	Mr
INITIALS	T.C.
ORGANISATION	Personal
POSTAL ADDRESS	P.O. Box 284 Pisto
TEL NO	Cell # 0724425955/FAX NO
FIRST NAME	Themba
SURNAME	NOHENDU
EMAIL	thembano@gmail.com or thembano505@gmail.com
POSTAL CODE	8940

Please complete and return to the Public Participation Office (as above)

WE WOULD WELCOME YOUR COMMENTS ON THE EIA NEWSLETTER

<p>ENVIRONMENTAL IMPACT ASSESSMENT (EIA) AND ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPM) FOR THE THREE HELENA SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE</p> <p>HELENA SOLAR 1: 14/12/16/3/3/21765 HELENA SOLAR 2: 14/12/16/3/3/21766 HELENA SOLAR 3: 14/12/16/3/3/21767</p> <p>COMMENT FORM</p> <p>EIA NEWSLETTER</p>	<p>DEA Ref.</p>
<p>SIVEST</p> <p>Public Participation Office</p>	<p>Andrea Gibb / Lynsey Rimbault SIVEST Environmental PO Box 2921, RIVONIA, 2128 Tel (011) 798 0800 Fax (011) 803 7272 Email andrea@sivest.co.za / lynsey@sivest.co.za</p>

Andrea Gibb

Subject: FW: 13031 Helena PV Project Update

From: Melanie Miles [<mailto:MelanieM@L2B.co.za>]

Sent: 04 August 2016 04:15 PM

To: Kelly Tucker <KellyT@sivest.co.za>

Subject: 13031 Helena PV Project Update

Dear Kelly,

Further to our correspondence below with Lynsey, please could you advise if the Helena PV Projects remain on hold?

I look forward to your response

Kindest Regards,

Melanie Miles
Regional Content Researcher
Private Projects
MelanieM@L2B.co.za

Leads 2 Business (www.L2B.co.za)

Tel: 033 343 1130 or 0860 836337 (0860 TENDER)

Fax: 033 343 5882

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On 20/02/2016 09:06, Lynsey Rimbault wrote:

Hi Melanie,

I am responding to your telephonic query regarding the status of the Helena Solar PV projects near Copperton.

The Draft Environmental Impact Assessment Reports (DEIARs) were available for review from Wednesday 9 December 2015 to Wednesday 27 January 2016. Following discussion with the SKA during the comment period the project has been placed temporarily on hold.

When the project does continue, public meetings will be held as usual and the FEIARs will be submitted to the DEA. I will ensure that you are on the project database and are notified about any project developments.

Kind Regards
Lynsey

Lynsey Rimbault (B.Sc.(Hons) Geography; M.Sc. Biodiversity, Conservation and Management)
Environmental Consultant
SiVEST Environmental



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9558
email lynseyr@sivest.co.za website www.sivest.co.za

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Durban - Johannesburg - Pietermaritzburg - Richards Bay - Ladysmith - Cape Town - Harare (Zimbabwe)

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Andrea Gibb

From: Andrea Gibb
Sent: Friday, August 05, 2016 9:01 AM
To: MelanieM@L2B.co.za
Subject: RE: 13031 Helena PV Project Update

Hi Melanie

I can confirm that the Helena PV Projects are still on hold. The applicant is currently busy undertaking additional emission control studies which will likely be complete in October this year. The FEIARs will thereafter be updated and made available for review before submission to the DEA.

Kind Regards

Andrea Gibb (B.Sc. Landscape Architecture; B.Sc.(Hons) Environmental Management)
Environmental Practitioner and Visual Specialist
SIVEST Environmental Division



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Durban - Johannesburg - Pietermaritzburg - Richards Bay - Ladysmith - Cape Town - Harare (Zimbabwe)

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I look forward to your response

Kindest Regards,

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Kind Regards
Lynsey

Lynsey Rimbault *(B.Sc.(Hons) Geography; M.Sc. Biodiversity, Conservation and Management)*
Environmental Consultant
SiVEST Environmental



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Lynsey Rimbault

From: Lynsey Rimbault
Sent: 20 February 2016 09:06
To: 'Melaniem@l2b.co.za'
Cc: Rebecca Thomas
Subject: 13031 Helena PV Project Update

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Kind Regards
Lynsey

Lynsey Rimbault *(B.Sc.(Hons) Geography; M.Sc. Biodiversity, Conservation and Management)*
Environmental Consultant
SiVEST Environmental



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Andrea Gibb

From: Nicolene Venter <nicolenev@zitholele.co.za>
Sent: Tuesday, August 04, 2015 6:19 AM
To: Gerrie Rudolph
Cc: Andrea Gibb; Lynsey Rimbault
Subject: Helena 1, 2 & 3: Final Scoping Report on CD

More Gerrie,

Die verslag, op CD, is gestuur. Jy kan op die Poskantoor se webwerf trek waar die pakkie is – die “tracking number” is RD 600 059 254 ZA.

Kind Regards,

Nicolene Venter [Cert. Public Relations]

Senior Public Participation Practitioner

Building 1, Maxwell Office Park, Magwa Crescent West, cnr Allandale Road & Maxwell Drive, Waterfall City, Midrand, RSA

T: +27 11 207 2060 **D:** +27 11 207 2077 **F:** +27 86 676 9950 **C:** +27 83 377 9112

E: nicolenev@zitholele.co.za **W:** www.zitholele.co.za



Please consider the environment before printing this e-mail!



PORTION 3 OF THE FARM KLIPGATS PAN 117
PO Box 528
PRIESKA
8940

Your reference:

Our reference: 13031

Date: 29 May 2015

ATTENTION: GERRRIE RUDOLPH

Via Post

Dear Gerrie Rudolph

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE 75MW HELENA SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

DEA REFERENCE NO.:

- **HELENA SOLAR 1: 14/12/16/3/3/2/765**
- **HELENA SOLAR 2: 14/12/16/3/3/2/766**
- **HELENA SOLAR 3: 14/12/16/3/3/2/767**

You indicated at the Landowner meeting held on the 22nd of May 2015 that you would like to receive a copy of the Draft Scoping Reports (DSRs) on CD. Please see enclosed a DVD containing all three DSRs, including all appendices.

Yours sincerely

A handwritten signature in black ink, appearing to read "Andrea Gibb".

Andrea Gibb
Environmental Practitioner
SIVEST Environmental Division

Attached: 1 X Electronic copy (on CD) of the DSRs for the three Helena projects, including appendices

Lynsey Rimbault

From: Lynsey Rimbault
Sent: 26 March 2015 11:17 AM
To: 'george.karsten@arm.co.za'
Cc: Andrea Gibb; 'Nicolene Venter'
Subject: Proposed Solar Facility on Klipgatspan No 117 Portion 3 and 4
Attachments: 13031 BID (AFR) FEB 2015.pdf; 13031 BID (ENG) FEB 2015.pdf; A3_13031_SiteLocality.pdf

Dear Mr George Karsten,

To refer to your telephone call with my colleague Nicolene Venter, please see attached the Background Information Document and cadastral map for the proposed solar facility on Klipgatspan No 117 Portion 3 and 4.

Please do not hesitate to contact us with any questions.

Kind Regards

Lynsey Rimbault *(B.Sc.(Hons) Geography; M.Sc. Biodiversity, Conservation and Management)*
Environmental Consultant
SiVEST Environmental



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Appendix 5E: Comments and Response Report



Appendix 5F: I&AP Database



**Appendix 5G:
Meeting Minutes**



**ENVIRONMENTAL IMPACT
ASSESSMENT (EIA) AND
ENVIRONMENTAL MANAGEMENT
PROGRAMME (EMPr) FOR THE
PROPOSED DEVELOPMENT OF
THREE 75MW SOLAR PHOTOVOLTAIC
(PV) ENERGY FACILITIES NEAR
COPPERTON, NORTHERN CAPE
PROVINCE**

**FINAL MINUTES OF THE
FOCUS GROUP MEETING**

Landowners

**Held on
Friday, 22 May 2015 at 09h00
letznietz Guest House, Copperton**

Northern Cape Province

SiVEST Environmental (Pty) Ltd

Contact: Andrea Gibb / Lynsey Rimbault

Address: PO Box 2921
51 Wessels Road
Rivonia 2128

Tel: 011 798 0600

Fax: 011 803 7272

E-mail: andreag@sivest.co.za
lynseyr@sivest.co.za

Final Minutes prepared by:

Lynsey Rimbault

TABLE OF CONTENTS

1	WELCOME, INTRODUCTIONS.....	1
2	MEETING ATTENDEES	1
3	PURPOSE OF THE MEETING	1
4	PROJECT CONTEXT AND OVERVIEW	1
5	DISCUSSION SESSION AND QUESTIONS.....	1
6	CLOSURE AND WAY FORWARD.....	2

FOCUS GROUP MEETING

Venue: Ietznietz Guest House, Copperton
Date: Friday, 22 May 2015
Time: 09h00 – 13h00

1 WELCOME, INTRODUCTIONS

Nicolene Venter welcomed everyone who attended the Focus Group Meeting (FGM). She introduced the representatives from SiVEST, Zitholele and BioTherm Energy at the meeting, noting that SiVEST is the independent Environmental Assessment Practitioner (EAP) undertaking the Environmental Impact Assessment (EIA) process.

2 MEETING ATTENDEES

The Focus Group Meeting (FGM) was attended by representatives from SiVEST, Zitholele, BioTherm Energy and a local landowner. Apologies were given for Mr. Danie Bernhard who was not able to attend the meeting. A copy of the Attendance Record is attached as Annexure A.

3 PURPOSE OF THE MEETING

Nicolene Venter informed the attendees that the purpose of the FGM was to:

- To provide an overview of the proposed project;
- Provide an opportunity to raise comments and/or concerns regarding the proposed project;
- To provide feedback on the environmental findings as in the Draft Scoping Report; and
- To record comments, issues and concerns raised.

4 PROJECT CONTEXT AND OVERVIEW

Lynsey Rimbault presented an overview of the proposed project explaining the background to the project, what the project would entail and the current status of the EIA process.

Refer to Annexure B for a copy of the presentation.

5 DISCUSSION SESSION AND QUESTIONS

Please refer to Annexure C for the discussion session.

6 CLOSURE AND WAY FORWARD

Nicolene Venter closed the meeting at approximately 10h00. She informed the attendees that the FGM minutes, presentation, and attendance record would be forwarded to everyone who attended the meeting and to those who submitted apologies.

Annexure A

ATTENDANCE RECORD

Landowner Focus Group Meeting Attendance Register

Mr/Ms	Last Name	First Name	Position	Company
Ms	Mistry	Chetna	Analyst	BioTherm Energy
Mr	Rudolph	Gerrie	Landowner	Landowner
Ms	Richardson	Irene	Environmental Manager	BioTherm Energy
Mr	Isaacs	Jermaine	Construction Manager	BioTherm Energy
Ms	Rimbault	Lynsey	Environmental Consultant	SIVEST
Ms	Venter	Nicolene	Public Participation Practitioner	Zitholele

Annexure B

COPY OF PRESENTATION

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION OF THE THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE: DRAFT SCOPING REPORT

DEA Reference Number:
 HELENA SOLAR 1: 14/12/16/13/3/2/165
 HELENA SOLAR 2: 14/12/16/13/3/2/166
 HELENA SOLAR 3: 14/12/16/13/3/2/167

A PROFESSIONAL TEAM DELIVERING CREATIVE PROJECT SOLUTIONS



Consulting Engineers • Project Managers • Environmental Consultants • Town and Regional Planners

LANDOWNER PUBLIC MEETING

PRESENTATION DATE: 22 May 2015

1


AGENDA



- Welcome, introduction and apologies
- Purpose and conduct of meeting
- Background to the proposed development
- Environmental process followed and desktop findings
- BioTherm Economic Development Strategy
- Discussion session
- Closure

2


PURPOSE OF MEETING



- To provide an overview of the proposed project
- To provide feedback on the desktop findings as documented in the DSR
- Provide an opportunity to raise comments and/or concerns regarding the proposed project
- To record comments, issues and concerns raised


3

PROJECT OVERVIEW




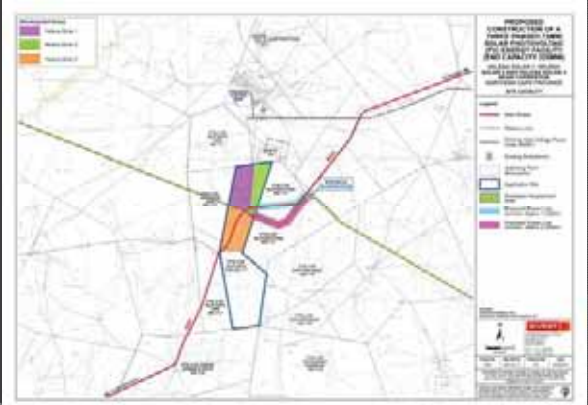
4

PROJECT OVERVIEW



- What does the proposed development entail?
 - Construction of three PV energy facilities, each with a maximum generation capacity of 75MW
 - Construction of associated infrastructure
 - New power lines from the PV energy facilities to the Eskom grid
 - New substations
 - Access road upgrades
 - Construction laydown areas
 - Admin and warehouse buildings
- Why is the project being proposed?
 - To generate electricity to feed into the national grid
 - Promote use of renewable energy
 - To help meet future energy consumption requirements

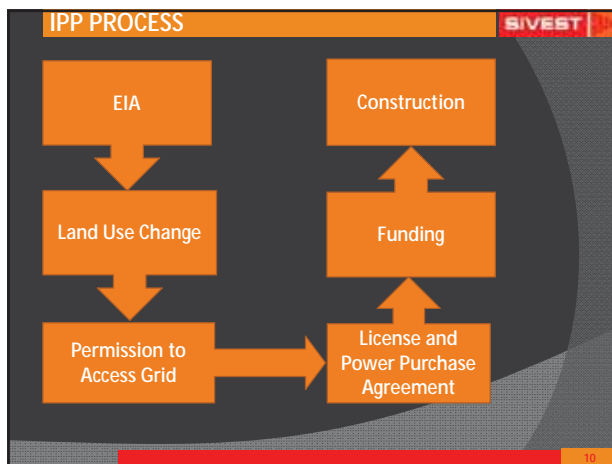
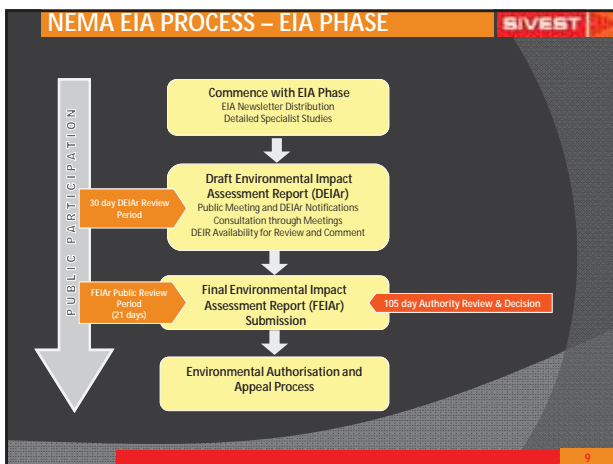
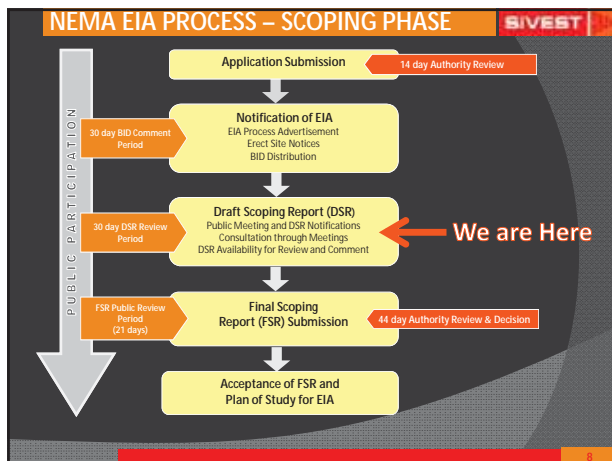
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6

PROJECT OVERVIEW

- Who is the independent EAP?
 - SiVEST SA
- Why undertake an EIA?
 - Legal requirement
 - Consider environmental impacts and mitigation measures
 - Provide stakeholders/I&APs the opportunity to participate
- Who is the applicant?
 - BioTherm Energy
- Who is the decision-making authority?
 - Department of Environmental Affairs (DEA)



DESKTOP ENVIRONMENTAL FINDINGS


DESKTOP FINDINGS

- Scoping phase underway
 - Issues based, desk-top investigation
 - Identify potential issues for further investigated in the EIA phase
- Environmental aspects being assessed
 - Biodiversity (flora and fauna)
 - Avifauna
 - Surface Water
 - Soil and Agricultural Potential
 - Visual
 - Heritage
 - Socio-economic

DESKTOP FINDINGS **BIVEST**

Biodiversity Assessment

- The project is unlikely to have highly significant impacts on the ecological receiving environment.
- Impacts that will occur can be controlled and reduced to low significance.
- The seriousness of many of these impacts can be determined during the field investigation of the site. Some impacts may require permits to be issued.




13

DESKTOP FINDINGS **BIVEST**

Avifaunal Assessment

- With over a quarter of all southern African endemics or near endemics potentially occur in the study area, the study area as a whole should be regarded as moderately sensitive from an avifaunal perspective.
- Potential high sensitive, no-go areas were identified, i.e. surface water (water troughs and dams) and high voltage lines, as both these micro-habitats are potential focal points of bird activity.
 - Water troughs may be removed and therefore declassified
 - High voltage lines included as a precaution – buffers will be removed if there are no nests present




14

DESKTOP FINDINGS **BIVEST**

Surface Water Assessment

- Database findings revealed that two natural depression wetlands, and two non-perennial rivers are located within the study area.
- Desktop findings reveal:
 - Four depression wetlands; and
 - Two unnamed, non-perennial rivers.



15

DESKTOP FINDINGS **BIVEST**

Soils and Agricultural Assessment


- Virtually all of the study area comprises shallow, calcareous soils with rock.
- Coupled with these shallow soils, the very low rainfall in the area means that the only means of cultivation would be by irrigation and the Google Earth image of the area shows absolutely no signs of any agricultural infrastructure and certainly none of irrigation.
- The climatic restrictions mean that this part of the Northern Cape is suited at best for grazing and here the grazing capacity is low, around 20 ha/large stock unit.
- Therefore the expected impact is low, as soils are shallow and climate is very unfavourable for cultivation.

16

DESKTOP FINDINGS **BIVEST**

Visual Impact Assessment

- The study area has a rural visual character with a low visual sensitivity.
- However, several solar energy facilities are proposed within relatively close proximity to the proposed PV plant, which will alter the visual character.
- The proposed PV plant development is likely to visually influence four farmsteads identified within the visual assessment zone, therefore these are regarded to be potentially sensitive visual receptor locations.
- The sensitivity of the receptor locations will need to be confirmed through further assessment in the next phase of the study.




17

DESKTOP FINDINGS **BIVEST**

Heritage Assessment

- The possibility of archaeological finds have been identified as being high.
- The palaeontological potential of the area has been confirmed as being low.
- As seen from the archival in the heritage scoping report, the possibility of historical finds has been identified.
- Thus further fieldwork is required to develop a comprehensive Heritage Management Plan.



18

DESKTOP FINDINGS BIVEST

- **Socio-economic Assessment**
 - The national, provincial, and to some extent local government prioritise the development of renewable energy projects.
 - However, these developments should not jeopardise the growth of the other sectors, especially agriculture which is considered to be an economic driver in the local area.
 - The economy is in dire need for investment that would:
 - Diversify its economic base
 - Improve standards of living among local households through the increased income levels and access to improved municipal services
 - The proposed project is therefore likely to create a positive impact on the local economic development and the socio-economic environment in the municipality in general.

19

EIA PHASE STUDIES BIVEST

- Detailed studies to be undertaken in the EIA phase:
 - Biodiversity (flora and fauna)
 - Avifauna
 - Surface Water
 - Soil and Agricultural Potential
 - Visual
 - Heritage
 - Socio-economic

20

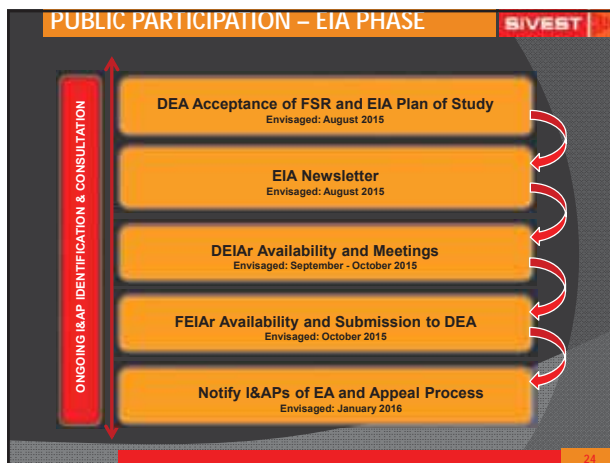
EIA PHASE STUDIES BIVEST

- **Issues to be addressed**
 - Undertake detailed fieldwork
 - Verify desktop findings
 - Rate the significance of impacts
 - Comparatively assess on site alternatives
 - Determine mitigation measures
 - Compile Environmental Management Programme

21

PUBLIC PARTICIPATION

22





Economic Development



Private and Confidential

Economic Development 7/7/2015




26 Our Mission


- To drive sustainable change through the achievement of the following objectives:
 - Creation of meaningful and permanent employment;
 - Development of a robust renewable energy industry that supports local products and services and promotes sustainable growth;
 - Socio-economic development initiatives; and
 - Enterprise development initiatives

"What counts in life is not the mere fact that we have lived. It is what difference we have made to the lives of others that will determine the significance of the life we lead."
Nelson Rolihlahla Mandela

Economic Development 7/7/2015



27 Economic Development Pillars supported



- The initiatives we support focus on the following societal foundations:
 - Education
 - Healthcare
 - Sustainable Rural Development
 - Economic Empowerment of Women


Economic Development 7/7/2015



28 Implementation Strategy

- The steps taken, when formulating an ED strategy, consist of:
 - Analysis of existing local economic and social environment, including the regulatory and cultural elements
 - Needs assessment through engagement with relevant stakeholders such as:
 - Local and/ or national government
 - Communities directly impacted by project sites
 - Identification of crucial/ fundamental economic issues
 - Defining desired quantitative and qualitative outcomes, based on analysis and engagement
 - Identification of potential barriers and resources that may affect implementation
 - Quantification of resources required for implementation

Economic Development 7/7/2015



29 Implementation Strategy (Cont'd)

- Development of an action plan, including elements such as:
 - Work Task
 - Budget Required
 - Funding Source
 - Responsible Party
 - Completion Date
 - Progress Measurement Tool
- Monitoring, evaluation and update of strategy, if and when necessary



Economic Development 7/7/2015



30 Track Record

- Examples of initiatives implemented in South Africa include:
 - The upgrade of teaching equipment at a primary school in the Northern Cape, South Africa;
 - The provision of critical medical equipment to the local clinics and hospitals within various communities of the Northern Cape and Western Cape, South Africa;
 - The electrification of an Early Childhood Development (ECD) Centre in the Northern Cape, South Africa;
 - Infrastructural upgrades at an old age home in the Western Cape, South Africa, thus allowing them to qualify for better grant funding and accreditation;
 - Sponsorship of a "woman abuse awareness campaign" run by the South African Police Services in the Northern Cape, South Africa;

Economic Development 7/7/2015

31 Track Record (Cont'd)



- Supply of infantile mattresses to an ECD Centre in the Western Cape, South Africa;
- Provision of daily consumables to a disadvantage teenager diagnosed with Spina Bifida in the Western Cape, South Africa; and
- Sponsorship of a primary and high school principal to attend the Principal's Academy within the Western Cape, South Africa



Economic Development 3/7/2015

SIVEST

DISCUSSION

32

CONTACT DETAILS




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 Rivonia
 2128

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WAY FORWARD



	2015							2016
	June	July	Aug	Sep	Oct	Nov	Dec	Jan
End of DSR comment period	☀							
Submission of FSR to DEA		☀						
DEA decision on FSR			☀					
Distribution of EIA Newsletter			☀					
DEIAr Comment period				☀	☀			
Hold Meetings (FGM and PM)				☀				
Submission of FEIAr to DEA					☀			
DEA Decision								☀

34

Annexure C

DISCUSSION DOCUMENT

**ENVIRONMENTAL IMPACT ASSESSMENT (EIA) AND ENVIRONMENTAL
MANAGEMENT PROGRAMME (EMPr) FOR THE PROPOSED DEVELOPMENT OF
THREE 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR
COPPERTON, NORTHERN CAPE PROVINCE**

HELENA SOLAR 1: DEA Ref No: 14/12/16/3/3/2/765

HELENA SOLAR 2: DEA Ref No: 14/12/16/3/3/2/766

HELENA SOLAR 3: DEA Ref No: 14/12/16/3/3/2/767

**FINAL DISCUSSION DOCUMENT
FOCUS GROUP MEETING: Landowners**

letznietz Guest House, Copperton

Friday, 22 May 2015 at 09h00

TABLE OF CONTENTS

1.	Agricultural Potential Related Comments/Issues	1
2.	Biodiversity Related Comments/Issues	1
3.	Socio-Economic Related Comments/Issues	1
4.	Water Related Comments/Issues.....	2
5.	EIA Process Related Comments/Issues.....	2
6.	Project Related Comments/Issues	3
7.	Communication Related Comments/Issues	3
8.	General Comments/Issues	3

Comments / concerns / issues have been categorised according to environmental impact and thereafter according to SURNAME.

The comments / concerns / issues captured are not verbatim, but a summary.

ABBREVIATIONS:

DEA	Department of Environmental Affairs	DoE	Department of Energy
DWS	Department of Water and Sanitation	EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner	EMPr	Environmental Management Programme
PP	Public Participation	REIPPPP	Renewable Energy Independent Power Producer Procurement Programme
SKA	Square Kilometre Array		

Issue/Comment	Raised By & When	Response
1. Agricultural Potential Related Comments/Issues		
It was enquired as to what the main agricultural activity on the proposed site is.	VENTER, Nicolene PP Practitioner Zitholele Consulting	It is mainly sheep farming and the land is utilised for grazing. Gerrie Rudolph, Landowner: Farm Klipgats Pan
2. Biodiversity Related Comments/Issues		
<p>The project team was informed that once the natural habitat i.e. Karoo Bush (Karoo Bossie) is removed, it is not able to re-establish itself before grass takes over.</p> <p>It was asked whether vegetation will be cleared for the access road and recommended that the minimum amount of clearing is done.</p> <p>Biodiversity is a great concern.</p>	RUDOLPH, Gerrie Landowner Farm: Klipgatspan	<p>Vegetation will be cleared only for the panel footprints and the access road.</p> <p>Jermaine Isaacs, Construction Manager, BioTherm Energy</p> <p>The concern regarding possible negative impact on the biodiversity on the site will be forwarded to the biodiversity specialists to address in the impact phase.</p> <p>Nicolene Venter, PP Practitioner, Zitholele Consulting</p>
3. Socio-Economic Related Comments/Issues		
It was enquired, for clarification purposes, whether there are any asbestos deposits on the site that the landowner is aware of.	ISAACS, Jermaine Construction Manager BioTherm Energy	To his knowledge there is no asbestos deposits on his property and copper was the main mineral mined in the area. Gerrie Rudolph, Landowner: Klipgatspan
It was enquired as to how many seasonal workers are there on the farm.		Due to the nature of the farming activity, very few. Gerrie Rudolph, Landowner: Klipgatspan
Mr Rudolph asked what the financial investment of this proposed project would be, i.e. how much will it cost to be constructed.	RUDOLPH, Gerrie Landowner Farm: Klipgatspan	<p>The exact figures are not available at this stage and will only be determined later in the process.</p> <p>Irene Bezuidenhout, Environmental Manager, BioTherm Energy</p> <p>Post-meeting note: A typical 75MW PV Facility would cost approximately R1.5 billion.</p> <p>Irene Bezuidenhout, Environmental Manager, BioTherm Energy</p>

<p>It was enquired as to how many construction workers will be appointed during the construction and maintenance phases of the proposed project.</p>	<p>RUDOLPH, Gerrie Landowner Farm: Klipgatspan</p>	<p>These numbers are not yet available and will only be determined later in the process. More people will be employed during construction than operation. <i>Irene Bezuidenhout, Environmental Manager, BioTherm Energy</i></p> <p><u>Post-meeting note:</u> It is estimated that there will be approximately 129 skilled and unskilled employees during construction and 43 skilled and unskilled employees during operation. <i>Irene Bezuidenhout, Environmental Manager, BioTherm Energy</i></p>
<p>4. Water Related Comments/Issues</p>		
<p>The project team was informed that the water in the area is very brackish and this could impact the efficiency of the panels.</p>	<p>RUDOLPH, Gerrie Landowner Farm: Klipgatspan</p>	<p>The high lime content in the water is a concern to BioTherm and before any cleaning method is decided upon, the water will be tested to assess the quality. Additionally, BioTherm is investigating dry cleaning methods. <i>Jermaine Isaacs, Construction Manager, BioTherm Energy</i></p>
<p>It would be a preference if water could be trucked in from Prieska.</p>		<p>Preference has been acknowledged and will be put forward to the team for consideration. <i>Irene Bezuidenhout, Environmental Manager, BioTherm Energy</i></p>
<p>It was asked whether herbicide will be used especially around the fences and the footprint of the panels.</p>		<p>Environmental specialists are often not in favour of using herbicides in preference to manual clearing. However BioTherm would consider herbicide if not prohibited in the EMPr as manual clearing has some drawbacks. <i>Irene Bezuidenhout, Environmental Manager, BioTherm Energy</i></p>
<p>5. EIA Process Related Comments/Issues</p>		
<p>It was asked whether SiVEST deals with a specific person at the Department of Environmental Affairs (DEA) regarding this proposed project.</p>	<p>RUDOLPH, Gerrie Landowner Farm: Klipgatspan</p>	<p>There are a group of DEA Case Officers that are dealing with renewable energy applications. <i>Lynsey Rimbault, Environmental Scientist, SiVEST</i></p>

		<p>Post-meeting note: Ms Mmatlala Rabothata has been appointed as the case officer for this proposed project. Lynsey Rimbault, Environmental Scientist, SiVEST</p>
6. Project Related Comments/Issues		
It was enquired whether the system to be used will be a fixed or tracking type.	RUDOLPH, Gerrie Landowner Farm: Klipgatspan	At this stage both technical options are being applied for. Irene Bezuidenhout, Environmental Manager, BioTherm Energy
It was asked how the panels will be cleaned i.e. manual pressure sprayer or a fixed sprayer on the panels.		Currently BioTherm is looking at a dry-cleaning method. Jermaine Isaacs, Construction Manager, BioTherm Energy
It was asked whether all three of the proposed projects will be constructed simultaneously.		If they have received Environmental Authorisations (EA) all three projects will be submitted to the Department of Energy (DoE) in the next Bidding round of the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), and the construction of the plants will depend on which projects are successful in the bidding process. Irene Bezuidenhout, Environmental Manager, BioTherm Energy
It was asked whether the Square Kilometre Array (SKA) had submitted their approval for this proposed project.		The SKA was provided with the Scoping Report and given an opportunity to comment on the project. It is likely that they will request specific studies to be done during the EIA phase to determine potential impacts of the project on the SKA. Irene Bezuidenhout, Environmental Manager, BioTherm Energy
7. Communication Related Comments/Issues		
It was requested that the Draft Scoping Report, including the surface water map, be provided on a CD due to slow internet connection on the farm.	RUDOLPH, Gerrie Landowner Farm:Klipgatspan	The request was acknowledged and SiVEST posted the CD on the 29 th of May 2015. Lynsey Rimbault, Environmental Scientist, SiVEST
8. General Comments/Issues		

<p>Dissatisfaction was expressed regarding the current solar development taking place in the area as no dust suppression is being done for the water trucks (minimum of two trucks daily) supplying water to the construction site.</p> <p>It was also enquired as to who can be contacted to report the matter and also to enquire whether the project applied for and received a Water Use License.</p>	<p>RUDOLPH, Gerrie Landowner Farm:Klipgatspan</p>	<p>Water must be obtained from a legal source and the quantity envisaged to be used must be recorded.</p> <p><i>Irene Bezuidenhout, Environmental Manager, BioTherm Energy</i></p> <p>The contact details of the Green Scorpions, for compliance with the EA, and that of the Department of Water and Sanitation (DWS) for the Water Use License enquiry, will be forwarded.</p> <p><i>Nicolene Venter, PP Practitioner, Zitholele Consulting</i></p> <p><u>Post-meeting note:</u> The requested details were e-mailed on 27 May 2015</p>
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**ENVIRONMENTAL IMPACT
ASSESSMENT (EIA) AND
ENVIRONMENTAL MANAGEMENT
PROGRAMME (EMPr) FOR THE
PROPOSED DEVELOPMENT OF THREE
75MW SOLAR PHOTOVOLTAIC (PV)
ENERGY FACILITIES NEAR
COPPERTON, NORTHERN CAPE
PROVINCE**

**FINAL MINUTES OF THE
FOCUS GROUP MEETING**

Municipal Officials

Held on
Thursday, 21 May 2015 at 12h00
SiyaThemba Local Municipality's Chambers, Victoria
Street, Prieska

Northern Cape Province

SiVEST Environmental (Pty) Ltd

Contact: Andrea Gibb / Lynsey Rimbault

Address: PO Box 2921
51 Wessels Road
Rivonia 2128

Tel: 011 798 0600

Fax: 011 803 7272

E-mail: andreag@sivest.co.za
lynseyr@sivest.co.za

Final Minutes prepared by:
Lynsey Rimbault

TABLE OF CONTENTS

1	WELCOME, INTRODUCTIONS.....	1
2	MEETING ATTENDEES	1
3	PURPOSE OF THE MEETING	1
4	PROJECT CONTEXT AND OVERVIEW	1
5	DISCUSSION SESSION AND QUESTIONS.....	1
6	CLOSURE AND WAY FORWARD.....	2

FOCUS GROUP MEETING

Venue: SiyaThemba Local Municipality's Chambers, Victoria Street, Prieska

Date: Thursday, 21 May 2015

Time: 12h00 – 13h00

1 WELCOME, INTRODUCTIONS

Nicolene Venter welcomed everyone who attended the Focus Group Meeting (FGM). She introduced the representatives from SiVEST, Zitholele and BioTherm Energy at the meeting, noting that SiVEST is the independent Environmental Assessment Practitioner (EAP) undertaking the Environmental Impact Assessment (EIA) process.

2 MEETING ATTENDEES

The Focus Group Meeting (FGM) was attended by representatives from SiVEST, Zitholele, BioTherm Energy and local business and municipal representatives. Apologies were given for the Municipal LED Manager, Mr. Jakob Basson, and the Assistant to the Municipal Manager, Ms. Beatrice Mondzinger. A copy of the Attendance Record is attached as Annexure A.

3 PURPOSE OF THE MEETING

Nicolene Venter informed the attendees that the purpose of the FGM was to:

- To provide an overview of the proposed project;
- Provide an opportunity to raise comments and/or concerns regarding the proposed project;
- To provide feedback on the environmental findings as in the Draft Scoping Report; and
- To record comments, issues and concerns raised.

4 PROJECT CONTEXT AND OVERVIEW

Lynsey Rimbault presented an overview of the proposed project explaining the background to the project, what the project would entail and the current status of the EIA process. Refer to Annexure B for further information.

Refer to Annexure B for a copy of the presentation.

5 DISCUSSION SESSION AND QUESTIONS

Please refer to Annexure C for further the discussion session.

6 CLOSURE AND WAY FORWARD

Nicolene Venter closed the meeting at approximately 13h00. She informed the attendees that the FGM minutes, presentation, and attendance record would be forwarded to everyone who attended the meeting and to those who submitted apologies.

Annexure A

ATTENDANCE RECORD

Municipality Focus Group Meeting Attendance Register

Mr/Ms	Last Name	First Name	Position	Company
Mr	Barnard	Zak	Managing Director	Electrotech Prieska
Mr	Isaacs	Jermaine	Construction Manager	BioTherm Energy
Ms	Mdllovama	Sivemah	I. Officer	Deptment of Home Affairs
Ms	Mistry	Chetna	Analyst	BioTherm Energy
Mr	Nel	AG	MD/CEO	Servigraphs2 CC t/a Lnack Trading
Ms	Richardson	Irene	Environmental Manager	BioTherm Energy
Ms	Rimbault	Lynsey	Environmental Consultant	SiVEST
Ms	Venter	Nicolene	Public Participation Practitioner	Zitholele

Annexure B

COPY OF PRESENTATION

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION OF THE THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE: DRAFT SCOPING REPORT

DEA Reference Number:
 HELENA SOLAR 1: 14/12/16/13/3/2/165
 HELENA SOLAR 2: 14/12/16/13/3/2/166
 HELENA SOLAR 3: 14/12/16/13/3/2/167

A PROFESSIONAL TEAM DELIVERING CREATIVE PROJECT SOLUTIONS

SIVEST

Consulting Engineers • Project Managers • Environmental Consultants • Town and Regional Planners

MUNICIPALITY PUBLIC MEETING

PRESENTATION DATE: 21 May 2015

1

AGENDA

- Welcome, introduction and apologies
- Purpose and conduct of meeting
- Background to the proposed development
- Environmental process followed and desktop findings
- BioTherm Economic Development Strategy
- Discussion session
- Closure

2

PURPOSE OF MEETING

- To provide an overview of the proposed project
- To provide feedback on the desktop findings as documented in the DSR
- Provide an opportunity to raise comments and/or concerns regarding the proposed project
- To record comments, issues and concerns raised

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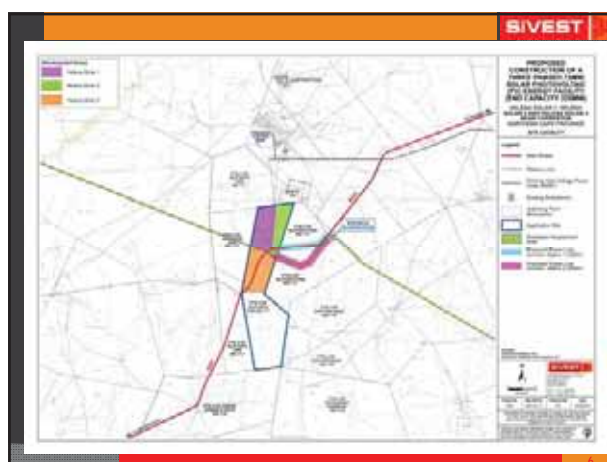
PROJECT OVERVIEW

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PROJECT OVERVIEW

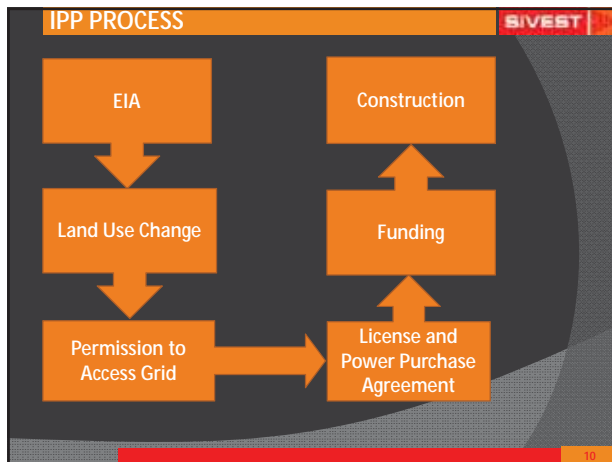
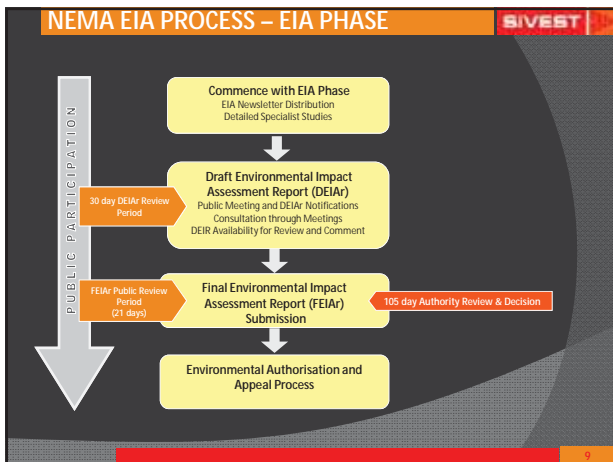
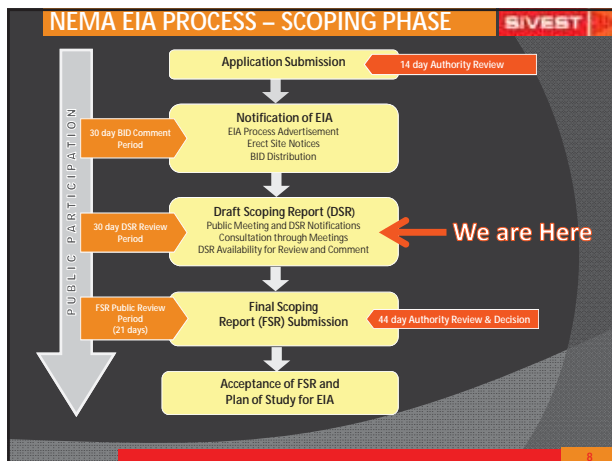
- What does the proposed development entail?
 - Construction of three PV energy facilities, each with a maximum generation capacity of 75MW
 - Construction of associated infrastructure
 - New power lines from the PV energy facilities to the Eskom grid
 - New substations
 - Access road upgrades
 - Construction laydown areas
 - Admin and warehouse buildings
- Why is the project being proposed?
 - To generate electricity to feed into the national grid
 - Promote use of renewable energy
 - To help meet future energy consumption requirements

5



PROJECT OVERVIEW

- Who is the independent EAP?
 - SiVEST SA
- Why undertake an EIA?
 - Legal requirement
 - Consider environmental impacts and mitigation measures
 - Provide stakeholders/I&APs the opportunity to participate
- Who is the applicant?
 - BioTherm Energy
- Who is the decision-making authority?
 - Department of Environmental Affairs (DEA)



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- The project is unlikely to have highly significant impacts on the ecological receiving environment.
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- With over a quarter of all southern African endemics or near endemics potentially occur in the study area, the study area as a whole should be regarded as moderately sensitive from an avifaunal perspective.
- Potential high sensitive, no-go areas were identified, i.e. surface water (water troughs and dams) and high voltage lines, as both these micro-habitats are potential focal points of bird activity.
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- Database findings revealed that two natural depression wetlands, and two non-perennial rivers are located within the study area.
- Desktop findings reveal:
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- Virtually all of the study area comprises shallow, calcareous soils with rock.
- Coupled with these shallow soils, the very low rainfall in the area means that the only means of cultivation would be by irrigation and the Google Earth image of the area shows absolutely no signs of any agricultural infrastructure and certainly none of irrigation.
- The climatic restrictions mean that this part of the Northern Cape is suited at best for grazing and here the grazing capacity is low, around 20 ha/large stock unit.
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- The study area has a rural visual character with a low visual sensitivity.
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- The sensitivity of the receptor locations will need to be confirmed through further assessment in the next phase of the study.




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- The possibility of archaeological finds have been identified as being high.
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- As seen from the archival in the heritage scoping report, the possibility of historical finds has been identified.
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- **Socio-economic Assessment**
 - The national, provincial, and to some extent local government prioritise the development of renewable energy projects.
 - However, these developments should not jeopardise the growth of the other sectors, especially agriculture which is considered to be an economic driver in the local area.
 - The economy is in dire need for investment that would:
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 - Improve standards of living among local households through the increased income levels and access to improved municipal services
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EIA PHASE STUDIES BIVEST

- Detailed studies to be undertaken in the EIA phase:
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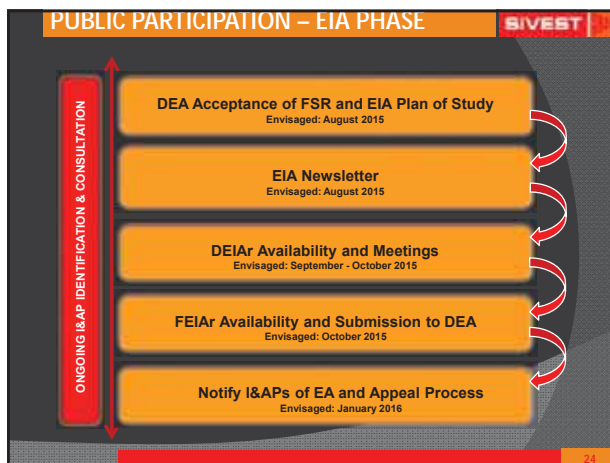
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 - Compile Environmental Management Programme

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PUBLIC PARTICIPATION

22





Economic Development



Private and Confidential

Economic Development 7/7/2015




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 - Socio-economic development initiatives; and
 - Enterprise development initiatives

"What counts in life is not the mere fact that we have lived. It is what difference we have made to the lives of others that will determine the significance of the life we lead."
Nelson Rolihlahla Mandela

Economic Development 7/7/2015




27 Economic Development Pillars supported



- The initiatives we support focus on the following societal foundations:
 - Education
 - Healthcare
 - Sustainable Rural Development
 - Economic Empowerment of Women


Economic Development 7/7/2015



28 Implementation Strategy


- The steps taken, when formulating an ED strategy, consist of:
 - Analysis of existing local economic and social environment, including the regulatory and cultural elements
 - Needs assessment through engagement with relevant stakeholders such as:
 - Local and/ or national government
 - Communities directly impacted by project sites
 - Identification of crucial/ fundamental economic issues
 - Defining desired quantitative and qualitative outcomes, based on analysis and engagement
 - Identification of potential barriers and resources that may affect implementation
 - Quantification of resources required for implementation

Economic Development 7/7/2015



29 Implementation Strategy (Cont'd)

- Development of an action plan, including elements such as:
 - Work Task
 - Budget Required
 - Funding Source
 - Responsible Party
 - Completion Date
 - Progress Measurement Tool
- Monitoring, evaluation and update of strategy, if and when necessary



Economic Development 7/7/2015



30 Track Record

- Examples of initiatives implemented in South Africa include:
 - The upgrade of teaching equipment at a primary school in the Northern Cape, South Africa;
 - The provision of critical medical equipment to the local clinics and hospitals within various communities of the Northern Cape and Western Cape, South Africa;
 - The electrification of an Early Childhood Development (ECD) Centre in the Northern Cape, South Africa;
 - Infrastructural upgrades at an old age home in the Western Cape, South Africa, thus allowing them to qualify for better grant funding and accreditation;
 - Sponsorship of a "woman abuse awareness campaign" run by the South African Police Services in the Northern Cape, South Africa;

Economic Development 7/7/2015

31 Track Record (Cont'd)



- Supply of infantile mattresses to an ECD Centre in the Western Cape, South Africa;
- Provision of daily consumables to a disadvantage teenager diagnosed with Spina Bifida in the Western Cape, South Africa; and
- Sponsorship of a primary and high school principal to attend the Principal's Academy within the Western Cape, South Africa



Economic Development 3/7/2015

SIVEST

DISCUSSION

32

CONTACT DETAILS

SIVEST

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33

WAY FORWARD

SIVEST

	2015							2016
	June	July	Aug	Sep	Oct	Nov	Dec	Jan
End of DSR comment period	☀							
Submission of FSR to DEA		☀						
DEA decision on FSR			☀					
Distribution of EIA Newsletter			☀					
DEIAr Comment period				☀	☀			
Hold Meetings (FGM and PM)				☀				
Submission of FEIAr to DEA					☀			
DEA Decision								☀

34

Annexure C

DISCUSSION DOCUMENT

**ENVIRONMENTAL IMPACT ASSESSMENT (EIA) AND ENVIRONMENTAL
MANAGEMENT PROGRAMME (EMPr) FOR THE PROPOSED DEVELOPMENT OF
THREE 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR
COPPERTON, NORTHERN CAPE PROVINCE**

HELENA SOLAR 1: DEA Ref No: 14/12/16/3/3/2/765

HELENA SOLAR 2: DEA Ref No: 14/12/16/3/3/2/766

HELENA SOLAR 3: DEA Ref No: 14/12/16/3/3/2/767

**FINAL DISCUSSION DOCUMENT
FOCUS GROUP MEETING: SiyaThemba Local Municipality**

SiyaThemba Local Municipality's Chambers, Victoria Street, Prieska

Thursday, 21 May 2015 at 12h00

TABLE OF CONTENTS

1.	Socio-Economic Related Comments/Issues	1
2.	EIA Process Related Comments/Issues.....	2
3.	Project Related Comments/Issues	2

Comments / concerns / issues have been categorised according to environmental impact and thereafter according to SURNAME.

The comments / concerns / issues captured are not verbatim, but a summary

ABBREVIATIONS:

CEO	Chief Executive Officer	EPC	Engineering, Procurement and Construction
SIA	Social Impact Assessment	MD	Managing Director
REIPPPP	Renewable Energy Independent Power Producer Procurement Programme		

Issue/Comment	Raised By	Response
1. Socio-Economic Related Comments/Issues		
<p>The team was informed that there are asbestos deposits around Prieska which have had detrimental impacts on the health of residents. Mr Nell enquired as to whether there is a possibility that there could be asbestos on the site that could be disturbed when construction starts, particularly when the wind is blowing.</p>	<p>NELL, Kevin MD & CEO: Servigraph 52 CC Member: Chamber of Commerce</p>	<p>The geotechnical studies still need to be conducted and these will determine whether asbestos is present or not. <i>Jermaine Isaacs, Construction Manager, BioTherm Energy</i></p> <p>The Socio-economic and Soils and Agricultural Potential Specialists will be informed of the potential for asbestos occurring in the Copperton area and if necessary will assess the potential impact of this in their reports. <i>Lynsey Rimbault, Environmental Consultant, SiVEST</i></p> <p><u>Post Meeting Note</u> The landowner of the proposed Helena projects has no knowledge of asbestos deposits on his property and he stated that copper was the main mineral mined in the Copperton area, not asbestos as was the case in Prieska. <i>Lynsey Rimbault, Environmental Consultant, SiVEST</i></p>
<p>Mr Nell requested that through the three Helena projects, BioTherm Energy assist the local service providers in fostering sustainable economic growth rather than a short term cash injection.</p>	<p>NELL, Kevin MD & CEO: Servigraph 52 CC Member: Chamber of Commerce</p>	<p>This comment will be put forward to BioTherm's Development Manager. <i>Irene Bezuidenhout, Environmental Manager, BioTherm Energy</i></p> <p><u>Post-meeting note:</u> The request has been noted by BioTherm's Development Manager. <i>Irene Bezuidenhout, Environmental Manager, BioTherm Energy</i></p>
<p>The project team was informed that Prieska has a 41% unemployment rate and the town would therefore appreciate any development that could alleviate this social constraint.</p>	<p>NELL, Kevin MD & CEO: Servigraph 52 CC Member: Chamber of Commerce</p>	<p>The SIA specialist identified this constraint and the impact will be addressed in detail during the impact phase. <i>Lynsey Rimbault, Environmental Consultant, SiVEST</i></p>

<p>It was enquired as to the requirements for the main contractor, because local businesses would consider forming a joint venture and tendering as the main contractor. They would also need to establish whether a group of local businesses can bid as an EPC.</p>	<p>BARNARD, Zak Managing Director: Electrotech Member: Chambers of Commerce</p>	<p>A document which will briefly outline the minimum requirements of contracting will be prepared and forwarded to the Chamber of Commerce. <i>Jermaine Isaacs, Construction Manager, BioTherm Energy</i></p>
<p>The project team was informed that with the number of renewable energy projects developed in the area the local business people (construction and other) have gained a lot of experience and believe that they are in a position to tender as main contractor and not as sub-contractors.</p> <p>It was stated that the local businesses and labour force available must not be down played as the knowledge and expertise base in Prieska is good.</p>	<p>BARNARD, Zak Managing Director: Electrotech Member: Chambers of Commerce</p>	<p>The information provided will be taken into consideration should the project receive environmental authorisation and the tender process commences. <i>Jermaine Isaacs, Construction Manager, BioTherm Energy</i></p>
<p>2. EIA Process Related Comments/Issues</p>		
<p>It was asked whether this EIA process has not been done before for other renewable energy projects in the area i.e. rehashing the same impacts and issues.</p>	<p>BARNARD, Zak Managing Director: Electrotech Member: Chambers of Commerce</p>	<p>Although cognisance is taken of other environmental studies done for other EIA projects in the same study area, this EIA, including the specialist studies, is site specific. <i>Lynsey Rimbault, Environmental Consultant, SiVEST</i></p> <p>It is important to note that specialist studies also assess, and where necessary address, cumulative impacts. <i>Nicolene Venter, PP Practitioner, Zitholele Consulting</i></p>
<p>3. Project Related Comments/Issues</p>		
<p>It was asked whether the three (3) projects would run concurrently.</p>	<p>BARNARD, Zak Managing Director: Electrotech Member: Chambers of Commerce</p>	<p>This has not been confirmed at this stage and would depend on various factors such whether all, two or one of the projects are selected as preferred bidders in the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP). <i>Irene Bezuidenhout, Environmental Manager, BioTherm Energy</i></p>
<p>Prieska's business community was at a disadvantage with previous developments in the area as they were not provided with sufficient time to prepare for the tendering process.</p>	<p>NELL, Kevin MD & CEO: Servigraph 52 CC</p>	<p>BioTherm confirmed that they will notify the Prieska Chamber of Commerce before the EPC tender request appears in the newspapers.</p>

It was requested that BioTherm notify them timeously when the EPC tender will be placed.	Member: Chamber of Commerce	<i>Irene Bezuidenhout, Environmental Manager, BioTherm Energy</i>
--	-----------------------------	--

SiVEST Environmental (Pty) Ltd

Name: Nicolene Venter / Andrea Gibb
Address: P.O. Box 2921
51 Wessel Street
Rivonia 2128
Tel: 011 798 0600
Fax: 011 803 7272
E-mail: andreag@sivest.co.za

Proposed Development of Three 75 MW Photovoltaic Solar Power Facilities near Copperton

**(Helena Solar 1 – DEA Ref. No.: 14/12/16/3/3/2/765;
Helena Solar 2 – DEA Ref. No.: 14/12/16/3/3/2/766;
Helena Solar 3 – DEA Ref. No.: 14/12/16/3/3/2/767)**

SUMMARY NOTES OF PROJECT INFORMATION SESSION

**held on
Tuesday 24 February 2015
Klipgats Pan, Copperton**

Compiled by Nicolene Venter

Please send any comments to Nicolene Venter at the address provided.

TABLE OF CONTENTS

1	OPENING AND WELCOMING	3
2	PRESENT AT THE MEETING	3
3	PURPOSE OF THE MEETING	3
4	PROJECT OVERVIEW	3
5	DISCUSSIONS	3
6	CLOSURE	5

1 OPENING AND WELCOMING

Nicolene Venter, Zitholele Consulting, thanked the landowners present for their attendance at the notice, information and comment session for the proposed development of three 75 MW Photovoltaic (PV) Solar Power Facilities on the farm Klipgats Pan near Copperton.

For minuting purposes, the participants were requested to introduce themselves when they ask questions or make comments.

The issue of language was addressed and it was decided that the meeting would take place in Afrikaans.

2 PRESENT AT THE MEETING

A copy of the attendance record is attached in Annexure A.

The following landowners tendered their apologies:

- Danie & Jomima Bernard, Klipgats Pan;
- Albertha Kellerman, Groot Fourie's Kolk;
- Almarette Nieuwoudt, Springbok Poortje;
- Coenie & Adelle Viljoen, Mierdam;
- Anton van Heerden, Kaffirs Kolk; and
- Pilla Buis, Klipgatspan.

3 PURPOSE OF THE MEETING

Nicolene Venter explained the purpose of the meeting to those present, which included:

- giving an overview of the proposed project;
- affording those present the opportunity to gain clarity about the proposed project and to raise issues that could be submitted to the environmental specialists for investigation; and
- recording comments, issues and concerns that were raised during the meeting.

4 PROJECT OVERVIEW

Nicolene Venter gave a short overview of the reasons why the proposed project is necessary.

BioTherm Energy (Pty) Ltd (hereinafter referred to as BioTherm) proposed the construction of a three phase photovoltaic (PV) solar power facility with a total export capacity of 225 MW, near Copperton in the Northern Cape Province. The proposed project will comprise three PV solar power facilities with an export capacity of 75 MW each to be called Helena Solar 1, 2 and 3.

5 DISCUSSIONS

5.1 Mr Frans Ekkerd, Uitspan Pan, informed those present that the water quality in the area is brackish. Mulilo is expected to start with construction of the PV facility on the farm Uitspan Pan on 1 March 2015.

The question was which water source was being considered for cleaning the solar panels.

Nicolene Venter said that it is expected that recycled water would be used. This fact will be confirmed by the project team.

- 5.2 Mr Ekkerd asked whether the dirt road would be tarred to prevent dust deposits on the solar panels, which would increase the need to clean the panels with associated increased water usage.

Post Meeting Note: The developer will be notified of the comment by Mr Ekkerd and the issue of tarred versus dirt roads will be addressed during the EIA phase of the project.

- 5.3 Mr Ekkerd referred to a water pipeline being planned by Bloemwater from Prieska to Van Wyksvlei to address the water shortage in the area. The residents are currently unaware of this water pipeline being planned.

Post Meeting Note: The developer will be notified of the proposed water pipeline.

- 5.4 Mr Ekkerd mentioned that there is word of the upgrading of the Kronos Substation and asked whether the project team was aware of this.

Post Meeting Note: The project team was not aware of any potential upgrades to the Kronos Substation. The grid connection requirements will be established through consultation between the developer and Eskom during the EIA phase of the project and thereafter when the detailed designs are undertaken.

- 5.5 Johannes Human, Hoekplaas Boerdery, raised the following:

- a) Was the development planned for only the northern portion of the farm and no development on the southern portion?
- b) How will the safety aspect of especially the residents of the area be addressed by the specialist, mainly during the construction phase?
- c) How would the possibility of stock theft be addressed by the specialist, especially during the construction phase?
- d) The request is made that the biodiversity specialist should not disturb fauna and flora during the site visit.
- e) It is requested that landowners be informed timeously of when the specialists would undertake their site visits.

Post Meeting Note: The development is intended to take place on the northern half of Portion 3 of Klipgats Pan No 117. Socio-economic issues will be addressed as part of the Environmental Management Programme (EMPr) in the EIA phase of the project. The biodiversity specialist will be informed of Mr Human's request and will endeavour to minimise disturbance to fauna and flora in the project area. Landowners will be notified in advance when specialists intend to conduct field studies.

- 5.6 Mr Ekkerd asked what precautions would be taken to prevent or reduce the impact of dust on the adjacent homes.

Post Meeting Note: The issue of dust will be addressed during the EIA phase of the project. Dust suppression methods will be employed during construction, and if necessary during operation in accordance with the EMPr.

5.7 Mr Gerrie Rudolph asked what precautionary measures would be taken to prevent or reduce the impact of dust on their home since the re-establishment of the vegetation could take between 10 to 20 years.

Post Meeting Note: The issue of dust will be addressed during the EIA phase of the project. Dust suppression methods will be employed during construction, and if necessary during operation in accordance with the EMPr. The issue of re-establishing vegetation will be addressed by the biodiversity specialist during the EIA phase.

6 CLOSURE

Nicolene Venter thanked everybody for their presence and the valuable inputs given during the information session. She informed those present that feedback on their questions and concerns would be included in the Comment and Response Report, which would be included in the Draft Basic Assessment Report.

The meeting adjourned at 11h30.

ANNEXURE A

ATTENDANCE RECORD

Environmental Impact Assessment (EIA) for the Proposed Development of Three 75MW Solar Photovoltaic (PV) Energy Facilities Near Copperton, Northern Cape Province.

(DEA Ref No: 14/12/16/3/2/765), (DEA Ref No: 14/12/16/3/2/766), (DEA Ref No: 14/12/16/3/2/767)


Landowner/ Authority/ I&APs Notification

Tuesday, 24 February 2015

REGISTER



NAME & SURNAME	ORGANISATION	POSTAL ADDRESS	CONTACT DETAILS	SIGNATURE
GERRIE RUDOPH	PLAAS EIENAAR.	POSBUS 528 PRIESKA. 8940	Tel No: Fax No: Cell No: 082 960 2113 E-mail: GERRIERUDOPH@VODAMAIL.CO.ZA	
Johannes Human	Hoekplaas Bdy	Postbus 390 Prieska 8940	Tel No: Fax No: Cell No: 082 883 8330 E-mail: johanneshuman5@gmail.com	
FRANS EKICERD	LIIFSPAN PAN	BUS 446 PRIESKA 8940	Tel No: Fax No: Cell No: 083 380 8427 E-mail:	

NAME & SURNAME	ORGANISATION	POSTAL ADDRESS	CONTACT DETAILS	SIGNATURE
J.J. Botler	Pleaserences	Postbus 192 Pretoria 890	Tel No: Fax No: Cell No: 0827170439 E-mail:	
			Tel No: Fax No: Cell No: E-mail:	
			Tel No: Fax No: Cell No: E-mail:	
			Tel No: Fax No: Cell No: E-mail:	
			Tel No: Fax No: Cell No: E-mail:	



**ENVIRONMENTAL IMPACT
ASSESSMENT (EIA) AND
ENVIRONMENTAL MANAGEMENT
PROGRAMME (EMPr) FOR THE
PROPOSED DEVELOPMENT OF
THREE 75MW SOLAR PHOTOVOLTAIC
(PV) ENERGY FACILITIES NEAR
COPPERTON, NORTHERN CAPE
PROVINCE**

**FINAL MINUTES OF
PUBLIC MEETING**

Held on
Thursday, 21 May 2015 at 16h30
Omega Hall, Alwyn Street, Bonteheuwel, Prieska

Northern Cape Province

SiVEST Environmental (Pty) Ltd

Contact: Nicolene Venter/Lynsey Rimbault

Address: PO Box 2921

51 Wessels Road

Rivonia 2128

Tel: 011 798 0600

Fax: 011 803 7272

E-mail: nicolenev@zitholele.co.za

lynseyr@sivest.co.za

Final Minutes prepared by:

Lynsey Rimbault

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1	WELCOME, INTRODUCTIONS.....	2
2	MEETING ATTENDEES	2
3	PURPOSE OF THE MEETING	2
4	PROJECT CONTEXT AND OVERVIEW	2
5	DISCUSSION SESSION AND QUESTIONS	2
6	CLOSURE AND WAY FORWARD	2

PUBLIC MEETING

Venue: Omega Hall, Alwyn Street, Bonteheuwel, Prieska
Date: Thursday, 21 May 2015
Time: 16h30-17h30

1 WELCOME, INTRODUCTIONS

Nicolene Venter welcomed everyone who attended the Public Meeting (PM). She introduced the representatives from SiVEST, Zitholele and BioTherm Energy at the meeting, noting that SiVEST is the independent Environmental Assessment Practitioner (EAP) undertaking the Environmental Impact Assessment (EIA) process.

2 MEETING ATTENDEES

A copy of the Attendance Record is attached as Annexure A.

3 PURPOSE OF THE MEETING

Nicolene Venter informed the attendees that the purpose of the PM was to:

- To provide an overview of the proposed project;
- Provide an opportunity to raise comments and/or concerns regarding the proposed project;
- To provide feedback on the environmental findings as in the Draft Scoping Report; and
- To record comments, issues and concerns raised.

4 PROJECT CONTEXT AND OVERVIEW

Nicolene Venter presented an overview of the proposed project explaining the background to the project, what the project would entail and the current status of the EIA process.

Refer to Annexure B for a copy of the presentation.

5 DISCUSSION SESSION AND QUESTIONS

Please refer to Annexure C for further the discussion session.

6 CLOSURE AND WAY FORWARD

Nicolene Venter closed the meeting at 17h30 and further stated that this would not be the last opportunity afforded to them to provide comments. She informed the attendees that the PM minutes, presentation, and attendance record would be forwarded to everyone who attended the meeting and to those who submitted apologies.

Annexure A

ATTENDANCE RECORD

Public Meeting Attendance Register				
Mr/Ms	Last Name	First Name	Position	Company
Mr	-	Richard		
Mr	Adams	Nillaas	General Worker	
Mr	Adonis	Muldry (Webb)		
Ms	Ana-Miah	Kholiwe		
Mr	Andreas	Frank		Siyamthemba Municipality
Mr	Arries	Martin		
Mr	August	Ronald		
Mr	Basson	Saul	General Worker	Siyamthemba Municipality
Mr	Berries	Lorenzo		
Mr	Boesak	Klaas Cornelius		
Mr	Bosman	Wessel		
Mr	Botha	Ernest		
Mr	Botha	Martin		Gemeerskaps Forum
Mr	Botha	Thomas		
Mr	George	Desmond		
Mrs	Griewes	Jennalina		
Mr	Hendricks	Benjamin Brendon		
Ms	Hendricks	Rozelle		
Ms	Hendriks	Elizabeth		
Mr	Isaacs	Jermaine	Construction Manager	BioTherm Energy
Mr	Jansen	Esmond		
Ms	Jenson	Felicity		
Mr	Joko	N		
Mr	Julies	Charl		
Ms	Julies	Danielle		
Mr	Kakora	Le-Waine		
Ms	Kapater	Rene		
Mr	Klein	Quarney		
Mr	Langfred	Justin		
Ms	Ludick	Gertruida		
Mr	Ludidi	William		
Mr	Mafiest	Jacob		
Ms	Magakwe	Beatrice		
Mr	Majebe	Killek		
Ms	Malgas	Gertruida		
Ms	Maritz	Sharon		
Mr	Maritz	Vivian	General Worker	
Mr	Matti	Collin Jansen		
Ms	Mistry	Chetna	Analyst	BioTherm Energy
Mr	Mohlauli	Johannes	General Worker	
Mr	Mpambani	Solomon		
Mr	Mugger	Danster	Secretary Ward 2	
Mr	Ng	Bonisehle	General Worker	
Mr	Nkone	Sonwabo		
Mr	Nohenda	H		
Mr	Papier	Piet	Mayor	Siyamthemba Municipality
Mr	Phike	David		Siyamthemba Municipality

Mr	Phike	Mlawuli		
Ms	Pieterse	Nomonde		
Mr	Plaatjies	George	Secretary	Siyamthemba Municipality
Ms	Puzane	Petronella		
Ms	Richardson	Irene	Environmental Manager	BioTherm Energy
Ms	Rimbault	Lynsey	Environmental Consultant	SiVEST
Mr	Roos	Nicolas Klaas		
Ms	Scott	Rosetta		
Ms	Smith	Eliska		
Mr	Smith	Randall		
Ms	Staden	Senobia		
Ms	Stadhouer	Raylene		
Mr	Swarts	Presley		
Ms	Tieties	Christina		
Mr	Van der Westhuisen	Desmond		
Mr	Van Staden	Johannes		
Mr	Van Staden	Kerneels		
Mr	Van Staden	Rudolf		
Mrs	Van Wyk	F.M.	Ward 2 Counsellor	Siyamthemba Municipality
Mrs	Van Wyk	Mirna		
Mr	Van Wyk	Pieter		
Ms	Venter	Nicolene	Public Participation Practitioner	Zitholele
Mr	Visser	David	General Worker	
Mr	William	Eden		
Ms	Yanla	Sanna		
Mr	Yawa	Benjamin		

Annexure B

COPY OF PRESENTATION

**ENVIRONMENTAL IMPACT ASSESSMENT FOR THE
PROPOSED CONSTRUCTION OF THE THREE HELENA
75MW SOLAR PHOTOVOLTAIC (PV) ENERGY
FACILITIES NEAR COPPERTON, NORTHERN CAPE
PROVINCE: DRAFT SCOPING REPORT**

DFA Reference Number:
HELENA SOLAR 1: 14/12/16/13/3/2/165
HELENA SOLAR 2: 14/12/16/13/3/2/166
HELENA SOLAR 3: 14/12/16/13/3/2/167

A PROFESSIONAL TEAM DELIVERING CREATIVE PROJECT SOLUTIONS

SIVEST

Consulting Engineers • Project Managers • Environmental Consultants • Town and Regional Planners

PUBLIC MEETING

PRESENTATION DATE: 21 May 2015

1

AGENDA

- Welcome, introduction and apologies
- Purpose and conduct of meeting
- Background to the proposed development
- Environmental process followed and desktop findings
- BioTherm Economic Development Strategy
- Discussion session
- Closure

2

CONDUCT OF MEETING

- Focus on issues relating to the EIA
- Equal participation
- Identify yourselves
- Recorder
- Cell phone etiquette

3

PURPOSE OF MEETING

- To provide an overview of the proposed project
- To provide feedback on the desktop findings as documented in the DSR
- Provide an opportunity to raise comments and/or concerns regarding the proposed project
- To record comments, issues and concerns raised

4

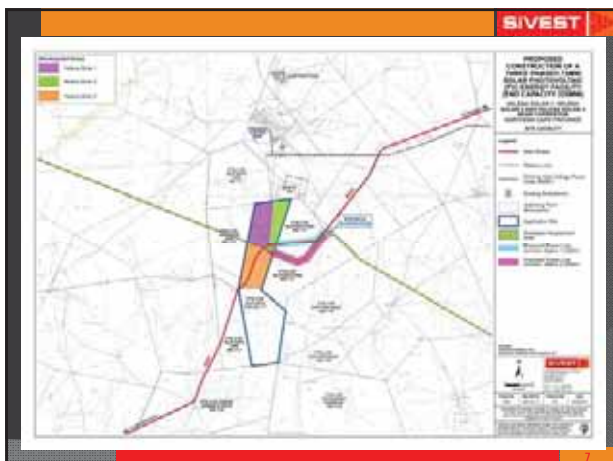
PROJECT OVERVIEW

5

PROJECT OVERVIEW

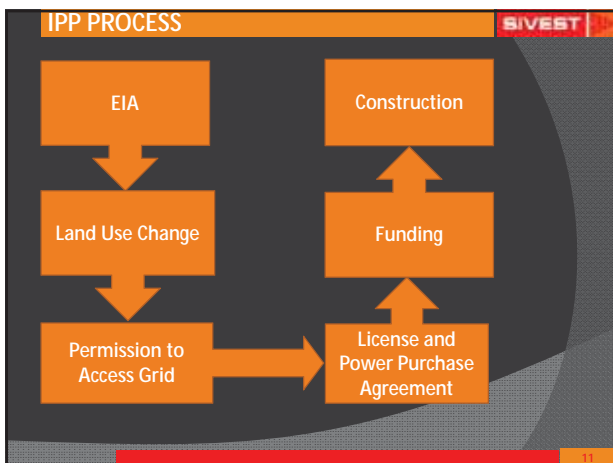
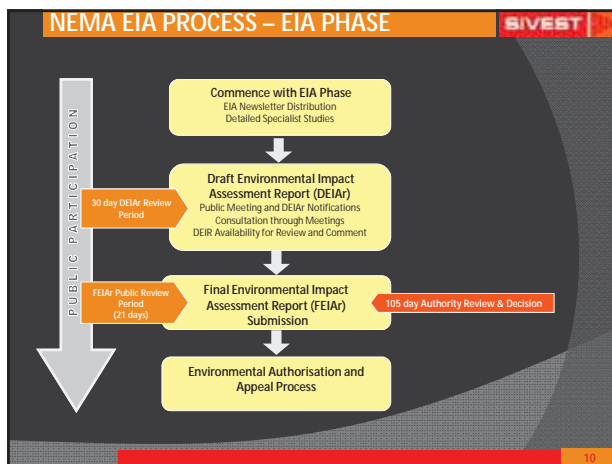
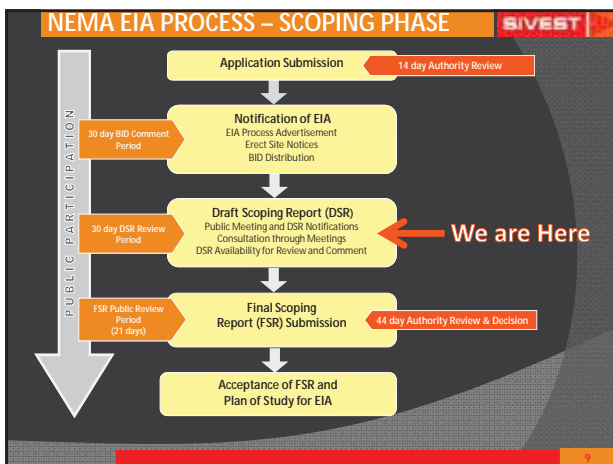
- **What does the proposed development entail?**
 - Construction of three PV energy facilities, each with a maximum generation capacity of 75MW
 - Construction of associated infrastructure
 - New power lines from the PV energy facilities to the Eskom grid
 - New substations
 - Access road upgrades
 - Construction laydown areas
 - Admin and warehouse buildings
- **Why is the project being proposed?**
 - To generate electricity to feed into the national grid
 - Promote use of renewable energy
 - To help meet future energy consumption requirements

6



PROJECT OVERVIEW

- Who is the independent EAP?
 - SIVEST SA
- Why undertake an EIA?
 - Legal requirement
 - Consider environmental impacts and mitigation measures
 - Provide stakeholders/I&APs the opportunity to participate
- Who is the applicant?
 - BioTherm Energy
- Who is the decision-making authority?
 - Department of Environmental Affairs (DEA)



DESKTOP ENVIRONMENTAL FINDINGS


DESKTOP FINDINGS **BIVEST**

- **Scoping phase underway**
 - Issues based, desk-top investigation
 - Identify potential issues for further investigated in the EIA phase
- **Environmental aspects being assessed**
 - Biodiversity (flora and fauna)
 - Avifauna
 - Surface Water
 - Soil and Agricultural Potential
 - Visual
 - Heritage
 - Socio-economic

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DESKTOP FINDINGS **BIVEST**


- **Biodiversity Assessment**
 - The project is unlikely to have highly significant impacts on the ecological receiving environment.
 - Impacts that will occur can be controlled and reduced to low significance.
 - The seriousness of many of these impacts can be determined during the field investigation of the site. Some impacts may require permits to be issued.



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DESKTOP FINDINGS **BIVEST**


- **Avifaunal Assessment**
 - With over a quarter of all southern African endemics or near endemics potentially occur in the study area, the study area as a whole should be regarded as moderately sensitive from an avifaunal perspective.
 - Potential high sensitive, no-go areas were identified, i.e. surface water (water troughs and dams) and high voltage lines, as both these micro-habitats are potential focal points of bird activity.
 - Water troughs may be removed and therefore declassified
 - High voltage lines included as a precaution – buffers will be removed if there are no nests present



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DESKTOP FINDINGS **BIVEST**

- **Surface Water Assessment**
 - Database findings revealed that two natural depression wetlands, and two non-perennial rivers are located within the study area.
 - Desktop findings reveal:
 - Four depression wetlands; and
 - Two unnamed, non-perennial rivers.



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DESKTOP FINDINGS **BIVEST**

- **Soils and Agricultural Assessment**
 - Virtually all of the study area comprises shallow, calcareous soils with rock.
 - Coupled with these shallow soils, the very low rainfall in the area means that the only means of cultivation would be by irrigation and the Google Earth image of the area shows absolutely no signs of any agricultural infrastructure and certainly none of irrigation.
 - The climatic restrictions mean that this part of the Northern Cape is suited at best for grazing and here the grazing capacity is low, around 20 ha/large stock unit.
 - Therefore the expected impact is low, as soils are shallow and climate is very unfavourable for cultivation.

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DESKTOP FINDINGS **BIVEST**


- **Visual Impact Assessment**
 - The study area has a rural visual character with a low visual sensitivity.
 - However, several solar energy facilities are proposed within relatively close proximity to the proposed PV plant, which will alter the visual character.
 - The proposed PV plant development is likely to visually influence four farmsteads identified within the visual assessment zone, therefore these are regarded to be potentially sensitive visual receptor locations.
 - The sensitivity of the receptor locations will need to be confirmed through further assessment in the next phase of the study.



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DESKTOP FINDINGS BIVEST

- **Heritage Assessment**
 - The possibility of archaeological finds have been identified as being high.
 - The palaeontological potential of the area has been confirmed as being low.
 - As seen from the archival in the heritage scoping report, the possibility of historical finds has been identified.
 - Thus further fieldwork is required to develop a comprehensive Heritage Management Plan.



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DESKTOP FINDINGS BIVEST

- **Socio-economic Assessment**
 - The national, provincial, and to some extent local government prioritise the development of renewable energy projects.
 - However, these developments should not jeopardise the growth of the other sectors, especially agriculture which is considered to be an economic driver in the local area.
 - The economy is in dire need for investment that would:
 - Diversity its economic base
 - Improve standards of living among local households through the increased income levels and access to improved municipal services
 - The proposed project is therefore likely to create a positive impact on the local economic development and the socio-economic environment in the municipality in general.

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EIA PHASE STUDIES BIVEST

- Detailed studies to be undertaken in the EIA phase:
 - Biodiversity (flora and fauna)
 - Avifauna
 - Surface Water
 - Soil and Agricultural Potential
 - Visual
 - Heritage
 - Socio-economic

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EIA PHASE STUDIES BIVEST

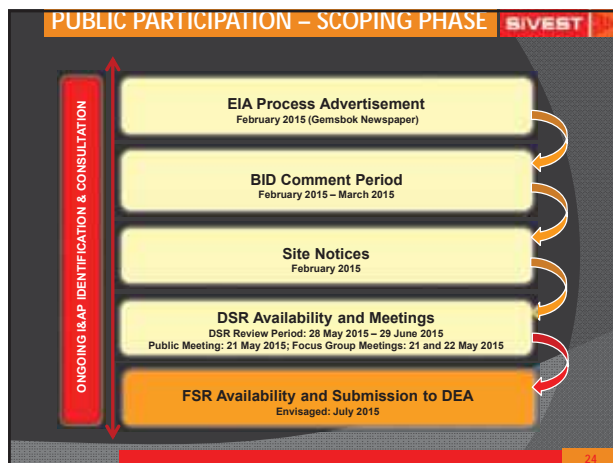
- **Issues to be addressed**
 - Undertake detailed fieldwork
 - Verify desktop findings
 - Rate the significance of impacts
 - Comparatively assess on site alternatives
 - Determine mitigation measures
 - Compile Environmental Management Programme

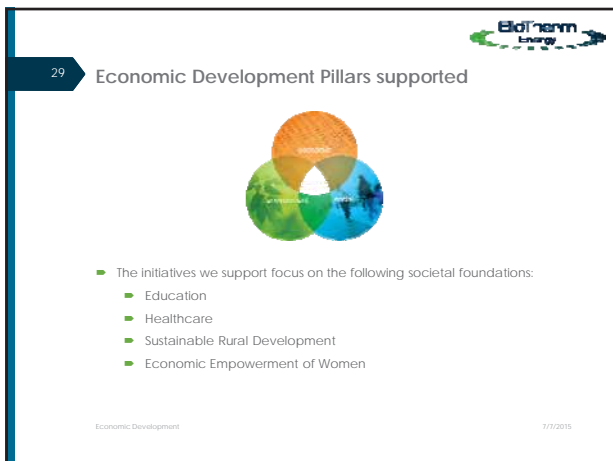
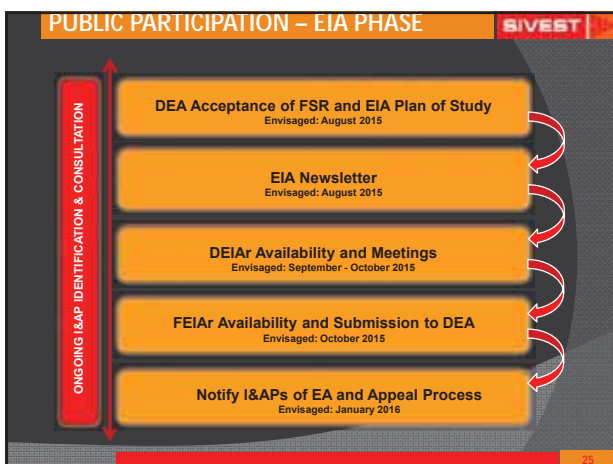
22

PUBLIC PARTICIPATION

BIVEST


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31 Implementation Strategy (Cont'd)

- Development of an action plan, including elements such as:
 - Work Task
 - Budget Required
 - Funding Source
 - Responsible Party
 - Completion Date
 - Progress Measurement Tool
- Monitoring, evaluation and update of strategy, if and when necessary



Economic Development 1/1/2015

32 Track Record

- Examples of initiatives implemented in South Africa include:
 - The upgrade of teaching equipment at a primary school in the Northern Cape, South Africa;
 - The provision of critical medical equipment to the local clinics and hospitals within various communities of the Northern Cape and Western Cape, South Africa;
 - The electrification of an Early Childhood Development (ECD) Centre in the Northern Cape, South Africa;
 - Infrastructural upgrades at an old age home in the Western Cape, South Africa, thus allowing them to qualify for better grant funding and accreditation;
 - Sponsorship of a "woman abuse awareness campaign" run by the South African Police Services in the Northern Cape, South Africa;

Economic Development 1/1/2015

33 Track Record (Cont'd)

- Supply of infantile mattresses to an ECD Centre in the Western Cape, South Africa;
- Provision of daily consumables to a disadvantage teenager diagnosed with Spina Bifida in the Western Cape, South Africa; and
- Sponsorship of a primary and high school principal to attend the Principal's Academy within the Western Cape, South Africa



Economic Development 1/1/2015

DISCUSSION

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CONTACT DETAILS

SIVEST Environmental Division
 PO Box 2921
 Rivonia
 2128

Andrea Gibb / Lynsey Rimbault
 Phone: (011) 798 0600
 Fax: (011) 803 7272
 E-mail: andreag@sivest.co.za / lynseyr@sivest.co.za
 Website: www.sivest.co.za

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WAY FORWARD

	2015							2016
	June	July	Aug	Sep	Oct	Nov	Dec	Jan
End of DSR comment period	☀							
Submission of FSR to DEA		☀						
DEA decision on FSR			☀					
Distribution of EIA Newsletter			☀					
DEIAR Comment period				☀	☀			
Hold Meetings (FGM and PM)				☀				
Submission of FEIAR to DEA					☀			
DEA Decision								☀

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Annexure C

DISCUSSION DOCUMENT

**OMGEWINGSIMPAKEVALUERING (OIE) EN OMGEWINGSBESTUURSPROGRAME
(OBPr) VIR DIE VOORGESTELDE ONTWIKKELING VAN DRIE 75MW FOTOVOLTAÏSE
(FV) SONKRAGAAANLEGTE NA BY COPPERTON, NOORD-KAAPPROVINSIE**

**ENVIRONMENTAL IMPACT ASSESSMENT (EIA) AND ENVIRONMENTAL
MANAGEMENT PROGRAMME (EMPr) FOR THE PROPOSED DEVELOPMENT OF
THREE 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR
COPPERTON, NORTHERN CAPE PROVINCE**

HELENA SOLAR 1: DO Verw./DEA Ref. No.: 14/12/16/3/3/2/765

HELENA SOLAR 2: DO Verw. /DEA Ref. No.: 14/12/16/3/3/2/766

HELENA SOLAR 3: DO Verw. /DEA Ref. No.: 14/12/16/3/3/2/767

**FINALE BESPREKINGSKOKUMENT / FINAL DISCUSSION DOCUMENT
PUBLIEKEVERGADERING / PUBLIC MEETING**

Omegasaal, Alwynstraat, / Omega Hall, Alwyn Street
Bonteheuwel, Prieska

Donderdag, 21 Mei 2015 om 16h30 / Thursday, 21 May 2015 at 16h30

INHOUDSOPGAWE / TABLE OF CONTENTS

1.	Sosio-Ekonomiese Aanverwante Kommentare/Kwessies - Socio-Economic Related Comments/Issues	1
2.	OIE Proses Aanverwante Kommentare/Kwessies - EIA Process Related Comments/Issues	1
3.	Projek Aanverwante Kommentare/Kwessies - Project Related Comments/Issues	2

Kommentare / kwellinge / kwessies is gekategoriseer volgens die omgewingsimpakte and daarna volgens VANNE van teenwoordiges
Comments / concerns / issues have been categorised according to environmental impact and thereafter according to attendees' SURNAME.

Die kommentare / kwessies / kwellinge is nie verbatim vasgelê nie, maar wel 'n verkorte opsomming daarvan
The comments / concerns / issues captured are not verbatim, but a summary.

Issue/Comment	Raised By & When	Response
1. Sosio-Ekonomiese Aanverwante Kommentare/Kwessies - Socio-Economic Related Comments/Issues		
<p>Dit was verneem hoeveel werksgeleenthede die voorgestelde projek sal bied.</p> <p>Translation: It was enquired as to how many jobs the proposed project will create.</p>	<p>VAN WYK, FM Raadslid: Wyk 2/ Councilor Region 2</p>	<p>BioTherm is die ontwikkelaar en die syfers rakende moontlike werksgeleenthede tydens konstruksie sal slegs beskikbaar wees wanneer 'n kontrakteur aangestel is. Die syfers is nie op hierdie stadium van die OIE beskikbaar nie.</p> <p>Irene Bezuidenhout, Environmental Manager, BioTherm Energy</p> <p>Translation: BioTherm is the developer and the figures regarding possible job opportunities that would be available during the construction phase will only be made available once a contractor has been appointed. The figures are not available at this stage of the EIA.</p> <p>Irene Bezuidenhout, Environmental Manager, BioTherm Energy</p>
2. OIE Proses Aanverwante Kommentare/Kwessies - EIA Process Related Comments/Issues		
<p>Dit was verneem wanneer sal die volgende vergaderings rakende die projek plaasvind?</p> <p>Translation: It was enquired as to when the next round of meetings for the proposed project will be.</p>	<p>VAN WYK, FM Raadslid: Wyk 2 / Councilor Region 2</p>	<p>Soos aangebied is dit die verwagting dat die volgende vergadering wat in die impakfase sal plaasvind in September of Oktober 2015.</p> <p>Nicolene Venter, Publieke Deelname Konsultant, Zitholele Consulting</p> <p>Translation: As per the presentation it is envisaged that the next round of meetings, in the impact phase, will take place in September or October 2015.</p> <p>Nicolene Venter, PP Practitioner, Zitholele Consulting</p>

3. Projek Aanverwante Kommentare/Kwessies - Project Related Comments/Issues

Dit was verneem hoeveel panele is nodig vir die opwekking deur 'n 75MW aanleg.

Translation:

It was enquired as to how many panels will be required for the generation by a 75MW plant.

BOTHA, Martin
Voorsitter / Chairman
Gemeenskapsforum /
Community Forum

Die inligting is tans nie beskikbaar nie aangesien n modulering wat hierdie inligting sal kan verskaf, eers later in die proses gedoen sal word.

Irene Bezuidenhout, Environmental Manager, BioTherm Energy

Na-vergaderingsnota:

Vir 'n 75MW fasiliteit sal daar ongeveer 286 666 panele geïnstalleer word. Slegs na die finale tegniese ontwerp gedoen is, sal die presiese getal beskikbaar wees.

Irene Bezuidenhout, Environmental Manager, BioTherm Energy

Translation:

The information is not available at this stage of the project as the modeling that will determine this still needs to be done.

Irene Bezuidenhout, Environmental Manager, BioTherm Energy

Post Meeting Note

For a 75MW facility there will be approximately 286 666 panels installed. The exact figure will only be determined with final technical design.

Irene Bezuidenhout, Environmental Manager, BioTherm Energy

Dit was verneem as alle studies en die aanstelling van 'n kontrakteur afgehandel is, wanneer sal die eerste graaf in die grond wees.

Translation:

Following the completion of all studies and the appointment of a contractor, it was queried how long is it likely to be before construction begins

Die verwagting is oor sowat 2 jaar, maar die tydperk is op hierdie stadium nog nie bevestig nie. Konstruksie is afhanklik of die projek in Rondte 5 van die Departement van Energie se Hernubare Energie Onafhanklike Kragvoorsiener Verkrygingsprogramme (REIPLPPP) verkies word as 'n voorkeurbiëër.

Irene Bezuidenhout, Environmental Manager, BioTherm Energy

Translation:

		<p>It is envisaged that construction will commence in approximately 2 years but this timeframe has not been confirmed at this stage. Construction is dependent on the project being selected as the preferred bidder under Round 5 of the Department of Energy's (DoE) Renewable Energy Independent Power Producer Procurement Programme (REIPPPP).</p> <p><i>Irene Bezuidenhout, Environmental Manager, BioTherm Energy</i></p>
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**Appendix 5H:
Landowner Notifications**

Lynsey Rimbault

From: Lynsey Rimbault
Sent: 26 May 2015 12:16
To: 'huisdanie@telkomsa.net'
Subject: Proposed Helena Solar PV Energy Facilities
Attachments: Helena EIA LO Letter Rev 1 26 May 2015 LR Danie and Jomima Bernard.pdf

Dear Danie and Jomima Bernard,

Please see attached a letter notifying you of the Environmental Impact Assessment (EIA) that is being undertaken for the three proposed Helena 75MW Solar Photovoltaic Energy Facilities.

Kind Regards

Lynsey Rimbault *(B.Sc.(Hons) Geography; M.Sc. Biodiversity, Conservation and Management)*
Environmental Consultant
SiVEST Environmental



SiVEST is a Level 3 BBBEE Contributor

Direct +27 11 798 0631 **Tel** +27 11 798 0600 **fax** +27 11 803 7272 **cell** +27 82 669 9558
email lynseyr@sivest.co.za **website** www.sivest.co.za



Consulting Engineers - Project Managers - Environmental Consultants - Town and Regional Planners
Durban - Johannesburg - Pietermaritzburg - Richards Bay - Ladysmith - Cape Town - Harare (Zimbabwe)

Lynsey Rimbault

From: Charl van der Merwe <huisdanie@telkomsa.net>
To: Lynsey Rimbault
Sent: 26 May 2015 12:49
Subject: Read: Proposed Helena Solar PV Energy Facilities

Your message

To:
Subject: Read: Proposed Helena Solar PV Energy Facilities
Sent: 26 May 2015 12:49:25 PM (UTC+02:00) Harare, Pretoria

was read on 26 May 2015 12:49:12 PM (UTC+02:00) Harare, Pretoria.

Your reference:

Our reference: 13031

Date: 26 May 2015

**ATTENTION: DANIE AND JOMIMA BERNARD
PORTION 4 OF THE FARM KLIPGATS PAN 117**

Via Email

Dear Danie and Jomima Bernard,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE 75MW HELENA SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

DEA REFERENCE NO.:

- **HELENA SOLAR 1: 14/12/16/3/3/2/765**
- **HELENA SOLAR 2: 14/12/16/3/3/2/766**
- **HELENA SOLAR 3: 14/12/16/3/3/2/767**

BioTherm Energy (Pty) Ltd (hereafter referred to as BioTherm) are proposing to construct three solar photovoltaic (PV) energy facilities and associated infrastructure approximately 10km south of Copperton. Each facility will have a total generation capacity of approximately 75MW.

BioTherm has appointed SiVEST as the independent Environmental Assessment Practitioner (EAP) to undertake the required Environmental Impact Assessment (EIA) for the above-mentioned proposed developments.

As the landowner of one of the properties traversed by the proposed power line alternatives, we would like to inform you of the EIA that is being undertaken for these proposed developments as per the National Environmental Management Act, 1998 (Act No 107 of 1998) – EIA Regulations 2010.

Yours sincerely

A handwritten signature in black ink, appearing to read "Andrea Gibb".

Andrea Gibb
Environmental Practitioner
SiVEST Environmental Division

Your reference:

Our reference: 13031

Date: 26 May 2015

**ATTENTION: GERHARDUS JACOBUS RUDOLPH
PORTION 3 OF THE FARM KLIPGATS PAN 117**

Via Email

Dear Gerhardus Jacobus Rudolph

**ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE 75MW
HELENA SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE
PROVINCE**

DEA REFERENCE NO.:

- **HELENA SOLAR 1: 14/12/16/3/3/2/765**
- **HELENA SOLAR 2: 14/12/16/3/3/2/766**
- **HELENA SOLAR 3: 14/12/16/3/3/2/767**

BioTherm Energy (Pty) Ltd (hereafter referred to as BioTherm) are proposing to construct three solar photovoltaic (PV) energy facilities and associated infrastructure approximately 10km south of Copperton. Each facility will have a total generation capacity of approximately 75MW.

BioTherm has appointed SiVEST as the independent Environmental Assessment Practitioner (EAP) to undertake the required Environmental Impact Assessment (EIA) for the above-mentioned proposed developments.

As the landowner of one of the properties on which the project is proposed to occur, we would like to inform you of the EIA that is being undertaken for these proposed developments as per the National Environmental Management Act, 1998 (Act No 107 of 1998) – EIA Regulations 2010.

Yours sincerely

A handwritten signature in black ink, appearing to read "Andrea Gibb".

Andrea Gibb
Environmental Practitioner
SiVEST Environmental Division

Lynsey Rimbault

From: Lynsey Rimbault
Sent: 26 May 2015 12:15
To: 'gerrierudolph@vodamail.co.za'
Subject: Proposed Helena Solar PV Energy Facilities
Attachments: Helena EIA LO Letter Rev 1 26 May 2015 LR Gerrie Rudolph.pdf

Dear Gerrie,

Please see attached a letter notifying you of the Environmental Impact Assessment (EIA) that is being undertaken for the three proposed Helena 75MW Solar Photovoltaic Energy Facilities.

Kind Regards

Lynsey Rimbault *(B.Sc.(Hons) Geography; M.Sc. Biodiversity, Conservation and Management)*

Environmental Consultant

SiVEST Environmental



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Direct +27 11 798 0631 **Tel** +27 11 798 0600 **fax** +27 11 803 7272 **cell** +27 82 669 9558
email lynseyr@sivest.co.za **website** www.sivest.co.za



Consulting Engineers - Project Managers - Environmental Consultants - Town and Regional Planners
Durban - Johannesburg - Pietermaritzburg - Richards Bay - Ladysmith - Cape Town - Harare (Zimbabwe)

Lynsey Rimbault

From: Gerrie Rudolph <gerrierudolph@vodamail.co.za>
To: Lynsey Rimbault; Lynsey Rimbault
Sent: 26 May 2015 13:11
Subject: Read: Proposed Helena Solar PV Energy Facilities

Your message

To:
Subject: Read: Proposed Helena Solar PV Energy Facilities
Sent: 26 May 2015 01:11:04 PM (UTC+02:00) Harare, Pretoria

was read on 26 May 2015 01:11:02 PM (UTC+02:00) Harare, Pretoria.

Lynsey Rimbault

From: Gerrie Rudolph <gerrierudolph@vodamail.co.za>
Sent: 26 May 2015 13:12
To: Lynsey Rimbault
Subject: Re: Proposed Helena Solar PV Energy Facilities

Hi Lindsey,
Many thanks for your feedback much appreciated.
Kind regards
Gerrie

From: [Lynsey Rimbault](#)
Sent: Tuesday, May 26, 2015 12:14 PM
To: gerrierudolph@vodamail.co.za
Subject: Proposed Helena Solar PV Energy Facilities

Dear Gerrie,

Please see attached a letter notifying you of the Environmental Impact Assessment (EIA) that is being undertaken for the three proposed Helena 75MW Solar Photovoltaic Energy Facilities.

Kind Regards

Lynsey Rimbault *(B.Sc.(Hons) Geography; M.Sc. Biodiversity, Conservation and Management)*
Environmental Consultant
SiVEST Environmental



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Consulting Engineers - Project Managers - Environmental Consultants - Town and Regional Planners
Durban - Johannesburg - Pietermaritzburg - Richards Bay - Ladysmith - Cape Town - Harare (Zimbabwe)

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Appendix 5I: Distribution to Organs of State

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED DEVELOPMENT OF THE THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

DISTRIBUTION OF THE DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT (DEIAR) TO ORGANS OF STATE FOR COMMENT

TITLE	SURNAME	NAME	POSITION	POSTAL ADDRESS	EMAIL ADDRESS
SIYATHEMBA LOCAL MUNICIPALITY					
Mr	Alexander	JRM	Municipal Manager	PO Box 16 PRIESKA 8940	mm@siyathemba.gov.za
PIXLEY KA SEME DISTRICT MUNICIPALITY					
Mr		Sonwabile	Senior Environmental Officer	Private Bag X1012 DE AAR 7000	
Mr	Madyo	Sindisile	LED Manager	Private Bag X1012 DE AAR 7000	excellentsolutions@live.co.za
DEPARTMENT OF WATER AND SANITATION					
Ms	Makungo	Ester	Environmental Officer	28 Central Road Beaconsfield KIMBERLEY 8301	makungoe@dwa.org.za
NORTHERN CAPE DEPARTMENT OF AGRICULTURE, LAND REFORM & RURAL DEVELOPMENT					
Mr	Steenkamp	Gert		P.O.Box 65 CALVINIA 8190	gsteenkamp@ncpg.gov.za
DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES					
<i>Northern Cape Department</i>					
Ms	Mans	Jacoline	Chief Forester	Koelenhof 306 Schroder Street UPINGTON, 8800	jacolinema@daff.gov.za
<i>Provincial Department</i>					
Ms	Buthalezi	Thoko	Directorate Land-use & Soil Management	Private Bag X120 PRETORIA 0001	Thokob@nda.agric.za
Ms	Marubini	Mashudu	Assistant Director	Private Bag X120 PRETORIA 0001	mashuduma@daff.gov.za
DEPARTMENT OF MINERAL RESOURCES (DMR)					
Mr	Jasper	Nieuwoudt	Regional Manager	Private bag X14 SPRINGBOK 8240	Jasper.Nieuwoudt@dmr.gov.za
NORTHERN CAPE DEPT OF ENVIRONMENT AND NATURE CONSERVATION					
	Mthombeni	Thulani		Private Bag X86102 KIMBERLEY 8300	tmtho@webmail.co.za
Ms	Ndzumo	Onwabile		90 Long Street, Sasko Building KIMBERLEY 8300	ondyndzumo@gmail.com
DEPT OF SPORT, ARTS & CULTURE: Heritage Resources Unit					
<i>Provincial - Northern Cape Department</i>					
Mr	Timothy	Andrew	Manager: Heritage Resources	PO Box 1930 KIMBERLEY 8300	ratha.timothy@gmail.com
SANRAL - WESTERN REGION					
Mr	Dyers	Shaun	Manager: Statutory Control	Private Bag X19 BELLVILLE 7535	Dyerss@nra.co.za
NORTHERN CAPE DEPARTMENT OF ROADS AND PUBLIC WORKS					
Mr	Steenkamp	Ivan	Deputy Director	PO Box 3132 Kimberley 8300	isteenkamp@ncpg.gov.za ivandrea@mweb.co.za
SAHRA: HEAD OFFICE					

TITLE	SURNAME	NAME	POSITION	POSTAL ADDRESS	EMAIL ADDRESS
Ms	Lavin	Jenna	Heritage Officer: Northern Cape	PO Box 4637 CAPE TOWN 8000	jlavin@sahra.org.za
ESKOM					
Mr	Geeringh	John	Chief Planner	PO Box 1091 JOHANNESBURG 2000	GeerinJH@eskom.co.za
SQUARE KILOMETRE ARRAY					
Dr	Tiplady	Adriaan	Manager: Site Categorisation	PO Box 522 SAXONWOLD 2132	atiplady@ska.ac.za
SA CIVIL AVIATION AUTHORITY (SA CAA)					
Ms	Stoh	Lizell	Obstacle Specialist	Private Bag X73 HALFWAY HOUSE 1685	strohl@caa.co.za
AIR TRAFFIC AND NAVIGATION SERVICES (ATNS)					
Ms	Morobane	Johanna	Manager: Corporate Sustainability and Environment	Private Bag X15 KEMPTON PARK 1620	JohannaM@atns.co.za
Mr	Masilela	Simphiwe	Obstacle Evaluator		SimphiweM@atns.co.za
TRANSNET FREIGHT RAIL					
Mr	Fiff	Sam	Environmental Manager: Freight Rail	PO Box 255 BLOEMFONTEIN 9300	sam.fiff@transnet.net
SENTECH					
Mr	Koegelenberg	Johan	Renewable Projects	Private Bag X06 Honeydew 2040	koegelenbergj@sentech.co.za
TELKOM					
Mr	Bester	Amanda	Wayleave Officer	Private Bag X20700 BLOEMFONTEIN 9300	WayleaCR@telkom.co.za BesterAD@telkom.co.za
Mr	van den Heever	Heleen	Wayleave Officer	Private Bag X20700 BLOEMFONTEIN 9300	WayleaCR@telkom.co.za
ENDANGERED WILDLIFE TRUST					
Mr	Leeuwner	Lourens	Renewable Energy Project	The Endangered Wildlife Trust, Private Bag X11, Modderfontein, 1609, Johannesburg	lourensl@ewt.org.za
WESSA - NORTHERN CAPE					
Ms	Visagie	Ronelle	EIA Coordinator, Wildlife and Energy Programme	PO Box 91 STRYDENBURG 8765	ronellev@ewt.org.za
Ms	Erasmus	Suzanne	EIA Coordinator, Wildlife and Energy Programme	PO Box 316 KIMBERLEY 8300	info@wessa.co.za wessanc@yahoo.com
BIRDLIFE SOUTH AFRICA					
Mr	Gear	Simon	Policy and Advocacy Manager	PO Box 515 RANDBURG 2125	advocacy@birdlife.org.za

SiVEST
Environmental

51 Wessel Road, Rivonia
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2128
Gauteng, South Africa

Phone + 27 11 798 0600
Fax + 27 11 803 7272
Email info@sivest.co.za
www.sivest.co.za



Established 1952

Manager: Site Categorisation
Square Kilometre Array
PO Box 522
SAXONWOLD
2132

ATTENTION: DR ADRIAAN TIPLADY

Via Post

DEA Reference: HELENA SOLAR 1: 14/12/16/3/3/2/765
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

Our reference: 13031

Date: 9 December 2015

Dear Dr Tiplady,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

- **DEA Ref No: HELENA SOLAR 1: 14/12/16/3/3/2/765**
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

SiVEST is in the process of undertaking the Environmental Impact Assessments (EIAs) for the proposed construction of the three Helena 75MW Solar Photovoltaic (PV) Energy Facilities near Copperton, Northern Cape Province.

We would like to take this opportunity to inform you that, in accordance with the National Environmental Management Act (NEMA), the three Draft Environmental Impact Assessment Reports (DEIARs) will be made available for public comment and review as from **Wednesday 9 December 2015 to Wednesday 27 January 2016** (end of business day).

Please find herewith enclosed electronic copies (on CD) of the three DEIARs as well as the accompanying appendices. We kindly request that you submit your comments to Public Participation Office at the below details, on or before **Wednesday 27 January 2016** (end of business day). In terms of section 56 (7) of the Environmental Impact Assessment Regulations 2010, under Government Notices No R543, comments from state departments will be accepted until **Monday 8 February 2016** (end of business day). SiVEST will forward any comments received after the public comment and review period directly to the relevant case officer at the Department of Environmental Affairs (DEA).

Should you have any questions or queries please do not hesitate to contact us at:

Andrea Gibb
PO BOX 2921, Rivonia, 2128
Tel – (011) 798 0600
Fax – (011) 803 7272
Email – andrea@sivest.co.za

Yours sincerely,

Andrea Gibb
Environmental Practitioner
SiVEST Environmental Division

Encl: 1 x Electronic copy (on CD) of the Helena Solar 1 DEIAR, the Helena Solar 2 DEIAR and the Helena Solar 3 DEIAR

SiVEST
Environmental

51 Wessel Road, Rivonia
PO Box 2921, Rivonia
2128
Gauteng, South Africa

Phone + 27 11 798 0600
Fax + 27 11 803 7272
Email info@sivest.co.za
www.sivest.co.za



Established 1952

Wayleave Officer
Telkom
Private Bag X20700
BLOEMFONTEIN
9300

ATTENTION: MS AMANDA BESTER

Via Post

DEA Reference: HELENA SOLAR 1: 14/12/16/3/3/2/765
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

Our reference: 13031

Date: 9 December 2015

Dear Ms Bester,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

- **DEA Ref No: HELENA SOLAR 1: 14/12/16/3/3/2/765**
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

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Should you have any questions or queries please do not hesitate to contact us at:

Andrea Gibb
PO BOX 2921, Rivonia, 2128
Tel – (011) 798 0600
Fax – (011) 803 7272
Email – andrea@sivest.co.za

Yours sincerely,

Andrea Gibb
Environmental Practitioner
SiVEST Environmental Division

Encl: 1 x Electronic copy (on CD) of the Helena Solar 1 DEIAR, the Helena Solar 2 DEIAR and the Helena Solar 3 DEIAR

SiVEST
Environmental

51 Wessel Road, Rivonia
PO Box 2921, Rivonia
2128
Gauteng, South Africa

Phone + 27 11 798 0600
Fax + 27 11 803 7272
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www.sivest.co.za



Established 1952

Manager: Heritage Resources
NC Department of Sport, Arts & Culture:
Heritage Resources Unit
PO Box 1930
KIMBERLEY
8300

DEA Reference: HELENA SOLAR 1: 14/12/16/3/3/2/765
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

Our reference: 13031

Date: 9 December 2015

ATTENTION: MR ANDREW TIMOTHY

Via Post

Dear Mr Timothy,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

- **DEA Ref No: HELENA SOLAR 1: 14/12/16/3/3/2/765**
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SiVEST Environmental Division

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Environmental Officer
Department of Water & Sanitation
28 Central Road
Beaconsfield
KIMBERLEY
8301
ATTENTION: MS ESTER MAKUNGO

DEA Reference: HELENA SOLAR 1: 14/12/16/3/3/2/765
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767
Our reference: 13031
Date: 9 December 2015

Via Post

Dear Ms Makungo,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

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2128
Gauteng, South Africa

Phone + 27 11 798 0600
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Email info@sivest.co.za
www.sivest.co.za



Established 1952

NC Department of Agriculture, Land Reform &
Rural Development
P.O. Box 65
CALVINIA
8190

DEA Reference: HELENA SOLAR 1: 14/12/16/3/3/2/765
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

Our reference: 13031

Date: 9 December 2015

ATTENTION: MR GERT STEENKAMP

Via Post

Dear Mr Steenkamp,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

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Andrea Gibb
Environmental Practitioner
SiVEST Environmental Division

Encl: 1 x Electronic copy (on CD) of the Helena Solar 1 DEIAR, the Helena Solar 2 DEIAR and the Helena Solar 3 DEIAR

Wayleave Officer
Telkom
Private Bag X20700
BLOEMFONTEIN
9300

ATTENTION: MS HELEN VAN DEN HEEVER

Via Post

DEA Reference: HELENA SOLAR 1: 14/12/16/3/3/2/765
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

Our reference: 13031

Date: 9 December 2015

Dear Ms van den Heever,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

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Yours sincerely,



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Established 1952

Deputy Director
NC Department of Roads & Public Works
PO Box 3132
KIMBERLEY
8300

DEA Reference: HELENA SOLAR 1: 14/12/16/3/3/2/765
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HELENA SOLAR 3: 14/12/16/3/3/2/767

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Date: 9 December 2015

ATTENTION: MR IVAN STEENKAMP

Via Post

Dear Mr Steenkamp,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

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Gauteng, South Africa

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Fax + 27 11 803 7272
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www.sivest.co.za



Established 1952

Chief Forester
NC Department of Agriculture, Forestry & Fisheries
Koelenhof
306 Schroder Street
UPINGTON
8800

DEA Reference: HELENA SOLAR 1: 14/12/16/3/3/2/765
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

Our reference: 13031

Date: 9 December 2015

ATTENTION: MS JACOLINE MANS

Via Post

Dear Ms Mans,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

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Email – andrea@sivest.co.za

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SiVEST Environmental Division

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Gauteng, South Africa

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Fax + 27 11 803 7272
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Established 1952

Regional Manager
Department of Mineral Resources
Private bag X14
SPRINGBOK
8240

DEA Reference: HELENA SOLAR 1: 14/12/16/3/3/2/765
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

Our reference: 13031

Date: 9 December 2015

ATTENTION: MR JASPER NIEUWOUDT

Via Post

Dear Mr Nieuwoudt,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

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SiVEST Environmental Division

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Heritage Officer: Northern Cape
SAHRA: Head Office
PO Box 4637
CAPE TOWN
8000

ATTENTION: MS JENNA LAVIN

Via Post

DEA Reference: HELENA SOLAR 1: 14/12/16/3/3/2/765
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

Our reference: 13031

Date: 9 December 2015

Dear Ms Lavin,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

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SiVEST Environmental Division

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Established 1952

Renewable Projects
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HONEYDEW
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DEA Reference: HELENA SOLAR 1: 14/12/16/3/3/2/765
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

Our reference: 13031

ATTENTION: MR JOHAN KOEGELENBERG

Date: 9 December 2015

Via Post

Dear Mr Koegelenberg,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

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SiVEST Environmental Division

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Gauteng, South Africa

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Fax + 27 11 803 7272
Email info@sivest.co.za
www.sivest.co.za



Established 1952

Manager: Corporate Sustainability and Environment
Air Traffic & Navigation Services (ATNS)
Private Bag X15
KEMPTON PARK
1620

DEA Reference: HELENA SOLAR 1: 14/12/16/3/3/2/765
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

Our reference: 13031

Date: 9 December 2015

ATTENTION: MS JOHANNA MOROBANE

Via Post

Dear Ms Morobanne,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

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Chief Planner
ESKOM
PO Box 1091
JOHANNESBURG
2000

ATTENTION: MR JOHN GEERINGH

Via Post

DEA Reference: HELENA SOLAR 1: 14/12/16/3/3/2/765
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

Our reference: 13031

Date: 9 December 2015

Dear Mr Geeringh,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

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Should you have any questions or queries please do not hesitate to contact us at:

Andrea Gibb
PO BOX 2921, Rivonia, 2128
Tel – (011) 798 0600
Fax – (011) 803 7272
Email – andrea@sivest.co.za

Yours sincerely,



Andrea Gibb
Environmental Practitioner
SiVEST Environmental Division

Encl: 1 x Electronic copy (on CD) of the Helena Solar 1 DEIAR, the Helena Solar 2 DEIAR and the Helena Solar 3 DEIAR

SiVEST
Environmental

51 Wessel Road, Rivonia
PO Box 2921, Rivonia
2128
Gauteng, South Africa

Phone + 27 11 798 0600
Fax + 27 11 803 7272
Email info@sivest.co.za
www.sivest.co.za



Established 1952

Municipal Manager
Siyathemba Local Municipality
PO Box 16
PRIESKA
8940

DEA Reference: HELENA SOLAR 1: 14/12/16/3/3/2/765
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

Our reference: 13031

Date: 9 December 2015

ATTENTION: MR JRM ALEXANDER

Via Post

Dear Mr Alexander,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

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Andrea Gibb
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SiVEST Environmental Division

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Obstacle Specialist
SA Civil Aviation Authority (SA CAA)
Private Bag X73
HALFWAY HOUSE
1685

ATTENTION: MS LIZELL STOH

Via Post

DEA Reference: HELENA SOLAR 1: 14/12/16/3/3/2/765
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

Our reference: 13031

Date: 9 December 2015

Dear Ms Stoh,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

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Environmental Practitioner
SiVEST Environmental Division

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Renewable Energy Project
The Endangered Wildlife Trust,
Private Bag X11,
MODDERFONTEIN,
Johannesburg
1609,

DEA Reference: HELENA SOLAR 1: 14/12/16/3/3/2/765
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

Our reference: 13031

Date: 9 December 2015

ATTENTION: MR LOURENS LEEUWNER

Via Post

Dear Mr Leeuwner,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

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Andrea Gibb
Environmental Practitioner
SiVEST Environmental Division

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Assistant Director
Department of Agriculture, Forestry & Fisheries
Private Bag X120
PRETORIA
0001
ATTENTION: MS MASHUDU MARUBINI

DEA Reference: HELENA SOLAR 1: 14/12/16/3/3/2/765
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

Our reference: 13031

Date: 9 December 2015

Via Post

Dear Ms Marubini,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

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SiVEST Environmental Division

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NC Department of Environment & Nature Conservation
90 Long Street, Sasko Building
KIMBERLEY
8300

DEA Reference: HELENA SOLAR 1: 14/12/16/3/3/2/765
HELENA SOLAR 2: 14/12/16/3/3/2/766
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ATTENTION: MS ONWABILE NDZUMO

Our reference: 13031

Via Post

Date: 9 December 2015

Dear Ms Ndzumo,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

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Environmental

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2128
Gauteng, South Africa

Phone + 27 11 798 0600
Fax + 27 11 803 7272
Email info@sivest.co.za
www.sivest.co.za



Established 1952

Environmental Manager: Freight Rail
Transnet Freight Rail
PO Box 255
BLOEMFONTEIN
9300

ATTENTION: MR SAM FIFF

Via Post

DEA Reference: HELENA SOLAR 1: 14/12/16/3/3/2/765
HELENA SOLAR 2: 14/12/16/3/3/2/766
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Date: 9 December 2015

Dear Mr Fiff,

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Manager: Statutory Control
SANRAL – Western Region
Private Bag X19
BELLVILLE
7535

DEA Reference: HELENA SOLAR 1: 14/12/16/3/3/2/765
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

Our reference: 13031

Date: 9 December 2015

ATTENTION: MR SHAUN DYERS

Via Post

Dear Mr Dyers,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

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Environmental

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2128
Gauteng, South Africa

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Fax + 27 11 803 7272
Email info@sivest.co.za
www.sivest.co.za



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Policy and Advocacy Manager
Birdlife South Africa
PO Box 515
RANDBURG
2125

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HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

Our reference: 13031

Date: 9 December 2015

ATTENTION: MR SIMON GEAR

Via Post

Dear Mr Gear,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

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Gauteng, South Africa

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Fax + 27 11 803 7272
Email info@sivest.co.za
www.sivest.co.za



Established 1952

Obstacle Evaluator
Air Traffic & Navigation Services (ATNS)
Private Bag X15
KEMPTON PARK
1620

ATTENTION: MR SIMPHIWE MASILELA

Via Post

DEA Reference: HELENA SOLAR 1: 14/12/16/3/3/2/765
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

Our reference: 13031

Date: 9 December 2015

Dear Mr Masilela,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

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Gauteng, South Africa

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www.sivest.co.za



Established 1952

LED Manager
Prixley Ke Seme District Municipality
Private Bag X1012
DE AAR
7000

DEA Reference: HELENA SOLAR 1: 14/12/16/3/3/2/765
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

Our reference: 13031

Date: 9 December 2015

ATTENTION: MR SINDISILE MADYO

Via Post

Dear Mr Madyo,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

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Senior Environmental Officer
Prixley Ke Seme District Municipality
Private Bag X1012
DE AAR
7000

ATTENTION: MR SONWABILE

Via Post

DEA Reference: HELENA SOLAR 1: 14/12/16/3/3/2/765
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

Our reference: 13031

Date: 9 December 2015

Dear Mr Sonwabile,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

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Should you have any questions or queries please do not hesitate to contact us at:

Andrea Gibb
PO BOX 2921, Rivonia, 2128
Tel – (011) 798 0600
Fax – (011) 803 7272
Email – andrea@sivest.co.za

Yours sincerely,



Andrea Gibb
Environmental Practitioner
SiVEST Environmental Division

Encl: 1 x Electronic copy (on CD) of the Helena Solar 1 DEIAR, the Helena Solar 2 DEIAR and the Helena Solar 3 DEIAR

EIA Coordinator, Wildlife and Energy Programme
WESSA - NC
PO Box 316
KIMBERLEY
8300

DEA Reference: HELENA SOLAR 1: 14/12/16/3/3/2/765
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

Our reference: 13031

Date: 9 December 2015

ATTENTION: MS SUZANNE ERASMUS

Via Post

Dear Ms Erasmus,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

- **DEA Ref No: HELENA SOLAR 1: 14/12/16/3/3/2/765**
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

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SiVEST Environmental Division

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Directorate Land-use & Soil Management
Department of Agriculture, Forestry & Fisheries
Private Bag X120
PRETORIA

0001
ATTENTION: MS THOKO BUTHELEZI

Via Post

DEA Reference: HELENA SOLAR 1: 14/12/16/3/3/2/765
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

Our reference: 13031

Date: 9 December 2015

Dear Ms Buthelezi,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

- **DEA Ref No: HELENA SOLAR 1: 14/12/16/3/3/2/765**
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SiVEST
Environmental

51 Wessel Road, Rivonia
PO Box 2921, Rivonia
2128
Gauteng, South Africa

Phone + 27 11 798 0600
Fax + 27 11 803 7272
Email info@sivest.co.za
www.sivest.co.za



Established 1952

NC Department of Environment & Nature Conservation
Private Bag X86102
KIMBERLEY
8300

DEA Reference: HELENA SOLAR 1: 14/12/16/3/3/2/765
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

ATTENTION: MR THULANI MTHOMBENI

Our reference: 13031

Via Post

Date: 9 December 2015

Dear Mr Mthombeni,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED CONSTRUCTION OF THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

- **DEA Ref No: HELENA SOLAR 1: 14/12/16/3/3/2/765**
HELENA SOLAR 2: 14/12/16/3/3/2/766
HELENA SOLAR 3: 14/12/16/3/3/2/767

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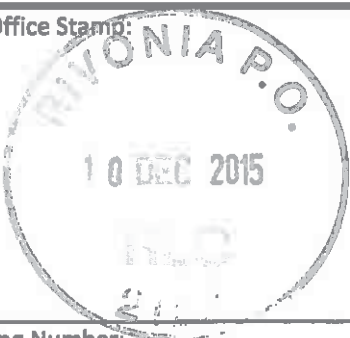
Should you have any questions or queries please do not hesitate to contact us at:


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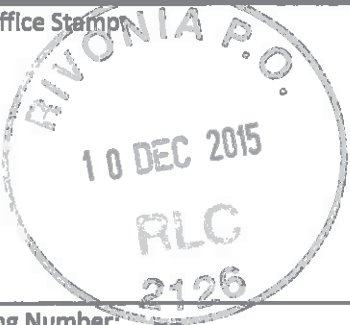
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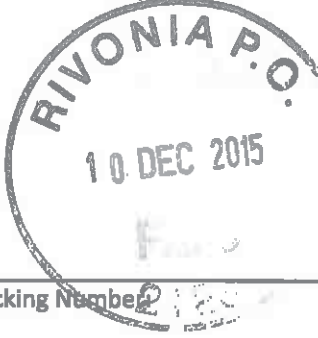
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Addressed To:		Post Office Stamp:
✓ _____		
— Mr Gert Steenkamp _____ — NC Dept of Agriculture, Land Reform _____ — PO Box 65 _____ — CALVINIA _____ — 8190 _____		
_____		Tracking Number:


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Registered Letter		13031
Fast Mail		
Addressed To:		Post Office Stamp:
✓ _____		
— Mr Sam Fiff _____ — Environmental Manager: _____ — Transnet Freight Rail (Jhb) _____ — PO Box 255 _____ — BLOEMFONTEIN _____ — 9300 _____		
_____		Tracking Number:


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Addressed To:		Post Office Stamp:
Mr Quarney Klein 10 Karroo Street Bonteheuwel Prieska 8940		
		Tracking Number:


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Ms Rene Kapater D22 Kodwa Street Ethembeni PRIESKA 8940		
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Mr Nillaas Adams General Worker Mandela Square 3652 Prieska 8940		
		Tracking Number:


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<p>Mr David Visser General Worker 24 Street 8 Prieska 8940</p>		


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<p>Mr H Nohenda E67 Joko Street Prieska 8940</p>		


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<p>Mr Bonisehle NG General Worker F24 Matha Street Prieska 8940</p>		


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Addressed To:		Post Office Stamp:
<p>Dr Adriaan Tiplady Manager: Site Categorisation Square Kilometre Array PO Box 522940 SAXONWOLD 2132</p>		

Trace and Track Parcel (CD)	<i>NORMA</i>	Project Number:
Registered Letter		13031
Fast Mail		
Addressed To:		Post Office Stamp:
<p>Ms Ester Makungo Environmental Officer Department of Water and Sanitati 28 Central Road Beaconsfield KIMBERLEY 8301</p>		

Trace and Track Parcel (CD)	<i>NORMA</i>	Project Number:
Registered Letter		13031
Fast Mail		
Addressed To:		Post Office Stamp:
<p>Mr Johan Koegelenberg Renewable Projects SENTECH Private Bag X06 HONEYDEW 2040</p>		

Trace and Track Parcel (CD) Registered Letter Fast Mail	<i>NORMAL</i>	Project Number: 13031
Addressed To: Mr Shaun Dyers Manager: Statutory Control SANRAL Western Region Private Bag X19 BELLVILLE 7535		Post Office Stamp:  Tracking Number:


Trace and Track Parcel (CD) Registered Letter Fast Mail	<i>NORMAL</i>	Project Number: 13031
Addressed To: Ms Jenna Lavin Heritage Officer: Northern Cape SAHRA PO Box 4637 CAPE TOWN 8000		Post Office Stamp:  Tracking Number:

Trace and Track Parcel (CD) Registered Letter Fast Mail	<i>NORMAL</i>	Project Number: 13031
Addressed To: Mr Jasper Nieuwoudt Regional Manager Department of Mineral Resources Private Bag X14 SPRINGBOK 8240		Post Office Stamp:  Tracking Number:

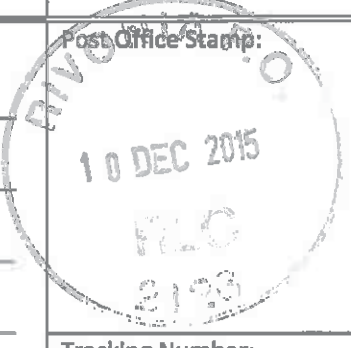
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Addressed To:		Post Office Stamp:
Thulani Mthombeni NC Dept of Environment & Nature Conservation Private Bag X 86102 KIMBERLEY 8300		Tracking Number:

Trace and Track Parcel (CD)	Norma	Project Number:
Registered Letter		13031
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Addressed To:		Post Office Stamp:
Mr Sonwabile & MR MADYO Senior Environmental Officer Pixley Ka Seme District Municipal Private Bag X1012 DE AAR 7000		Tracking Number:


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Registered Letter		13031
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Addressed To:		Post Office Stamp:
Mr Thoko Buthelezi & Ms Mashudu Marubini DAFF Private Bag X120 PRETORIA 0001		Tracking Number:

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- Ms Simphiwe Masilela &
 - Ms Johanna Morobane
 - Air Traffic Navigation Services
 - Private Bag x15
 - KEMPTON PARK
 - 1620

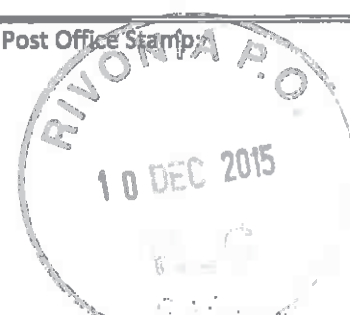
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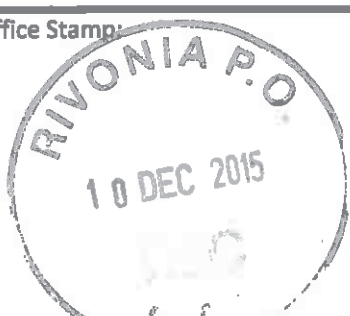
✓ Ms Onwabile Ndzumo
 Dept of Env & Nature Cons
 90 Long Street
 Sasko Building
 KIMBERLEY
 8300


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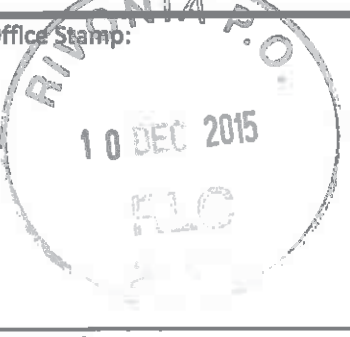
✓ Mr JRM Alexander Municipal
 Manager Siyathemba Local
 Municipality PO Box 16
 PRIESKA
 8940


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ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED DEVELOPMENT OF THE THREE HELENA 75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITIES NEAR COPPERTON, NORTHERN CAPE PROVINCE

DISTRIBUTION OF THE FINAL ENVIRONMENTAL IMPACT ASSESSMENT REPORT (FEIAR) TO ORGANS OF STATE FOR COMMENT

TITLE	SURNAME	NAME	POSITION	POSTAL ADDRESS	EMAIL ADDRESS
SIYATHEMBA LOCAL MUNICIPALITY					
Mr	Basson	Jakob	LED Manager	PO Box 16 PRIESKA 8940	jakob@siyathemba.gov.za
Mr	Tshikela	Olwethu	Environmental Health Practitioner	PO Box 16 PRIESKA 8940	tshikelaolwethu@gmail.com
Mr	Alexander	JRM	Municipal Manager	PO Box 16 PRIESKA 8940	mm@siyathemba.gov.za
PIXLEY KA SEME DISTRICT MUNICIPALITY					
Mr	Nkondeshe	Sonwabile	Senior Environmental Officer	Private Bag X1012 DE AAR 7000	snkondeshe@environment.gov.za
Mr	Madyo	Sindisile	LED Manager	Private Bag X1012 DE AAR 7000	excellentsolutions@live.co.za
DEPARTMENT OF ENVIRONMENTAL AFFAIRS BIODIVERSITY					
Mr	Lekota	Seoka		Private Bag X447 Pretoria 0001	slekota@environment.gov.za
Mr	Rabothata	Mmatlala		Private Bag X447 Pretoria 0001	slekotamrabothata@environment.gov.za
AGRI SA-NORTHERN CAPE					

Mr	Myburg	Henning	General Manager	PO Box 1094 KIMBERLEY 8300	henning@agrink.co.za
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DEPARTMENT OF WATER AND SANITATION

Mr	Mahunonyane	Moses	Director: Institutional Establishment	Private Bag X6101 KIMBERLEY 8300	MahunonyaneM@dws.gov.za
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Ms	Makungo	Ester	Environmental Officer	28 Central Road Beaconsfield KIMBERLEY 8301	makungoe@dwa.org.za
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NORTHERN CAPE DEPARTMENT OF AGRICULTURE, LAND REFORM & RURAL DEVELOPMENT

Mr	Steenkamp	Gert		P.O.Box 65 CALVINIA 8190	gsteenkamp@ncpg.gov.za
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DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES

Northern Cape Department

Ms	Mans	Jacoline	Chief Forester	Koelenhof 306 Schroder Street UPINGTON, 8800	jacolinema@daff.gov.za
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Provincial Department

Ms	Buthalezi	Thoko	Directorate Land-use & Soil Management	Private Bag X120 PRETORIA 0001	Thokob@nda.agric.za
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Ms	Buys	Hettie	Senior Registry Clerk	Private Bag X120 PRETORIA 0001	hettieb@daff.gov.za
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Ms	Marubini	Mashudu	Assistant Director	Private Bag X120 PRETORIA 0001	mashuduma@daff.gov.za
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DEPARTMENT OF MINERAL RESOURCES (DMR)

Mr	Ravhogoni	Ntsundeni	Regional Manager	Private Bag x6093 KIMBERLEY 8300	Ntsundeni.Ravhogoni@dmr.gov.za
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Mr	Jasper	Nieuwoudt	Regional Manager	Private bag X14 SPRINGBOK 8240	Jasper.Nieuwoudt@dmr.gov.za
NORTHERN CAPE DEPT OF ENVIRONMENT AND NATURE CONSERVATION					
Mr	Mthombeni	Thulani		Private Bag X86102 KIMBERLEY 8300	tmtho@webmail.co.za
Mr	Fisher	Brian	Director Environmental Impact Management	Private Bag X86102 KIMBERLEY 8300	bfisher@ncpg.gov.za
Ms	Ndzumo	Onwabile		90 Long Street, Sasko Building KIMBERLEY 8300	ondyndzumo@gmail.com
DEPT OF SPORT, ARTS & CULTURE: Heritage Resources Unit					
<i>Provincial - Northern Cape Department</i>					
Mr	Lenyibi	Patrick	Manager: Heritage Resources	Private Bag X5004 KIMBERLEY 8300	plenyibi@ncpg.gov.za
Mr	Timothy	Andrew	Manager: Heritage Resources	PO Box 1930 KIMBERLEY 8300	ratha.timothy@gmail.com
SANRAL - WESTERN REGION					
Ms	Abrahams	Nicole	Environmental Coordinator	Private Bag X19 BELLVILLE 7535	abrahamsn@nra.co.za
Mr	Dyers	Shaun	Manager: Statutory Control	Private Bag X19 BELLVILLE 7535	Dyerss@nra.co.za
NORTHERN CAPE DEPARTMENT OF ROADS AND PUBLIC WORKS					
Mr	Roelofse	Jaco	Director: Planning & Design	PO Box 3132 Kimberley 8300	roelofse.j@vodamail.co.za

Mr	Steenkamp	Ivan	Deputy Director	PO Box 3132 Kimberley 8300	isteenkamp@ncpg.gov.za ivandrea@mweb.co.za
SAHRA: HEAD OFFICE					
Ms	Higgitt	Natasha	Heritage Officer: Northern Cape	PO Box 4637 CAPE TOWN 8000	nhiggitt@sahra.org.za
Ms	Lavin	Jenna	Heritage Officer: Northern Cape	PO Box 4637 CAPE TOWN 8000	jlavin@sahra.org.za
ESKOM					
Mr	Geeringh	John	Chief Planner	PO Box 1091 JOHANNESBURG 2000	GeerinJH@eskom.co.za
SQUARE KILOMETRE ARRAY					
Dr	Tiplady	Adriaan	Manager: Site Categorisation	PO Box 522 SAXONWOLD 2132	atiplady@ska.ac.za
SA CIVIL AVIATION AUTHORITY (SA CAA)					
Ms	Stoh	Lizell	Obstacle Specialist	Private Bag X73 HALFWAY HOUSE 1685	strohl@caa.co.za
AIR TRAFFIC AND NAVIGATION SERVICES (ATNS)					
Ms	Morobane	Johanna	Manager: Corporate Sustainability and Environment	Private Bag X15 KEMPTON PARK 1620	JohannaM@atns.co.za
Mr	Masilela	Simphiwe	Obstacle Evaluator		SimphiweM@atns.co.za
TRANSNET FREIGHT RAIL					
Mr	Fiff	Sam	Environmental Manager: Freight Rail	PO Box 255 BLOEMFONTEIN 9300	sam.fiff@transnet.net

SENTECH					
Mr	Koegelenberg	Johan	Renewable Projects	Private Bag X06Honeydew2040	koegelenbergj@sentech.co.za
TELKOM					
Mr	Bester	Amanda	Wayleave Officer	Private Bag X20700 BLOEMFONTEIN 9300	WayleaCR@telkom.co.za BesteAD@telkom.co.za
Mr	van den Heever	Heleen	Wayleave Officer	Private Bag X20700 BLOEMFONTEIN 9300	WayleaCR@telkom.co.za
ENDANGERED WILDLIFE TRUST					
Mr	Leeuwner	Lourens	Renewable Energy Project	The Endangered Wildlife Trust, Private Bag X11, Modderfontein, 1609, Johannesburg	lourensl@ewt.org.za
WESSA - NORTHERN CAPE					
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Appendix 6: Specialist Studies



Appendix 6A: Biodiversity Assessment

IMPACT ASSESSMENT REPORT:

Ecological study on the potential impacts of the proposed BioTherm
Helena 3 Solar PV Energy Facility near Copperton in the Northern
Cape

Prepared by

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8 September 2015

FINAL REPORT: 1st Draft



David Hoare Consulting cc
Biodiversity Assessments, Vegetation Description /
Mapping, Species Surveys

DECLARATION OF INDEPENDENCE & SUMMARY OF EXPERTISE

Appointment of specialist

David Hoare of David Hoare Consulting cc was commissioned by SiVEST Environmental Division to provide specialist consulting services for the Basic Assessment for the proposed construction of the BioTherm Helena 3 Solar PV Energy Facility near Copperton in the Northern Cape Province. The consulting services comprise an assessment of potential impacts on the general ecology in the study area by the proposed project.

Details of specialist

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Summary of expertise

Dr David Hoare:

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- Registered professional member of The South African Council for Natural Scientific Professions (Ecological Science, Botanical Science), registration number 400221/05.
- Founded David Hoare Consulting cc, an independent consultancy, in 2001.
- Ecological consultant since 1995, with working experience in Gauteng, Mpumalanga, Limpopo, North West, Eastern Cape, Western Cape, Northern Cape and Free State Provinces, Tanzania, Kenya, Mozambique and Swaziland.
- Conducted, or co-conducted, over 350 specialist ecological surveys as an ecological consultant. Areas of specialization include general ecology, biodiversity assessments, vegetation description and mapping, plant species surveys and remote sensing of vegetation. Has undertaken work in grassland, thicket, forest, savannah, fynbos, coastal vegetation, wetlands and nama-karoo vegetation, but has a specific specialization in grasslands and wetland vegetation.
- Published six technical scientific reports, 15 scientific conference presentations, seven book chapters and eight refereed scientific papers.
- Attended 15 national and international congresses & 5 expert workshops, lectured vegetation science / ecology at 2 universities and referee for 2 international journals.

Independence

David Hoare Consulting cc and its Directors have no connection with the proponent. David Hoare Consulting cc is not a subsidiary, legally or financially, of the proponent. Remuneration for services by the proponent in relation to this project is not linked to approval by decision-making authorities responsible for authorising this proposed project and the consultancy has no interest in secondary or downstream developments as a result of the authorisation of this project. David Hoare is an independent consultant to SiVEST Environmental Division and has no business, financial, personal or other interest in the activity, application or appeal in respect of which he was appointed other than fair remuneration for work performed in connection with the activity, application or appeal. There are no circumstances that compromise the objectivity of this specialist performing such work.

Conditions relating to this report

The findings, results, observations, conclusions and recommendations given in this report are based on the author's best scientific and professional knowledge as well as available information. David Hoare Consulting cc and its staff reserve the right to modify aspects of the report including the recommendations if and when new information may become available from ongoing research or further work in this field, or pertaining to this investigation.

This report must not be altered or added to without the prior written consent of the author. This also refers to electronic copies of this report which are supplied for the purposes of inclusion as part of other reports, including main reports. Similarly, any recommendations, statements or conclusions drawn from or based on this report must make reference to this report. If these form part of a main report relating to this investigation or report, this report must be included in its entirety as an appendix or separate section to the main report.

EXECUTIVE SUMMARY

David Hoare Consulting cc was appointed by SiVEST Environmental Division to undertake a general ecology assessment of the study area. This report provides details of the results of the EIA Phase study, based on a desktop and field assessment of the study area and mapping from aerial imagery. The study area is located in the Northern Cape Province approximately 60 km to the south-west of Prieska.

The vegetation types that occur on site (Bushmanland Basin Shrubland, Bushmanland Vloere and possibly floristic elements of Bushmanland Arid Grassland) are classified as Least Threatened and also have a wide distribution and extent. The natural vegetation on the sites is therefore not considered to have high conservation status. The area is not within a Centre of Plant Endemism, nor does it occur in close proximity to an area identified as part of the National Parks Area Expansion Strategy or in areas identified in Provincial Conservation Plans to be of concern.

Local factors that may lead to parts of the sites having elevated ecological sensitivity are the presence of the following:

- Presence of natural vegetation on site, although of low conservation priority.
- Presence of pans and drainage lines.
- Potential presence of plant species protected according to the Northern Cape Nature Conservation Act.
- Potential presence of the following animals of potential conservation concern:
 - Honey badger (NT)
 - Geoffroy's Horseshoe Bat (NT/LC)
 - Darling's Horseshoe Bat (NT)
 - Leseuer's Wing-gland Bat (NT)
 - Kori Bustard (VU),
 - Ludwig's Bustard (VU),
 - Blue Crane (VU),
 - Martial Eagle (VU),
 - Lanner Falcon (NT),
 - Lesser Kestrel (NT),
 - Secretarybird (NT).
- Potential invasion of natural habitats by alien invasive plants, thus causing additional impacts on biodiversity features.

Potential ecological impacts for the project were determined to be as follows:

1. Impacts on indigenous natural vegetation;
2. Impacts on a plant species of low conservation concern;
3. Impacts on protected plant species;
4. Impacts on a protected tree species;
5. Impacts on pans / drainage lines;
6. Mortality of sedentary animals;
7. Displacement of mobile fauna;
8. Mortality of birds by collision with power lines;
9. Establishment and spread of declared weeds and alien invader plants.

Following a field assessment of the site, four of these impacts were assessed as unlikely to occur (Impacts 2, 4, 6 and 7). A summary and comparison between pre- and post-mitigation phases is provided in the following table:

Environmental	Issues	Rating	Average	Rating	Average
---------------	--------	--------	---------	--------	---------

parameter		prior to mitigation		post mitigation	
Indigenous natural vegetation	Loss	-36		-36	
Protected plant species	Loss of individuals	-11		-9	
Drainage areas/pans	Damage, loss of vegetation	-30		-10	
Bird species of conservation concern	Collision with power lines	-26		-11	
Natural habitat	Invasion by alien invasive plant species leading to habitat loss and/or degradation	-28		-11	
			- 26.2		-15.4
			Low Negative Impact		Low Negative Impact

The number of projects of a similar nature that have been proposed or already approved is significant. It is therefore expected that there will be some cumulative impacts associated with the combination of all these projects. The most important of these are as follows:

- Impacts on indigenous natural vegetation
- Displacement of mobile fauna
- Bird mortality due to power line collisions
- Establishment and spread of declared alien plants.

These cumulative impacts could potentially have an influence at a regional level on habitat and populations of sensitive species. This is due primarily to the current unaltered state of the general habitat in the region, which will be significantly altered if all projects proceed.

The report concludes that there are some relatively minor issues related to the ecology of the project site that could result in ecological impacts. The most important of these is the overall loss of natural habitat, for which no mitigation will reduce the significance of the impact. Other potential issues that can be managed are impacts on the pan and/or the drainage area, collision with overhead power lines by bird species of conservation concern, invasion of natural habitat by alien invasive plant species and possible (but unlikely) loss of protected plant species.

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INTRODUCTION

Terms of reference and approach

SiVEST Environmental Division was appointed to undertake an application for environmental authorisation through an Environmental Impact Assessment (EIA) for the proposed BioTherm Helena 3 Solar PV Energy Facility near Copperton in the Northern Cape Province. The proposed project will encompass the installation of a solar PV field and associated components, in order to generate electricity that is to be fed into the Eskom grid. The facility will have a maximum export capacity of 75MW. The proposed development area is approximately 530 ha, however it is envisaged that the 75MW energy facility layout will only require approximately 250 ha. The voltage of the connection lines from the solar PV energy facility substation to the grid is likely to be 132kV.

The purpose of the EIA is to identify environmental impacts associated with the project.

On 19 February 2015 David Hoare Consulting cc was appointed by SiVEST Environmental Division to undertake a general ecology assessment of the study area. It was agreed that the study would include the following:

Scoping Phase:

- Conduct a desktop scoping study to broadly describe and characterise the study area in terms of:
 - Vegetation types and/or habitats;
 - Red Data (threatened and endangered) flora, fauna and avifauna species;
 - The potential presence of trees protected according to the National Forests Act and fauna and flora protected under the National Environmental Management: Biodiversity Act;
 - Important Bird Areas (IBAs) and Critical Biodiversity Areas (CBAs);
 - The general status of vegetation on site; and
 - Potential impact on biodiversity, sensitive habitats and ecosystem functioning.
- Compile scoping level biodiversity report including (but not limited to) the following aspects:
 - Introduction;
 - Legislative background as applicable to the proposed activity;
 - High level description of the environmental baseline;
 - Identification of gaps in terms of the environmental baseline;
 - Methodology;
 - High level identification and mapping of biodiversity (fauna and flora) sensitive areas within the proposed application site (all sensitive areas within the development site must be provided to SiVest as shapefiles);
 - Potential anticipated impacts related to biodiversity (fauna and flora);
 - Recommendations for further assessment; and
 - Conclusion.

Impact Assessment Phase:

- Undertake field investigations to assess and confirm the patterns identified during the desktop assessment.
- Compile an impact level biodiversity report including (but not limited to) the following aspects:
 - Introduction;
 - Legislative background as applicable to the proposed activity;

- Updated environmental baseline;
- Methodology;
- Identification and mapping of biodiversity (fauna and flora) sensitive areas within the application site based on field investigation and findings (all sensitive areas within the development site must be provided to SiVEST as shapefiles);
- Assessment of the significance of the proposed development on flora, fauna and ecology during the Pre-construction, Construction, Operation, Decommissioning Phases (using SiVEST's Impact Assessment Methodology);
- Findings (maps to be created and shapefiles submitted);
- Alternatives Assessment (alternatives will be provided);
- Implications of specialist findings for the proposed development (e.g. permits, licenses, etc.);
- Cumulative impact identification and assessment;
- Recommend mitigations measures and provide recommendations in order to minimize the impact of the proposed development on flora, fauna, ecology, etc.; and
- Conclusion.
- Update and amend the draft report according to SiVEST's comments and resubmit final report for inclusion in the Environmental Impact Report.

This report provides details of the results of the EIA phase assessment. The findings of the study are based on a desktop and field assessment of the study area and mapping from aerial imagery.

RELEVANT LEGISLATIVE AND PERMIT REQUIREMENTS

Relevant legislation is provided in this section to provide a description of the key legal considerations of importance to the proposed project. The applicable legislation is listed below.

Legislation

National Environmental Management Act, Act No. 107 of 1998 (NEMA)

NEMA requires, inter alia, that:

- "development must be socially, environmentally, and economically sustainable",
- "disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied." ,
- "a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions",

NEMA states that "the environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage."

Environment Conservation Act No 73 of 1989 Amendment Notice No R1183 of 1997

The ECA states that:

Development must be environmentally, socially and economically sustainable. Sustainable development requires the consideration of inter alia the following factors:

- that pollution and degradation of the environment is avoided, or, where they cannot be altogether avoided, are minimised and remedied;
- that the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;
- that the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised; and
- that negative impacts on the environment and on peoples' environmental rights be anticipated and prevented, and where they cannot be altogether prevented are minimised and remedied.

The developer is required to undertake Environmental Impact Assessments (EIA) for all projects listed as a Schedule 1 activity in the EIA regulations in order to control activities which might have a detrimental effect on the environment. Such activities will only be permitted with written authorisation from a competent authority.

National Forests Act (Act no 84 of 1998)

Protected trees

According to this act, the Minister may declare a tree, group of trees, woodland or a species of trees as protected. The prohibitions provide that 'no person may cut, damage, disturb, destroy or remove any *protected tree*, or collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, except under a licence granted by the Minister'.

Forests

Prohibits the destruction of indigenous trees in any natural forest without a licence.

National Environmental Management: Biodiversity Act (Act No 10 of 2004)

In terms of the Biodiversity Act, the developer has a responsibility for:

- The conservation of endangered ecosystems and restriction of activities according to the categorisation of the area (not just by listed activity as specified in the EIA regulations).
- Promote the application of appropriate environmental management tools in order to ensure integrated environmental management of activities thereby ensuring that all development within the area are in line with ecological sustainable development and protection of biodiversity.
- Limit further loss of biodiversity and conserve endangered ecosystems.

Chapter 4 of the Act relates to threatened or protected ecosystems or species. According to Section 57 of the Act, "Restricted activities involving listed threatened or protected species":

- (1) A person may not carry out a restricted activity involving a specimen of a listed threatened or protected species without a permit issued in terms of Chapter 7.

Such activities include any that are "of a nature that may negatively impact on the survival of a listed threatened or protected species".

Chapter 5 of the Act relates to species and organisms posing a potential threat to biodiversity. According to Section 75 of the Act, "Control and eradication of listed invasive species":

- (1) Control and eradication of a listed invasive species must be carried out by means of methods that are appropriate for the species concerned and the environment in which it occurs.
- (2) Any action taken to control and eradicate a listed invasive species must be executed with caution and in a manner that may cause the least possible harm to biodiversity and damage to the environment.
- (3) The methods employed to control and eradicate a listed invasive species must also be directed at the offspring, propagating material and re-growth of such invasive species in order to prevent such species from producing offspring, forming seed, regenerating or re-establishing itself in any manner.

Government Notice No. 1002 of 2011: National List of Ecosystems that are Threatened and in need of protection

Published under Section 52(1)(a) of the National Environmental Management: Biodiversity Act (Act No. 10 of 2004). This Act provides for the listing of threatened or protected ecosystems based on national criteria. The list of threatened terrestrial ecosystems supersedes the information regarding terrestrial ecosystem status in the National Spatial Biodiversity Assessment (2004).

The Environmental Impact Assessment (EIA) Regulations include three lists of activities that require environmental authorisation:

- Listing Notice 1: activities that require a basic assessment (R544 of 2010),
- Listing Notice 2: activities that require seeing and environmental impact report (EIR) (R545 of 2010),
- Listing Notice 3: activities that require a basic assessment in specific identified geographical areas only (R546 of 2010).

Activity 12 in Listing Notice 3 relates to the clearance of 300m² or more of vegetation, which will trigger a basic assessment within any critically endangered or endangered ecosystem listed in terms of S52 of the Biodiversity Act. This means any development that involves loss of natural habitat in a listed critically endangered or endangered ecosystem is likely to require at least a basic assessment in terms of the EIA regulations.

It is important to note that while the original extent of each listed ecosystem has been mapped, a basic assessment report in terms of the EIA regulations is triggered only in remaining natural habitat within each ecosystem and not in portions of the ecosystem where natural habitat has already been irreversibly lost.

GNR 151: Critically Endangered, Endangered, Vulnerable and Protected Species List

Published under Section 56(1) of the National Environmental Management: Biodiversity Act (Act No. 10 of 2004).

GNR 1187: Amendment of Critically Endangered, Endangered, Vulnerable and Protected Species List

Published under Section 56(1) of the National Environmental Management: Biodiversity Act (Act No. 10 of 2004).

Conservation of Agricultural Resources (Act No. 43 of 1983) as amended in 2001

Declared Weeds and Invaders in South Africa are categorised according to one of the following categories:

- Category 1 plants: are prohibited and must be controlled.
- Category 2 plants: (commercially used plants) may be grown in demarcated areas providing that there is a permit and that steps are taken to prevent their spread.
- Category 3 plants: (ornamentally used plants) may no longer be planted; existing plants may remain, as long as all reasonable steps are taken to prevent the spreading thereof, except within the floodline of watercourses and wetlands.

National Water Act (Act 36 of 1998)

Wetlands, riparian zones and watercourses are defined in the Water Act as a water resource and any activities that are contemplated that could affect the wetlands requires authorisation (Section 21 of the National Water Act of 1998). A "watercourse" in terms of the National Water Act (Act 36 of 1998) means:

- River or spring;
- A natural channel in which water flows regularly or intermittently;
- A wetland, lake or dam into which, or from which, water flows; and

Any collection of water which the Minister may, by notice in the gazette, declare to be a watercourse, and a reference to a watercourse includes, where relevant, its bed and banks.

National Veld and Forest Fire Act (Act No. 101 of 1998)

Provides requirements for veldfire prevention through firebreaks and required measures for fire-fighting. Chapter 4 of the Act places a duty on landowners to prepare and maintain firebreaks. Chapter 5 of the Act places a duty on all landowners to acquire equipment and have available personnel to fight fires.

Northern Cape Nature Conservation Act, No. 9 of 2009

This Act provides for the sustainable utilisation of wild animals, aquatic biota and plants; provides for the implementation of the Convention on International Trade in Endangered Species of Wild Fauna and Flora; provides for offences and penalties for contravention of the Act; provides for the appointment of nature conservators to implement the provisions of the Act; and provides for the issuing of permits and other authorisations. Amongst other regulations, the following may apply to the current project:

- Boundary fences may not be altered in such a way as to prevent wild animals from freely moving onto or off of a property;
- Aquatic habitats may not be destroyed or damaged;
- The owner of land upon which an invasive species is found (plant or animal) must take the necessary steps to eradicate or destroy such species.

The Act provides lists of protected species for the Province. According to Northern Cape Nature Conservation officials, a permit is required for the removal of any species on this list.

Other Acts

Other Acts that may apply to biodiversity issues, but which are considered to not apply to the current site are as follows:

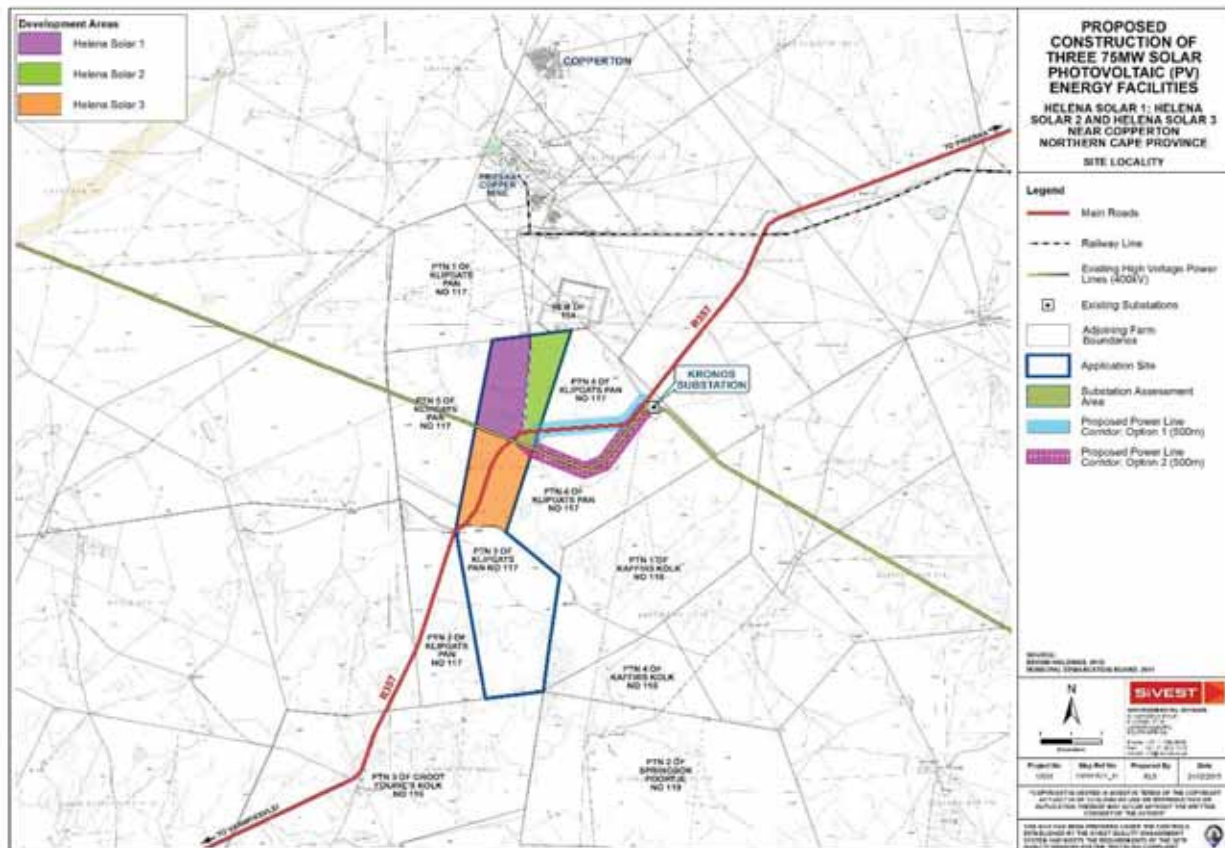
- National Environmental Management Protected Areas Act (Act No. 57 of 2003)
- Marine Living Resources Act (Act No. 18 of 1998)
- Sea Birds and Seals Protection Act (Act No. 46 of 1973)
- Lake Areas Development Act (Act No. 39 of 1975)
- Mountain Catchment Areas Act (Act No. 63 of 1970)
- Integrated Coastal Zone Management Act (Act No. 24 of 2008)

DESCRIPTION OF PROPOSED INFRASTRUCTURE AND ALTERNATIVES

The proposed project will encompass the installation of a solar PV field and associated components, in order to generate electricity that is to be fed into the Eskom grid. The facility will have a maximum export capacity of 75MW. The proposed development area is approximately 530 ha, however it is envisaged that the 75MW energy facility layout will only require approximately 250 ha. The voltage of the connection lines from the solar PV energy facility substation to the grid is likely to be 132kV.

Project components

This proposed PV energy facility forms one of three PV energy facilities with a 75MW export capacity that BioTherm are proposing to develop on Portion 3 of the farm Klipgats Pan No 117 (Figure 1). In order to accommodate the Department of Energy's (DoE) competitive bidding process for procuring renewable energy from Independent Power Producers in South Africa each PV energy facility will be developed under a separate Special Purpose Vehicle (SPV) and therefore each requires a separate Environmental Authorisation. However, the possibility to allow shared associated infrastructure will be considered.



The solar PV energy facility will consist of the following components:

- Approximately 300 000 solar PV panels with a total export capacity of 75MW;
- Panels will be either fixed axis mounting or single axis tracking solutions, and will be either crystalline silicon or thin film technology;
- Onsite switching station, with the transformers for voltage step up from medium voltage to high voltage;
- The panels will be connected in strings to inverters. For a 75MW size facility, typically 2MW inverter stations which are containerised stations housing 2x1MW inverters and 1x2MVA transformers will be used; therefore approximately 43 inverter stations will be required throughout the site;
- DC power from the panels will be converted into AC power in the inverters and the voltage will be stepped up to 22-33kV (medium voltage) in the transformers.
- The 22-33kV cables will be run underground in the facility to a common point before being fed to the onsite substation where the voltage will typically be stepped up to 132kV.
- Grid connection is to the Kronos substation. A Power line of 132kV will run from the onsite substation to the Kronos substation. The distance will be about 4km.
- A lay-down area for the temporary storage of materials during the construction activities;
- Access roads and internal roads;
- Construction of a car park and fencing around the project; and
- Administration, control and warehouse buildings.

The layout for the proposed PV facility is presented in Figure 2.

Solar field

Solar PV panels are usually arranged in rows or 'arrays' consisting of a number of PV panels. The area required for the PV panel arrays will likely need to be entirely cleared or graded. Where tall vegetation is present, this vegetation will be removed from the PV array area.

Approximately 300 000 solar PV panels will be required per project for a total export capacity of 75MW. Support structures will be either fixed axis mounting or single axis tracking solutions. The modules will be either crystalline silicon or thin film technology. The solar PV panels are variable in size, and are affected by advances in technology between project inception and project realisation. The actual size of the PV panels to be used will be determined in the final design stages of the project. The PV panels are mounted onto metal frames which are usually aluminium. Rammed or screw pile foundations are commonly used to support the panel arrays.

Associated infrastructure

Electrical infrastructure

The solar PV panel arrays are connected to each other in strings, which are in turn connected to inverters. For a 75MW size facility, typically 2MW inverter stations which are containerised stations housing 2x1MW inverters and 1x2MVA transformers will be used; therefore approximately 43 inverter stations will be required throughout the site for the proposed solar PV energy facility. DC power from the panels will be converted into AC power in the inverters and the voltage will be stepped up to 22-33kV (medium voltage) in the transformers. The 22-33kV cables will be run underground in the facility to a common point before being fed to the onsite substation and switching station where the voltage will typically be stepped up to 132kV. A Power line with a voltage of up to 132kV will run from the onsite substation to the existing Kronos substation. The distance will be about 4km.

Buildings

The solar field will require onsite buildings which will be used in the daily operation of the plant and includes an administration building (office). The buildings will likely be single storey buildings which will be required to accommodate the following:

- Control room
- Workshop
- High Voltage (HV) switchgear
- Mess Room
- Toilets
- Warehouse for storage
- Car park and fencing around the project

Construction laydown area

A general construction lay-down area will be required for the construction phase of the proposed solar PV energy facility. The size of this area is yet to be determined, but 3 to 5 hectares is likely.

Other associated infrastructure

Other associated infrastructure includes the following:

- Access roads and internal roads;
- A car park; and
- Fencing around the project.

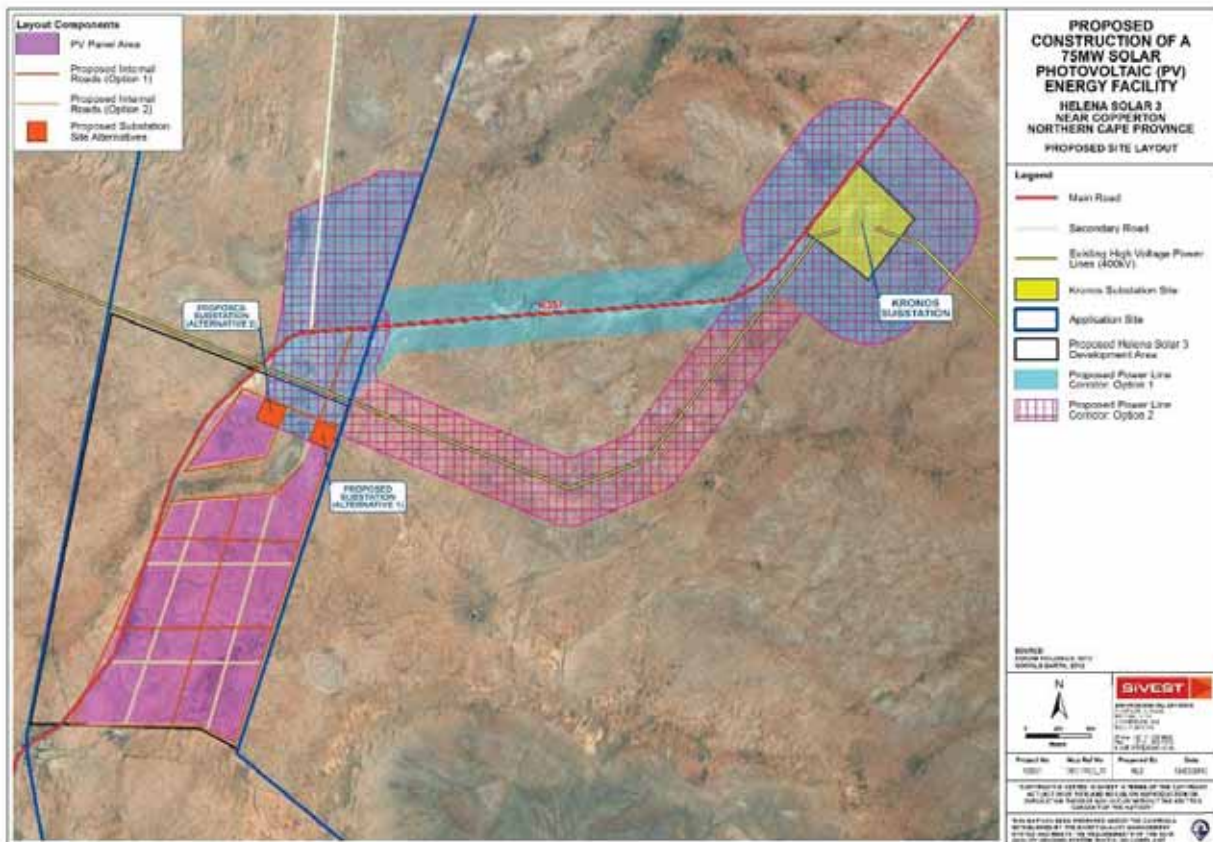


Figure 2: Proposed layout alternatives.

Alternatives

Due to the limited space available as well as the constraints of the sensitive areas, no alternative PV panel layouts were identified. It was felt that it would be environmentally preferable to assess one viable panel layout rather than two panel layouts that are not technically or environmentally viable.

Other design or layout alternatives have been identified. Two alternative site locations for the substation were also proposed, as well as two alternative route corridors for the proposed power line. Additionally, two road and cabling layout alternatives were identified. Based on the scoping phase specialist findings the substation assessment area was eliminated as an appropriate area for the proposed substation as most of this site was found to be potentially sensitive by the specialists. As such, two alternative substation sites that cover an area of 3 ha each were proposed to be assessed in the EIA phase. Should the other two PV projects that are being proposed by BioTherm on the same farm also be granted EAs and be awarded preferred bidder status by the DoE the possibility of sharing the substation site to reduce the environmental impact will be considered.

In summary, the following are alternatives for proposed infrastructure:

- Internal roads,
- On-site substation,
- Power line corridor.

METHODOLOGY

The assessment is to be undertaken in two phases, a Scoping phase and an Impact Assessment phase. This report provides an EIA level assessment of the activity.

Assessment philosophy

Many parts of South Africa contain high levels of biodiversity at species and ecosystem level. At any single site there may be large numbers of species or high ecological complexity. Sites also vary in their natural character and uniqueness and the level to which they have been previously disturbed. Assessing the potential impacts of a proposed development often requires evaluating the conservation value of a site relative to other natural areas and relative to the national importance of the site in terms of biodiversity conservation. A simple approach to evaluating the relative importance of a site includes assessing the following:

- Is the site unique in terms of natural or biodiversity features?
- Is the protection of biodiversity features on the site of national/provincial importance?
- Would development of the site lead to contravention of any international, national or provincial legislation, policy, convention or regulation?

Thus, the general approach adopted for this type of study is to identify any critical biodiversity issues that may lead to the decision that the proposed project cannot take place, i.e. to specifically focus on red flags and/or potential fatal flaws. Biodiversity issues are assessed by documenting whether any important biodiversity features occur on site, including species, ecosystems or processes that maintain ecosystems and/or species. These can be organised in a hierarchical fashion, as follows:

Species

1. threatened plant species
2. protected trees
3. threatened animal species

Ecosystems

1. threatened ecosystems
2. protected ecosystems
3. critical biodiversity areas
4. areas of high biodiversity
5. centres of endemism

Processes

1. corridors
2. mega-conservancy networks
3. rivers and wetlands
4. important topographical features

It is not the intention to provide comprehensive lists of all species that occur on site, since most of the species on these lists are usually common or widespread species. Rare, threatened, protected and conservation-worthy species and habitats are considered to be the highest priority, the presence of which are most likely to result in significant negative impacts on the ecological environment. The focus on national and provincial priorities and critical biodiversity issues is in line with National legislation protecting environmental and biodiversity

resources, including, but not limited to the following which ensure protection of ecological processes, natural systems and natural beauty as well as the preservation of biotic diversity in the natural environment:

1. Environment Conservation Act (Act 73 of 1989)
2. National Environmental Management Act, 1998 (NEMA) (Act 107 of 1998)
3. National Environmental Management Biodiversity Act, 2004. (Act 10 Of 2004)

Species of conservation concern

There are two types of species of concern for the site under investigation, (i) those listed by conservation authorities as being on a Red List and are therefore considered to be at risk of extinction, and (ii) those listed as protected according to National and/or Provincial legislation.

Red List plant species

Determining the conservation status of a species is required in order to identify those species that are at greatest risk of extinction and, therefore, in most need of conservation action. South Africa has adopted the IUCN Red List Categories and Criteria to provide an objective, rigorous, scientifically founded system to identify Red List species. A published list of the Red List species of South African plants (Raimondo et al. 2009) contains a list of all species that are considered to be at risk of extinction. This list is updated regularly to take new information into account, but these are not published in book/paper format. Updated assessments are provided on the SANBI website (<http://redlist.sanbi.org/>). According to the website of the Red List of Southern African Plants (<http://redlist.sanbi.org/>), *the conservation status of plants indicated on the Red List of South African Plants Online represents the status of the species within South Africa's borders. This means that when a species is not endemic to South Africa, only the portion of the species population occurring within South Africa has been assessed. The global conservation status, which is a result of the assessment of the entire global range of a species, can be found on the International Union for the Conservation of Nature (IUCN) Red List of Threatened Species: <http://www.iucnredlist.org>.* The South African assessment is used in this study.

The purpose of listing Red List species is to provide information on the potential occurrence of species at risk of extinction in the study area that may be affected by the proposed infrastructure. Species appearing on these lists can then be assessed in terms of their habitat requirements in order to determine whether any of them have a likelihood of occurring in habitats that may be affected by the proposed infrastructure.

Lists were compiled specifically for any species at risk of extinction (Red List species) previously recorded in the area. Historical occurrences of threatened plant species were obtained from the South African National Biodiversity Institute (<http://posa.sanbi.org>) for the quarter degree square/s within which the study area is situated. Habitat information for each species was obtained from various published sources. The probability of finding any of these species was then assessed by comparing the habitat requirements with those habitats that were found, during the field survey of the site, to occur there.

Protected trees

Regulations published for the National Forests Act (Act 84 of 1998) as amended, provide a list of protected tree species for South Africa. The species on this list were assessed in order to determine which protected tree species have a geographical distribution that coincides with the study area and habitat requirements that may be met by available habitat in the study area. The distribution of species on this list was obtained from published sources (e.g. van Wyk & van Wyk 1997) and from the SANBI Biodiversity Information System website

(<http://sibis.sanbi.org/>) for quarter degree grids in which species have been previously recorded. Species that have been recorded anywhere in proximity to the site (within 100 km), or where it is considered possible that they could occur there, were listed and were considered as being at risk of occurring there. The site was searched for these species during the field survey and any individuals or concentrations noted.

Other protected species

National legislation was evaluated in order to provide lists of any plant or animal species that have protected status. The most important legislation is the following:

- *National Environmental Management: Biodiversity Act (Act No 10 of 2004)*

This legislation contains lists of species that are protected. These lists were scanned in order to identify any species that have a geographical range that includes the study area and habitat requirements that are met by those found on site. These species were searched for within suitable habitats on site or, where relevant, it was stated that it was considered possible that they could occur on site.

There is additional legislation that provides lists of protected species, but the legislation to which these are attached deal primarily with harvesting or trade in listed species and do not specifically address transformational threats to habitat or individuals. This includes the following legislation:

- *CITES: Convention on the Trade in Endangered Species of Wild Fauna and Flora.*

Red List animal species

Lists of threatened animal species that have a geographical range that includes the study area were obtained from literature sources (for example, Alexander & Marais 2007, Branch 1988, 2001, du Preez & Carruthers 2009, Friedmann & Daly 2004, Mills & Hes 1997, Monadjem et al. 2010). The likelihood of any of them occurring was evaluated on the basis of habitat preference and habitats available at each of the proposed sites. The three parameters used to assess the probability of occurrence for each species were as follows:

- *Habitat requirements:* most Red Data animals have very specific habitat requirements and the presence of these habitat characteristics within the study area were assessed;
- *Habitat status:* in the event that available habitat is considered suitable for these species, the status or ecological condition was assessed. Often, a high level of degradation of a specific habitat type will negate the potential presence of Red Data species (especially wetland-related habitats where water-quality plays a major role); and
- *Habitat linkage:* movement between areas used for breeding and feeding purposes forms an essential part of ecological existence of many species. The connectivity of the study area to these surrounding habitats and adequacy of these linkages are assessed for the ecological functioning Red Data species within the study area.

Species probability of occurrence

Some species of plants may be cryptic, difficult to find, rare, ephemeral or generally not easy to spot while undertaking a survey of a large area. An assessment of the possibility of these species occurring there was therefore provided. For all threatened or protected flora that occur in the general geographical area of the site, a rating of the likelihood of it occurring on site is given as follows:

- **LOW:** no suitable habitats occur on site / habitats on site do not match habitat description for species;
- **MEDIUM:** habitats on site match general habitat description for species (e.g. karoo shrubland), but detailed microhabitat requirements (e.g. mountain shrubland on

shallow soils overlying sandstone) are absent on the site or are unknown from the descriptions given in the literature or from the authorities;

- **HIGH**: habitats found on site match very strongly the general and microhabitat description for the species (e.g. mountain shrubland on shallow soils overlying sandstone);
- **DEFINITE**: species found in habitats on site.

Habitat sensitivity

The purpose of producing a habitat sensitivity map is to provide information on the location of potentially sensitive features in the study area. This was compiled by taking the following into consideration:

1. The general status of the vegetation of the study area was derived by compiling a landcover data layer for the study area (*sensu* Fairbanks et al. 2000) using available satellite imagery and aerial photography. From this it can be seen which areas are transformed versus those that are still in a natural status.
2. Various provincial, regional or national level conservation planning studies have been undertaken in the area, e.g. the National Spatial Biodiversity Assessment (NSBA). The mapped results from these were taken into consideration in compiling the habitat sensitivity map.
3. Habitats in which various species of plants or animals occur that may be protected or are considered to have high conservation status are considered to be sensitive.

An explanation of the different sensitivity classes is given in Table 1. Areas containing untransformed natural vegetation of conservation concern, high diversity or habitat complexity, Red List organisms or systems vital to sustaining ecological functions are considered potentially sensitive. In contrast, any transformed area that has no importance for the functioning of ecosystems is considered to potentially have low sensitivity.

Table 1: Explanation of sensitivity ratings.

Sensitivity	Factors contributing to sensitivity	Example of qualifying features
VERY HIGH	<p>Indigenous natural areas that are highly positive for <u>any</u> of the following:</p> <ul style="list-style-type: none"> • presence of threatened species (Critically Endangered, Endangered, Vulnerable) and/or habitat critical for the survival of populations of threatened species. • <u>High</u> conservation status (low proportion remaining intact, highly fragmented, habitat for species that are at risk). • <u>Protected</u> habitats (areas protected according to national / provincial legislation, e.g. National Forests Act, Draft Ecosystem List of NEM:BA, Integrated Coastal Zone Management Act, Mountain Catchment Areas Act, Lake Areas Development Act) <p>And may also be positive for the following:</p> <ul style="list-style-type: none"> • <u>High</u> intrinsic biodiversity value (<u>high</u> species richness and/or turnover, unique ecosystems) 	<ul style="list-style-type: none"> • CBA 1 areas. • Remaining areas of vegetation type listed in Draft Ecosystem List of NEM:BA as Critically Endangered, Endangered or Vulnerable. • Protected forest patches. • Confirmed presence of populations of threatened species.

Sensitivity	Factors contributing to sensitivity	Example of qualifying features
	<ul style="list-style-type: none"> • <u>High</u> value ecological goods & services (e.g. water supply, erosion control, soil formation, carbon storage, pollination, refugia, food production, raw materials, genetic resources, cultural value) • <u>Low</u> ability to respond to disturbance (low resilience, dominant species very old). 	
HIGH	<p>Indigenous natural areas that are positive for any of the following:</p> <ul style="list-style-type: none"> • <u>High</u> intrinsic biodiversity value (<u>moderate/high</u> species richness and/or turnover). • presence of habitat highly suitable for threatened species (Critically Endangered, Endangered, Vulnerable species). • <u>Moderate</u> ability to respond to disturbance (<u>moderate</u> resilience, dominant species of intermediate age). • <u>Moderate</u> conservation status (moderate proportion remaining intact, moderately fragmented, habitat for species that are at risk). • <u>Moderate to high</u> value ecological goods & services (e.g. water supply, erosion control, soil formation, carbon storage, pollination, refugia, food production, raw materials, genetic resources, cultural value). <p>And may also be positive for the following:</p> <ul style="list-style-type: none"> • <u>Protected</u> habitats (areas protected according to national / provincial legislation, e.g. National Forests Act, Draft Ecosystem List of NEM:BA, Integrated Coastal Zone Management Act, Mountain Catchment Areas Act, Lake Areas Development Act) 	<ul style="list-style-type: none"> • CBA 2 "critical biodiversity areas". • Habitat where a threatened species could potentially occur (habitat is suitable, but no confirmed records). • Confirmed habitat for species of lower threat status (near threatened, rare). • Habitat containing individuals of extreme age. • Habitat with low ability to recover from disturbance. • Habitat with exceptionally high diversity (richness or turnover). • Habitat with unique species composition and narrow distribution. • Ecosystem providing high value ecosystem goods and services.
MEDIUM-HIGH	Indigenous natural areas that are positive for <u>one</u> or <u>two</u> of the factors listed above, but not a combination of factors.	<ul style="list-style-type: none"> • CBA 2 "corridor areas". • Habitat with high diversity (richness or turnover). • Habitat where a species of lower threat status (e.g. (near threatened, rare) could potentially occur (habitat is suitable, but no confirmed records).
MEDIUM	Other indigenous natural areas in which factors listed above are of no particular concern. May also include natural buffers around ecologically	

Sensitivity	Factors contributing to sensitivity	Example of qualifying features
	sensitive areas and natural links or corridors in which natural habitat is still ecologically functional.	
MEDIUM-LOW	Degraded or disturbed indigenous natural vegetation.	
LOW	No natural habitat remaining.	

Any natural vegetation within which there are features of conservation concern will be classified into one of the high sensitivity classes (MEDIUM-HIGH, HIGH or VERY HIGH. The difference between these three high classes is based on a combination of factors and can be summarised as follows:

1. Areas classified into the VERY HIGH class are vital for the survival of species or ecosystems. They are either known sites for threatened species or are ecosystems that have been identified as being remaining areas of vegetation of critical conservation importance. CBA1 areas would qualify for inclusion into this class.
2. Areas classified into the HIGH class are of high biodiversity value, but do not necessarily contain features that would put them into the VERY HIGH class. For example, a site that is known to contain a population of a threatened species would be in the VERY HIGH class, but a site where a threatened species could potentially occur (habitat is suitable), but it is not known whether it does occur there or not, is classified into the HIGH sensitivity class. The class also includes any areas that are not specifically identified as having high conservation status, but have high local species richness, unique species composition, low resilience or provide very important ecosystem goods and services. CBA2 "irreplaceable biodiversity areas" would qualify for inclusion into this class, if there were no other factors that would put them into the highest class.
3. Areas classified into the MEDIUM-HIGH sensitivity class are natural vegetation in which there are one or two features that make them of biodiversity value, but not to the extent that they would be classified into one of the other two higher categories. CBA2 "corridor areas" would qualify for inclusion into this class.

Limitations and exclusions

- Red List species are, by their nature, usually very rare and difficult to locate. Compiling the list of species that could potentially occur in an area is limited by the paucity of collection records that make it difficult to predict whether a species may occur in an area or not. The methodology used in this assessment is designed to reduce the risks of omitting any species, but it is always possible that a species that does not occur on a list may be unexpectedly located in an area.
- This study excludes invertebrates.

Impact assessment methodology

The Impact Assessment Methodology assists in evaluating the overall effect of a proposed activity on the environment. The determination of the effect of an environmental impact on an environmental parameter is determined through a systematic analysis of the various components of the impact. This is undertaken using information that is available to the environmental practitioner through the process of the environmental impact assessment. The

impact evaluation of predicted impacts was undertaken through an assessment of the significance of the impacts.

Determination of Significance of Impacts

Significance is determined through a synthesis of impact characteristics which include context and intensity of an impact. Context refers to the geographical scale i.e. site, local, national or global whereas Intensity is defined by the severity of the impact e.g. the magnitude of deviation from background conditions, the size of the area affected, the duration of the impact and the overall probability of occurrence. Significance is calculated as shown in Table 2.

Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The total number of points scored for each impact indicates the level of significance of the impact.

Impact Rating System

Impact assessment must take account of the nature, scale and duration of effects on the environment whether such effects are positive (beneficial) or negative (detrimental). Each issue / impact is also assessed according to the project stages:

- planning
- construction
- operation
- decommissioning

Where necessary, the proposal for mitigation or optimisation of an impact should be detailed.

The rating system is applied to the potential impact on the receiving environment and includes an objective evaluation of the mitigation of the impact. Impacts have been consolidated into one rating. In assessing the significance of each issue the following criteria (including an allocated point system) is used:

Table 1: Description of terms

NATURE		
A brief description of the impact of environmental parameter being assessed in the context of the project. This criterion includes a brief written statement of the environmental aspect being impacted upon by a particular action or activity.		
GEOGRAPHICAL EXTENT		
This is defined as the area over which the impact will be expressed. Typically, the severity and significance of an impact have different scales and as such bracketing ranges are often required. This is often useful during the detailed assessment of a project in terms of further defining the determined.		
1	Site	The impact will only affect the site
2	Local/district	Will affect the local area or district
3	Province/region	Will affect the entire province or region
4	International and National	Will affect the entire country
PROBABILITY		
This describes the chance of occurrence of an impact		
1	Unlikely	The chance of the impact occurring is extremely low (Less than a 25% chance of occurrence).
2	Possible	The impact may occur (Between a 25% to 50% chance of occurrence).
3	Probable	The impact will likely occur (Between a 50% to 75% chance of occurrence).
4	Definite	Impact will certainly occur (Greater than a 75% chance of occurrence).

REVERSIBILITY		
This describes the degree to which an impact on an environmental parameter can be successfully reversed upon completion of the proposed activity.		
1	Completely reversible	The impact is reversible with implementation of minor mitigation measures
2	Partly reversible	The impact is partly reversible but more intense mitigation measures are required.
3	Barely reversible	The impact is unlikely to be reversed even with intense mitigation measures.
4	Irreversible	The impact is irreversible and no mitigation measures exist.
IRREPLACEABLE LOSS OF RESOURCES		
This describes the degree to which resources will be irreplaceably lost as a result of a proposed activity.		
1	No loss of resource.	The impact will not result in the loss of any resources.
2	Marginal loss of resource	The impact will result in marginal loss of resources.
3	Significant loss of resources	The impact will result in significant loss of resources.
4	Complete loss of resources	The impact is result in a complete loss of all resources.
DURATION		
This describes the duration of the impacts on the environmental parameter. Duration indicates the lifetime of the impact as a result of the proposed activity.		
1	Short term	The impact and its effects will either disappear with mitigation or will be mitigated through natural process in a span shorter than the construction phase (0 – 1 years), or the impact and its effects will last for the period of a relatively short construction period and a limited recovery time after construction, thereafter it will be entirely negated (0 – 2 years).
2	Medium term	The impact and its effects will continue or last for some time after the construction phase but will be mitigated by direct human action or by natural processes thereafter (2 – 10 years).
3	Long term	The impact and its effects will continue or last for the entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter (10 – 50 years).
4	Permanent	The only class of impact that will be non-transitory. Mitigation either by man or natural process will not occur in such a way or such a time span that the impact can be considered transient (Indefinite).
CUMULATIVE EFFECT		
This describes the cumulative effect of the impacts on the environmental parameter. A cumulative effect/impact is an effect which in itself may not be significant but may become significant if added to other existing or potential impacts emanating from other similar or diverse activities as a result of the project activity in question.		
1	Negligible Cumulative Impact	The impact would result in negligible to no cumulative effects
2	Low Cumulative Impact	The impact would result in insignificant cumulative effects
3	Medium Cumulative Impact	The impact would result in minor cumulative effects
4	High Cumulative Impact	The impact would result in significant cumulative effects
INTENSITY / MAGNITUDE		
Describes the severity of an impact.		
1	Low	Impact affects the quality, use and integrity of the system/component in a way that is barely perceptible.
2	Medium	Impact alters the quality, use and integrity of the

		system/component but system/ component still continues to function in a moderately modified way and maintains general integrity (some impact on integrity).
3	High	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component is severely impaired and may temporarily cease. High costs of rehabilitation and remediation.
4	Very high	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component permanently ceases and is irreversibly impaired (system collapse). Rehabilitation and remediation often impossible. If possible rehabilitation and remediation often unfeasible due to extremely high costs of rehabilitation and remediation.
SIGNIFICANCE		
<p>Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. This describes the significance of the impact on the environmental parameter. The calculation of the significance of an impact uses the following formula:</p> <p>(Extent + probability + reversibility + irreplaceability + duration + cumulative effect) x magnitude/intensity.</p> <p>The summation of the different criteria will produce a non weighted value. By multiplying this value with the magnitude/intensity, the resultant value acquires a weighted characteristic which can be measured and assigned a significance rating.</p>		
6 to 28	Negative Low impact	The anticipated impact will have negligible negative effects and will require little to no mitigation.
6 to 28	Positive Low impact	The anticipated impact will have minor positive effects.
29 to 50	Negative Medium impact	The anticipated impact will have moderate negative effects and will require moderate mitigation measures.
29 to 50	Positive Medium impact	The anticipated impact will have moderate positive effects.
51 to 73	Negative High impact	The anticipated impact will have significant effects and will require significant mitigation measures to achieve an acceptable level of impact.
51 to 73	Positive High impact	The anticipated impact will have significant positive effects.
74 to 96	Negative Very high impact	The anticipated impact will have highly significant effects and are unlikely to be able to be mitigated adequately. These impacts could be considered "fatal flaws".
74 to 96	Positive Very high impact	The anticipated impact will have highly significant positive effects.

Table 2: Impact table format

IMPACT TABLE FORMAT	
<i>Environmental parameter</i>	<i>A brief description of the environmental aspect likely to be affected by the proposed activity e.g. Surface water</i>
<i>Issue/Impact/Environmental Effect/Nature</i>	<i>A brief description of the nature of the impact that is likely to affect the environmental aspect as a result of the proposed activity e.g. alteration of aquatic biota The environmental impact that is likely to positively or</i>

	<i>negatively affect the environment as a result of the proposed activity e.g. oil spill in surface water</i>	
<i>Extent</i>		
<i>Probability</i>	<i>A brief description indicating the chances of the impact occurring</i>	
<i>Reversibility</i>	<i>A brief description of the ability of the environmental components recovery after a disturbance as a result of the proposed activity</i>	
<i>Irreplaceable loss of resources</i>	<i>A brief description of the degree in which irreplaceable resources are likely to be lost</i>	
<i>Duration</i>	<i>A brief description of the amount of time the proposed activity is likely to take to its completion</i>	
<i>Cumulative effect</i>	<i>A brief description of whether the impact will be exacerbated as a result of the proposed activity</i>	
<i>Intensity/magnitude</i>	<i>A brief description of whether the impact has the ability to alter the functionality or quality of a system permanently or temporarily</i>	
<i>Significance rating</i>	<i>A brief description of the importance of an impact which in turn dictates the level of mitigation required</i>	
	Pre-mitigation impact rating	Post-mitigation impact rating
Extent	4	1
Probability	4	1
Reversibility	4	1
Irreplaceable loss	4	1
Duration	4	1
Cumulative effect	4	1
Intensity/magnitude	4	1
Significance rating	-96 (high negative)	-6 (low negative)
Mitigation measures	<i>Outline/explain the mitigation measures to be undertaken to ameliorate the impacts that are likely to arise from the proposed activity. Describe how the mitigation measures have reduced/enhanced the impact with relevance to the impact criteria used in analyzing the significance. These measures will be detailed in the EMPR.</i>	

DESKTOP DESCRIPTION OF STUDY AREA

Location

The study site is situated approximately 9 km south of Copperton and approximately 60 km south-west of the town of Prieska within the Northern Cape (Figure 3). The site falls within the quarter degree grid 3022AB. It falls within the Siyathemba Local Municipality that forms part of the Pixley ka Seme District Municipality. The project includes the following farms:

- Portion 3 of the farm Klipgatspan No. 117 (solar facility)
- Portion 4 of the farm Klipgatspan No. 117 (power line)

The project site near Copperton has been identified through pre-feasibility studies conducted by BioTherm based on an estimation of the solar energy resource as well as weather, dust, dirt, and surface albedo. Grid connection and land availability were also important initial considerations.

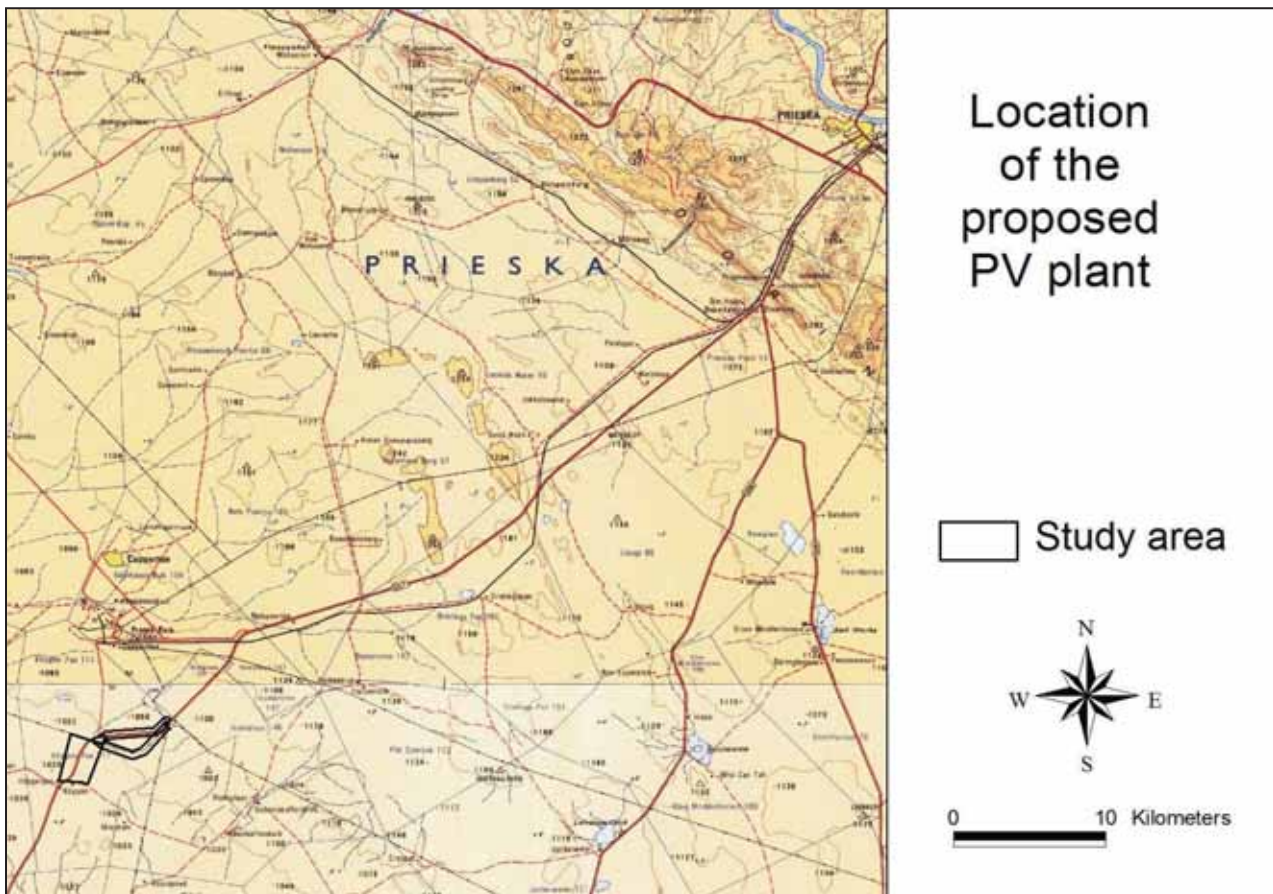


Figure 3: Location of the study area in relation to Prieska.

Topography

The study site is situated in a relatively flat landscape. The landscape slopes gently upwards from west to east and from south to north. The south-west corner of the study area is at approximately 1030 m above sea level and the north-west corner is at approximately 1050 m above sea level, a height gain of only 20 m over a distance of 3.2 km, a gradient of shallower than 1:200. The Kronos substation to the east of the proposed PV plant locations is at approximately 1085 m above sea level.

There two drainage areas in the project study area.

Land types and soils

Detailed soil information is not available for broad areas of the country. As a surrogate, landtype data was used to provide a general description of soils in the study area (landtypes are areas with largely uniform soils, topography and climate). There is a single land type in the study area, the Ah landtype (Land Type Survey Staff, 1987).

The A-group of land types refer to yellow and red soils without water tables belonging to one or more of the following soil forms: Inanda, Kranskop, Magwa, Hutton, Griffin, Clovelly. The Ah landtype consists of red and yellow, high base status soils, < 300 mm deep with no dunes (MacVicar et al. 1974). The soils on site are therefore expected to be relatively shallow, although probably reasonably fertile.

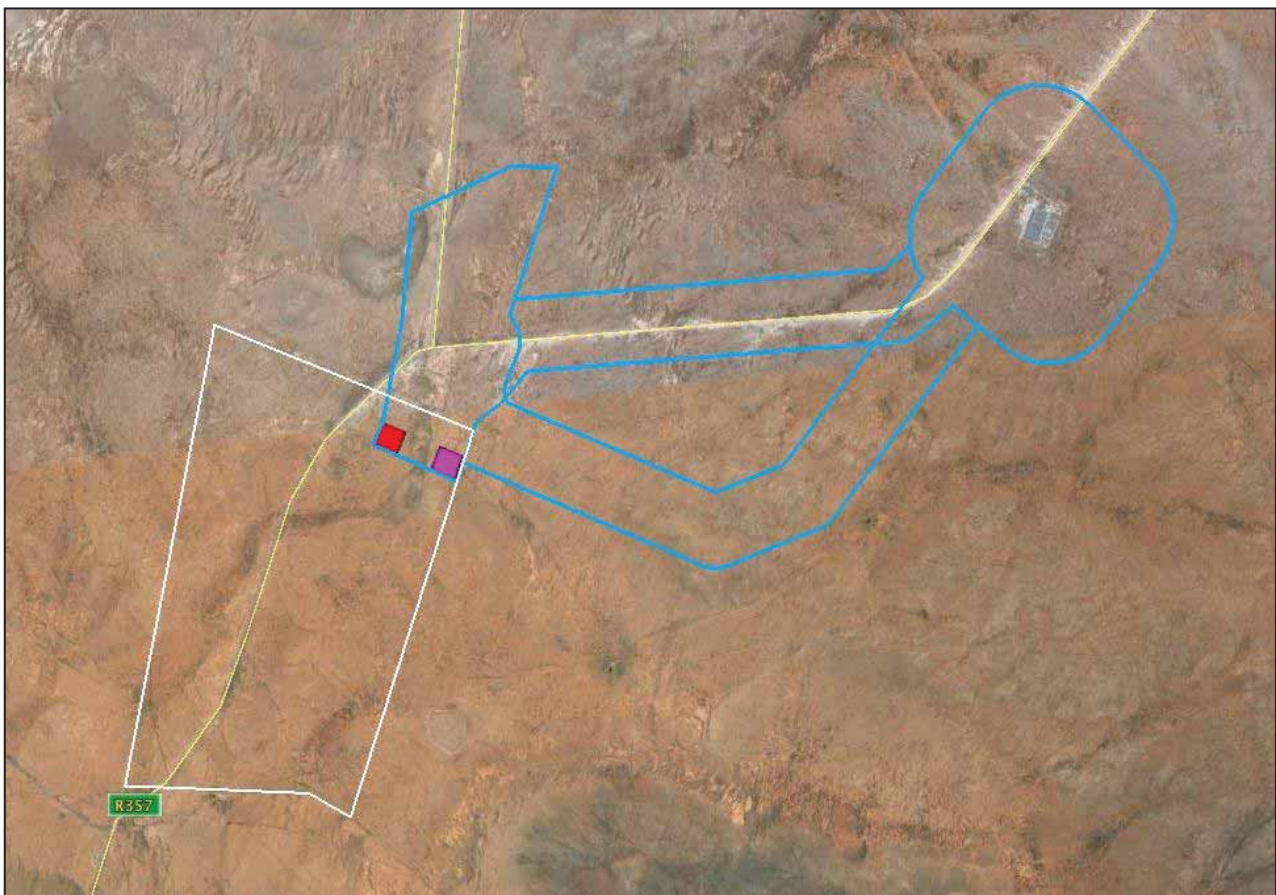


Figure 4: Aerial image of the study area.

Climate

The climate is arid to semi-arid. Rainfall occurs from November to April, but peaks in mid- to late summer (February / March). Mean annual rainfall is 140 mm to 170 mm per year. All areas with less than 400 mm rainfall are considered to be arid. The study area can therefore be considered to be arid to very arid.

Landuse and landcover of the study area

A landcover map of the study area (Fairbanks *et al.* 2000) indicates that the study consists of natural vegetation, classified as "shrubland and low fynbos". The 1:50 000 topocadastral map of the site and a Google image of the site (Figure 4) show essentially the same pattern. There is a main road traversing the study area and the Eskom Kronos Substation. These patterns were confirmed during the field survey of the site. Vegetation typical of the site is shown in Plate 1.

Broad vegetation types of the region

The sites fall within the Nama-Karoo Biome (Rutherford & Westfall 1986, Mucina & Rutherford 2006). The most recent and detailed description of the vegetation of this region is part of a national map (Mucina, Rutherford & Powrie, 2005; Mucina *et al.* 2006). This map shows three



Plate 1: Typical vegetation structure within the study area.

vegetation types occurring within the area of interest (Figure 3), of which only two are affected directly by the proposed project alternatives. These vegetation types are described in more detail below.

Bushmanland Basin Shrubland

This vegetation type occurs in the Northern Cape Province in the Large Bushmanland Basin centred on Brandvlei and Vanwyksvlei, from Granaatboskolk in the west to Copperton in the east and Kenhardt in the north to Williston in the south (Mucina et al. 2006). It is found on slightly irregular plains. The vegetation is a dwarf shrubland dominated by a mixture of low sturdy, spiny and sometimes succulent shrubs (*Rhigozum*, *Salsola*, *Pentzia* and *Erioccephalus*), white grasses and, in years of high rainfall, abundant annuals, such as *Gazania* and *Leysera*. In comparison to the bordering Bushmanland Arid Grassland, the vegetation of this unit shows increased presence of shrubs and plant indicators of high salt status of soils.

Bushmanland Vloere

This is the vegetation of the salt pans and broad riverbeds of the central Bushmanland basin (Mucina et al. 2006). It occurs in areas of flat and very even surfaces of pans and broad bottoms of intermittent dry rivers. Typically, the central parts are devoid of vegetation. Around this is loosely patterned scrub dominated by *Rhigozum trichotomum* and various species of *Salsola* and *Lycium*, with a mixture of karroid dwarf shrubs. In places loose thickets of *Parkinsonia africana*, *Lebeckia linearifolia* and *Acacia karroo* may be found.

Bushmanland Arid Grassland

This vegetation type occurs on extensive, relatively flat plains and is sparsely vegetated by

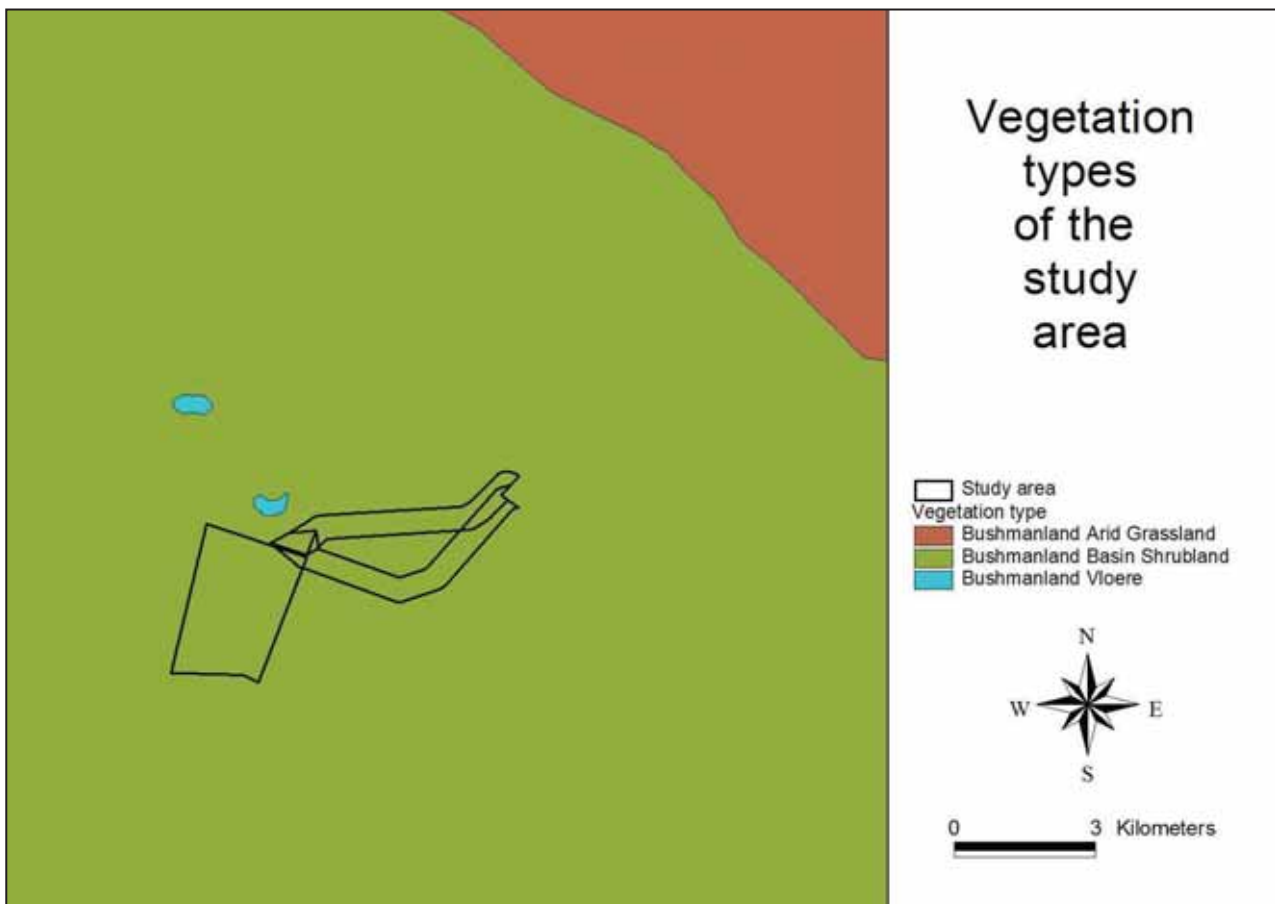


Figure 5: Vegetation types of the project study area.

tussock grasses, including *Stipagrostis ciliata*, *Aristida adscensionis*, *Aristida congesta*, *Enneapogon desvauxii*, *Eragrostis nindensis*, *Schmidtia kalahariensis* and *Stipagrostis obtusa*. In some years after good rains there are abundant displays of annual herbs (Mucina et al. 2006). There are no known endemics in this vegetation type (Mucina et al. 2006), but does contain endemics belonging to the Griqualand West or Gariep Centres of Endemism (van Wyk & Smith 2001), namely *Aizoon asbestinum*, *Maerua gilgii*, *Ruschia muricata* and *Aloe gariensis*. The vegetation type also contains the protected tree species, *Acacia erioloba* (camel thorn), *Acacia haematoxylon* (grey camel thorn) and *Boscia albitrunca* (shepherd's bush).

Conservation status of broad vegetation types

On the basis of a recently established approach used at national level by SANBI (Driver et al. 2005), vegetation types can be categorised according to their conservation status which is, in turn, assessed according to the degree of transformation relative to the expected extent of each vegetation type. The status of a habitat or vegetation type is based on how much of its original area still remains intact relative to various thresholds. The original extent of a vegetation type is as presented in the most recent national vegetation map (Mucina, Rutherford & Powrie 2005) and is the extent of the vegetation type in the absence of any historical human impact. On a national scale the thresholds are as depicted in Table 1, as determined by best available scientific approaches (Driver et al. 2005).

The level at which an ecosystem becomes Critically Endangered differs from one ecosystem to another and varies from 16% to 36% (Driver et al. 2005).

All of the vegetation types occurring in the study area (Table 2) are classified as Least Threatened (Driver et al. 2005; Mucina et al., 2006). None of the vegetation types are flagged therefore as being of conservation concern.

Table 1: Determining ecosystem status (from Driver et al. 2005). *BT = biodiversity target (the minimum conservation requirement).

Habitat remainin g (%)	80–100	least threatened	LT
	60–80	vulnerable	VU
	*BT–60	endangered	EN
	0–*BT	critically endangered	CR

Table 2: Conservation status of different vegetation types occurring in the study area, according to Driver et al. 2005 and Mucina et al. 2005.

Vegetation Type	Target (%)	Conserved (%)	Transformed (%)	Conservation status	
				Driver et al. 2005; Mucina et al., 2006	Draft Ecosystem List (NEMBA)
Bushmanland Basin Shrubland	21	0	1	Least Threatened	Not listed
Bushmanland Vloere	24	0	2	Least Threatened	Not listed
Bushmanland Arid Grassland	21	1	1	Least Threatened	Not listed

Biodiversity Conservation Plans

There are no fine-scale biodiversity conservation plans for the study area (bgis.sanbi.org). According to SANBI, "Presently BGIS has no Systematic Biodiversity Conservation Plan for the Northern Cape other than the Namakwa District Biodiversity Sector Plan therefore the Biodiversity Summaries Map is used in its place for land use decision support in the province." The Biodiversity Summary Map for the Pixley ka Seme District Municipality shows all natural vegetation within the municipal area, except along the Orange River, to be Least Threatened and no areas mapped as of particular biodiversity concern.

Proposed protected areas

According to the National Parks Area Expansion Strategy (NPAES), there is an area 15 km to the east of the project study area that has been identified as priority areas for inclusion in future protected areas. This particular component of the landscape is considered to be of high biodiversity value by National Parks, but the proposed project does not affect this area at all.

Red List plant species of the study area

Lists of plant species of conservation concern previously recorded in the quarter degree grids in which the study area is situated were obtained from the South African National Biodiversity Institute. These are listed in Appendix 1. Additional species that could occur in similar habitats, as determined from database searches and literature sources, but have not been recorded in these grids are also listed.

There is one species that may occur in the study area, the succulent, *Hoodia officinalis* subsp. *officinalis*. This species is listed as Near Threatened (see Table 3 for explanation of categories). The species is found in Desert, Nama Karoo and Succulent Karoo and is found inside bushes in flat or gently sloping areas. The species has been recorded in two neighbouring grids and the possibility of it occurring in the study area is therefore considered to be moderate to high.

Table 3: Explanation of IUCN Ver. 3.1 categories (IUCN, 2001), and Orange List categories (Victor & Keith, 2004).

IUCN / Orange List category	Definition	Class
EX	Extinct	Extinct
CR	Critically Endangered	Red List
EN	Endangered	Red List
VU	Vulnerable	Red List
NT	Near Threatened	Orange List
Declining	Declining taxa	Orange List
Rare	Rare	Orange List
Critically Rare	Rare: only one subpopulation	Orange List
Rare-Sparse	Rare: widely distributed but rare	Orange List
DDD	Data Deficient: well known but not enough information for assessment	Orange List
DDT	Data Deficient: taxonomic problems	Data Deficient
DDX	Data Deficient: unknown species	Data Deficient

Red List animal species of the study area

All Red List vertebrates (mammals, birds, reptiles, amphibians) that could occur in the study

area are listed in Appendix 2.

There are five mammal species of low conservation concern that could occur in available habitats in the study area. These are Geoffroy's Horseshoe Bat, Darling's Horseshoe Bat, Leseuer's Wing-gland Bat, the Honey Badger and Littledale's Whistling Rat. All of these species are classified nationally as near threatened (NT), but globally as Least Concern. They are, therefore, of relatively low conservation concern in comparison to more threatened species found in other parts of the country. The Honey Badger protected under the National Environmental Management: Biodiversity Act and any impacts on a specimen of this species or that may negatively affect the survival of the species would require a permit. Only the Honey Badger and Littledale's Whistling Rat were considered likely to be found on site.

The Giant Bullfrog is the only amphibian species with a distribution that includes the study area and which could occur on any of the sites. This species is classified as Least Concern globally and Near threatened in South Africa. It is, however, protected under the National Environmental Management: Biodiversity Act and any impacts on a specimen of this species or that may negatively affect the survival of the species would require a permit.

There are no reptile species of conservation concern that have a distribution that includes the study area.

There are seven bird species of conservation concern that could potentially occur on site, as follows: Kori Bustard, Ludwig's Bustard, Blue Crane, Martial Eagle, Lanner Falcon, Lesser Kestrel and Secretarybird. Four of these species (Kori Bustard, Ludwig's Bustard, Blue Crane and Secretarybird) are potentially vulnerable to impacts from overhead power lines.

Protected plants (National Environmental Management: Biodiversity Act)

Plant species protected under the National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004) are listed in Appendix 4. Two plant species that appear on this list that could potentially occur in the general region, although they have not previously been recorded in the grids of the study area, are *Hoodia gordonii* and *Harpagophytum procumbens*.

Hoodia gordonii is found in Namibia, Botswana, Angola and the dry margins of the summer rainfall region of South Africa, including parts of the Western Cape, Northern Cape and Free State Provinces. It occurs in a wide variety of arid habitats from coastal to mountainous, also on gentle to steep shale ridges, found from dry, rocky places to sandy spots in riverbeds. It has not been previously recorded in this grid, but has been recorded in the grid to the north-east. It is considered likely that this species could occur on site due to habitat conditions found there relative to the species requirements.

Harpagophytum procumbens occurs in Angola, Botswana, Mozambique, Namibia, South Africa, Zambia, and Zimbabwe. Within South Africa this species occurs in the Northern Cape, North West, Free State, and Limpopo Provinces and the largest populations are found in the communally owned areas of the North West Province and the north eastern parts of the Northern Cape. The species is found in well-drained sandy habitats in open savanna and woodlands. It has not been previously recorded in this grid, but has been recorded in the grids to the north. It is considered possible, but unlikely that this species could occur on site due to habitat conditions found there relative to the species requirements.

Protected plants (Northern Cape Nature Conservation Act, No. 9 of 2009)

The Act provides lists of protected species for the Province, which is very lengthy and includes a number of common species. According to Northern Cape Nature Conservation officials, a permit is required for the removal of any species on this list. Based on previous experience on projects in the Northern Cape Province, it must be assumed that a permit application will need to be undertaken and that it will include a variety of species found on site.

Protected trees

Tree species protected under the National Forest Act are listed in Appendix 3. The only one that has a geographical distribution that includes the study sites is *Boscia albitrunca* (Shepherd's Tree / Witgatboom / !Xhi). *Boscia albitrunca* (Shepherd's Tree / Witgatboom / !Xhi) occurs in semi-desert areas and bushveld, often on termitaria, but is common on sandy to loamy soils and calcrete soils. This species could potentially occur on site in areas affected by the proposed project.

Protected animals

There are a number of animal species protected according to the National Environmental Management: Biodiversity Act (Act No. 10 of 2004). According to this Act, "*a person may not carry out a restricted activity involving a specimen of a listed threatened or protected species without a permit issued in terms of Chapter 7*". Such activities include any that are "*of a nature that may negatively impact on the survival of a listed threatened or protected species*". This implies that any negative impacts on habitats in which populations of protected species occur or are dependent upon would be restricted according to this Act.

Those species protected according to the National Environmental Management: Biodiversity Act (Act No. 10 of 2004) that have a geographical distribution that includes the site are listed in Appendix 6, marked with the letter "N". This includes the following species: White Rhinoceros, Black Wildebeest, Oribi, Cheetah, Cape Clawless Otter, Black-footed Cat, Brown Hyaena, Serval, Spotted-necked Otter, Honey Badger, Leopard, Cape Fox, Southern African Hedgehog, Southern African Python, Giant Bullfrog, Blue Crane, Grey-crowned Crane, Martial Eagle, Cape Vulture, Lappet-faced Vulture.

Due to habitat and forage requirements and the fact that some species are restricted to game farms and/or conservation areas, only the Black-footed Cat, Honey Badger, Leopard, Cape Fox, Giant Bullfrog and some of the birds (Kori Bustard, Ludwig's Bustard, Blue Crane, Martial Eagle, Lesser Kestrel and Black Stork) have a likelihood of occurring on site. All of these species are mobile animals that are likely to move away in the event of any activities on site disturbing them. They are therefore unlikely to be affected by the proposed development of the solar power facility and associated infrastructure.

Important Bird Areas

The study area is not within an Important Bird Area (IBA). The nearest IBA is the Platberg-Karoo IBA, which is 150 km away to the east / south-east.

Watercourses

The study area contains some drainage areas that are low-lying parts of the landscape. These are visible on aerial imagery (see Figure 4) and are mapped in Figure 6. Wetlands, riparian zones and watercourses are defined in the National Water Act as a water resource and any activities that are contemplated that could affect the wetlands requires authorisation (Section 21 of the National Water Act of 1998). It is important that these areas are properly mapped and that impacts on them are kept to a minimum, if possible.

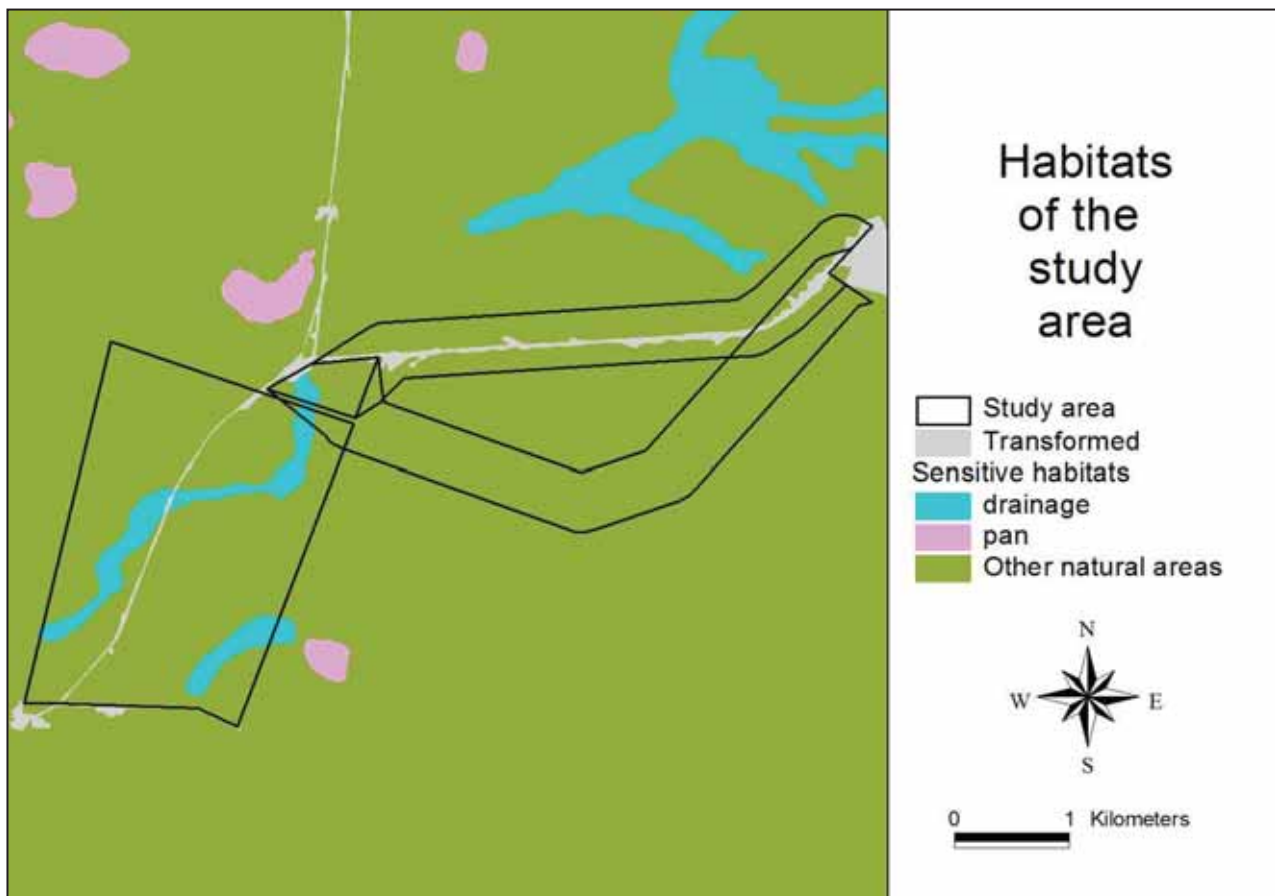


Figure 6: Main habitats of the study area.

FIELD OBSERVATIONS

The field survey was undertaken in early winter (7–8 May 2015), which is not ideal for assessing the general characteristics and condition of the study area. In addition, the season has been particularly dry and the vegetation had already been impacted by this factor. This made it particularly difficult to identify plant species, since many plants had lost their leaves and it is likely that cryptic species were not visible. This was not, however, considered to be a serious limitation for evaluating transformed versus natural occurrence of habitat nor for observing habitat differences in the field. It was only a limitation in terms of compiling checklists of species for different habitats.

Occurrence of natural habitat

Google imagery and, to a lesser extent, land cover maps, provide a relatively accurate indication of the location of natural habitat on site. The only areas that were found to be transformed or obviously degraded were associated with the roads passing through the study area, the existing Eskom substation and the mining activities some distance towards the north of the site. These transformed areas are shown in grey in Figure 6 (previous page). Field observations supported this mapping from imagery. The majority of the study area is therefore considered to be in a natural state.



Figure 7: Dry condition of habitat at time of field survey.

Condition of natural habitat

Due to the extremely dry condition of the natural vegetation, it was not possible to determine what the condition of the natural habitat was. However, the author has been to this area in the recent past and, at the time of that survey, the vegetation in the area was assessed as being in moderate to good condition. There were no indications to suggest that this condition has altered over the interim period of time. Vegetation structure appeared to be good across the entire study area, with no obvious bare patches or altered structure that could not be explained by habitat conditions.

Natural variation

Vegetation structure varied marginally across the site with an increase in stature and woodiness of plants within the low-lying pan area. Plains areas had relatively uniform vegetation structure that did not vary much from one side of the site to the other. Genera that were possible to identify in the field included *Eriocephalus*, *Salsola*, *Aptosimum* and *Pentzia*, which broadly agrees with the published descriptions for this vegetation type. The lowland pan was dominated by thorny, low, tangled shrubs, including *Rhigozum trichotomum*, *Asparagus burchellii* and a species of *Lycium* (see Figure 8). This is consistent with the published description for Bushmanland Vloere. The pan area also had deeper soils that had evidence of



Figure 9: Namaqua Sand Lizard in the study area.

surface water.

Species occurrence on site

A small number of fauna species were recorded in the field, including Bat-eared Fox, Sociable Weaver, Pied Crow, Gabar Goshawk, Verreaux's Eagle, Southern Pale Chanting Goshawk, Ostrich, Northern Black Korhaan, Karoo Korhaan, Namaqua Sand Lizard, Spotted Sand Lizard and Aardvark.



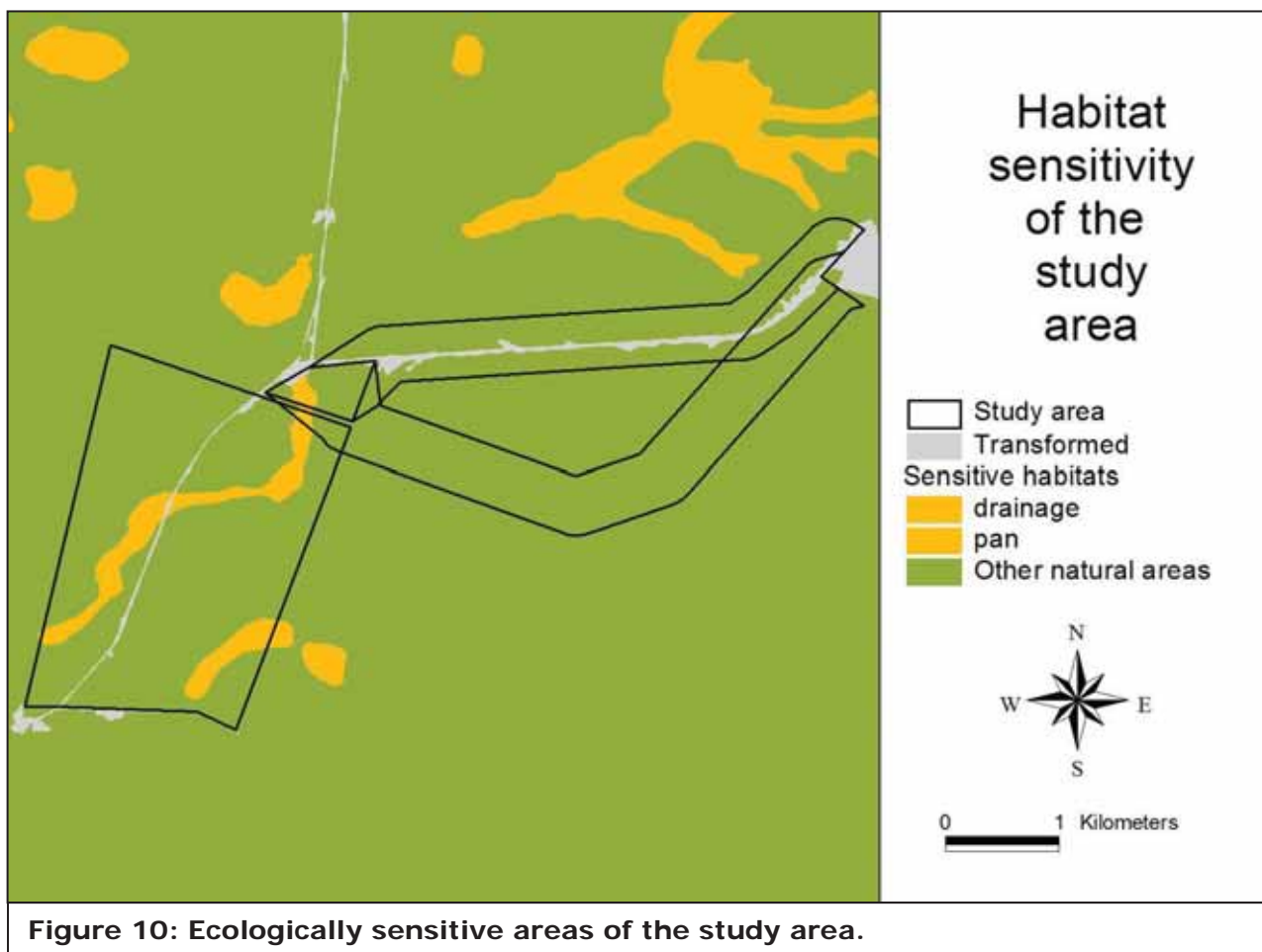
Figure 8: Linear zonation within drainage area.

IDENTIFICATION AND MAPPING OF SENSITIVE AREAS

The sensitivity assessment identifies those parts of the study area that have high conservation value or that may be sensitive to disturbance. Areas of potentially high sensitivity are shown in Figure 10. The information provided in the preceding sections was used to compile a map of remaining natural habitats and areas important for maintaining ecological processes in the study area. The only feature of potential concern that needs to be taken into account in order to evaluate sensitivity in the study area is the presence of the pan and shallow drainage areas. These represent ecological processes, including groundwater dynamics, hydrological processes, nutrient cycling and wildlife dispersal.

These factors have been taken into account in evaluating sensitivity within the study area. Watercourses are considered to be the most sensitive features on site. The sensitivity classification is as follows:

1. MEDIUM-HIGH: The drainage areas on site are classified as having medium-high sensitivity (see Figure 10). They are protected according to the National Water Act (Act 36 of 1998). Ecologically, they are areas that provide moderate value ecosystem goods and services.
2. MEDIUM: The majority of the study area is classified as having medium sensitivity (see Figure 10). These are areas of natural vegetation which harbour no particular features of conservation concern, except for habitat that is potentially suitable for five near threatened animal species and one near threatened plant species (none confirmed to occur on site).



3. LOW: Transformed areas are classified as having low sensitivity (see Figure 10). These are areas in which no intact natural habitat still remains.

ASSESSMENT OF IMPACTS

Description of potential impacts

Potential issues relevant to potential impacts on the ecology of the study area include the following:

- Impacts on biodiversity: this includes any impacts on populations of individual species of concern (flora and fauna), including protected species, and on overall species richness. This includes impacts on genetic variability, population dynamics, overall species existence or health and on habitats important for species of concern.
- Impacts on sensitive habitats: this includes impacts on any sensitive or protected habitats, including indigenous forest and/or woodland and wetland vegetation that leads to direct or indirect loss of such habitat.
- Impacts on ecosystem function: this includes impacts on any processes or factors that maintain ecosystem health and character, including the following:
 - disruption to nutrient-flow dynamics;
 - impedance of movement of material or water;
 - habitat fragmentation;
 - changes to abiotic environmental conditions;
 - changes to disturbance regimes, e.g. increased or decreased incidence of fire;
 - changes to successional processes;
 - effects on pollinators;
 - increased invasion by alien plants.

Changes to factors such as these may lead to a reduction in the resilience of plant communities and ecosystems or loss or change in ecosystem function.

- Secondary and cumulative impacts on ecology: this includes an assessment of the impacts of the proposed project taken in combination with the impacts of other known projects for the area or secondary impacts that may arise from changes in the social, economic or ecological environment.
- Impacts on the economic use of vegetation: this includes any impacts that affect the productivity or function of ecosystems in such a way as to reduce the economic value to users, e.g. reduction in grazing capacity, loss of harvestable products. It is a general consideration of the impact of a project on the supply of so-called ecosystem goods and services.

A number of direct risks to ecosystems that would result from **construction** of the proposed power line are as follows:

- Clearing of land for construction.
- Construction of access roads.
- Placement of power lines.
- Establishment of borrow and spoil areas.
- Chemical contamination of the soil by construction vehicles and machinery.
- Operation of construction camps.
- Storage of materials required for construction.

There are also risks associated with **operation** of the proposed facility, as follows:

- Maintenance of surrounding vegetation as part of management of the power line.
- Animal collisions with infrastructure, especially flying animals.
- Invasion of habitats by alien plants as a consequence of disturbance.

Potential issues for the general study area

A summary of the potential ecological issues for the study area is as follows:

- Presence of natural vegetation on site, although of low conservation priority.
- Potential presence of one plant species of concern, *Hoodia officinalis* subsp. *officinalis*, listed as Near Threatened.
- Potential presence of two protected plant species, *Hoodia gordonii* and *Harpagophytum procumbens*.
- Potential presence of one protected tree species, *Boscia albitrunca*.
- Presence of watercourses and drainage lines.
- Potential presence of the following animals of potential conservation concern:
 - Honey badger (NT)
 - Geoffroy's Horseshoe Bat (NT/LC)
 - Darling's Horseshoe Bat (NT)
 - Leseuer's Wing-gland Bat (NT)
 - Littledale's Whistling Rat (NT)
 - Giant Bullfrog (NT/LC)
 - Kori Bustard (VU),
 - Ludwig's Bustard (VU),
 - Blue Crane (VU),
 - Martial Eagle (VU),
 - Lanner Falcon (NT),
 - Lesser Kestrel (NT),
 - Secretarybird (NT).
- Potential invasion of natural habitats by alien invasive plants, thus causing additional impacts on biodiversity features.

Potential risks to the ecological receiving environment are therefore the following:

1. Loss of indigenous natural vegetation during construction;
2. Impacts on a near threatened plant species;
3. Impacts on protected plant species;
4. Impacts on a protected tree species;
5. Impacts on watercourses / drainage lines;
6. Mortality of populations of sedentary species during construction (terrestrial and aquatic);
7. Displacement of populations of mobile species (terrestrial);
8. Mortality of bird species of concern due to secondary factors, such as collisions with overhead power lines;
9. Introduction and/or spread of declared weeds and alien invasive plants in terrestrial habitats.

Planning Phase impacts

There are no impacts that are likely to be created as a result of project planning.

Construction Phase impacts

Impact 1: Impacts on indigenous natural vegetation

The regional terrestrial vegetation type in the broad study area is Bushmanland Basin Shrubland, listed as Least Threatened. Some loss of habitat will occur, but this will be insignificant in comparison to the total area of the vegetation type concerned. However, local effects could potentially be significant.

Table 4: Impact summary table for Impact 1 for solar array, laydown area, buildings, on-site substation (both options) & internal roads (both options).

Loss of indigenous natural vegetation		
<i>Environmental parameter</i>	<i>Indigenous natural vegetation</i>	
<i>Issue/Impact/Environmental Effect/Nature</i>	<i>Loss, degradation or fragmentation of vegetation.</i>	
<i>Extent</i>	<i>The impact will affect natural vegetation on site and possibly in immediately surrounding areas.</i>	
<i>Probability</i>	<i>The impact will definitely happen.</i>	
<i>Reversibility</i>	<i>Irreversible in human timeframes, since natural successional processes cannot compensate for complete local loss of habitat and diversity. Secondary vegetation will probably never resemble the original vegetation found on site.</i>	
<i>Irreplaceable loss of resources</i>	<i>Significant loss of resources will occur.</i>	
<i>Duration</i>	<i>The impact will be permanent (mitigation either by man or natural process will not occur in such a way or such a time span that the impact can be considered transient.)</i>	
<i>Cumulative effect</i>	<i>Medium cumulative impact. Added to existing impacts on natural habitat, the current project will cause additional loss of vegetation.</i>	
<i>Intensity/magnitude</i>	<i>Medium. Regional vegetation will continue to function.</i>	
<i>Significance rating</i>	<i>Medium negative impact expected.</i>	
	Pre-mitigation impact rating	Post-mitigation impact rating
<i>Extent</i>	1	1
<i>Probability</i>	4	4
<i>Reversibility</i>	4	4
<i>Irreplaceable loss</i>	3	3
<i>Duration</i>	4	4
<i>Cumulative effect</i>	2	2
<i>Intensity/magnitude</i>	2	2
<i>Significance rating</i>	-36 (medium negative)	-36 (medium negative)
<i>Mitigation measures</i>	<p><i>The following mitigation measures would help to limit impacts:</i></p> <ol style="list-style-type: none"> <i>1. Compile a rehabilitation programme.</i> <i>2. Compile an Alien Plant Management Plan, including monitoring, to ensure minimal impacts on surrounding areas.</i> 	

Table 5: Impact summary table for Impact 1 for power lines (both options).

Loss of indigenous natural vegetation	
<i>Environmental parameter</i>	<i>Indigenous natural vegetation</i>
<i>Issue/Impact/Environmental Effect/Nature</i>	<i>Loss, degradation or fragmentation of vegetation.</i>

<i>Extent</i>	<i>The impact will affect natural vegetation on site and possibly in immediately surrounding areas.</i>	
<i>Probability</i>	<i>The impact will definitely happen.</i>	
<i>Reversibility</i>	<i>Partly reversible, since natural successional processes will compensate for localized loss of habitat.</i>	
<i>Irreplaceable loss of resources</i>	<i>Marginal loss of resources will occur.</i>	
<i>Duration</i>	<i>The impact will be medium-term (natural ecological successional processes could restore some vegetation that was lost).</i>	
<i>Cumulative effect</i>	<i>Low cumulative impact. Added to existing impacts on natural habitat, the current project will cause additional loss of vegetation, but not to a significant extent.</i>	
<i>Intensity/magnitude</i>	<i>Medium. Regional vegetation will continue to function.</i>	
<i>Significance rating</i>	<i>Medium negative impact expected.</i>	
	Pre-mitigation impact rating	Post-mitigation impact rating
Extent	1	1
Probability	4	4
Reversibility	2	2
Irreplaceable loss	2	2
Duration	2	2
Cumulative effect	2	1
Intensity/magnitude	2	2
Significance rating	-26 (low negative)	-24 (low negative)
Mitigation measures	<p><i>The following mitigation measures would help to limit impacts:</i></p> <ol style="list-style-type: none"> <i>1. Avoid patches of indigenous vegetation if possible, or place infrastructure as close as possible to boundaries.</i> <i>2. Compile a rehabilitation programme.</i> <i>3. Compile an Alien Plant Management Plan.</i> 	

Impact 2: Impacts on near threatened plant species

The Near Threatened species, *Hoodia officinalis* subsp. *officinalis*, was originally thought to possibly occur on site, a succulent that is found in desert, Nama Karoo and succulent Karoo inside bushes in flat or gently sloping areas. No individuals were found on site during the field survey and, based on an assessment of available habitat on site, it is considered unlikely that any occur there. This potential impact will therefore not occur and is not assessed further.

Impact 3: Impacts on protected plant species

There are two species protected according to the National Environmental Management: Biodiversity Act, *Hoodia gordonii* and *Harpagophytum procumbens*. Neither of these species were seen on site and, based on an assessment of available habitat on site, it is considered unlikely that either of these species would occur there.

There are a number of species that may be protected according to the Northern Cape Nature Conservation Act. The possible presence of these on site is unknown due to the extremely dry conditions at the time of the survey and the fact that the survey was undertaken in early winter, a poor time to document species presence.

Table 6: Impact summary table for Impact 3 for all infrastructure components.

Loss of individuals of protected plants		
<i>Environmental parameter</i>	<i>Protected plants, as per NEM:BA and Northern Cape Nature Conservation Act.</i>	
<i>Issue/Impact/Environmental Effect/Nature</i>	<i>Loss of individuals.</i>	
<i>Extent</i>	<i>The impact will affect local populations or individuals of the affected species.</i>	
<i>Probability</i>	<i>The impact may possibly happen.</i>	
<i>Reversibility</i>	<i>Partly reversible. Individuals can be rescued or else cultivated to replace lost specimens.</i>	
<i>Irreplaceable loss of resources</i>	<i>Marginal loss of resources could occur. The species that are likely to occur on site are likely to be relatively common throughout their range.</i>	
<i>Duration</i>	<i>The impact will be medium-term.</i>	
<i>Cumulative effect</i>	<i>Low cumulative impact. Cumulative effects will not be significant.</i>	
<i>Intensity/magnitude</i>	<i>Low. Loss of some individuals will be insignificant compared to the number that probably occur in surrounding areas.</i>	
<i>Significance rating</i>	<i>Low negative impact expected.</i>	
	Pre-mitigation impact rating	Post-mitigation impact rating
Extent	1	1
Probability	2	2
Reversibility	2	2
Irreplaceable loss	2	1
Duration	2	2
Cumulative effect	2	1
Intensity/magnitude	1	1
Significance rating	-11 (low negative)	-9 (low negative)
Mitigation measures	<i>It is a legal requirement to obtain permits for specimens that will be lost. A pre-construction walk-through survey will be required during a more favourable season to locate any protected plants. Plants lost to the development can be rescued and planted in appropriate places in surrounding areas. This will reduce the irreplaceable loss of resources as well as the cumulative effect.</i>	

Impact 4: Loss of individuals of protected trees

There is one protected tree species that had the potential to possibly occur on site, *Boscia albitrunca*. This species does not occur on site. This potential impact will therefore not occur and is not assessed further.

Impact 5: Impacts on drainage areas and pans

There is one pan occurring on site and one drainage area. The plant species composition within these areas is different to surrounding terrestrial areas, even though the site is within

an arid region. Some loss of habitat will probably occur within these areas, depending on which infrastructure option is selected.

Table 7: Impact summary table for Impact 5 for solar array and internal roads (both options).

Damage to drainage areas		
<i>Environmental parameter</i>	<i>Drainage areas</i>	
<i>Issue/Impact/Environmental Effect/Nature</i>	<i>Loss, degradation or fragmentation of vegetation.</i>	
<i>Extent</i>	<i>The impact will affect small drainage areas on site.</i>	
<i>Probability</i>	<i>The impact will definitely happen</i>	
<i>Reversibility</i>	<i>Irreversible in human timeframes, since natural successional processes cannot compensate for complete local loss of habitat and diversity. Secondary vegetation will probably never resemble the original vegetation found on site.</i>	
<i>Irreplaceable loss of resources</i>	<i>Marginal loss of resources will occur.</i>	
<i>Duration</i>	<i>The impact will be permanent (mitigation either by man or natural process will not occur in such a way or such a time span that the impact can be considered transient.)</i>	
<i>Cumulative effect</i>	<i>Medium cumulative impact. Added to existing impacts on natural habitat, the current project will cause additional loss of habitat.</i>	
<i>Intensity/magnitude</i>	<i>Medium. Wetland systems will probably continue to function, but in a modified way.</i>	
<i>Significance rating</i>	<i>Medium negative impact expected.</i>	
	Pre-mitigation impact rating	Post-mitigation impact rating
Extent	1	1
Probability	4	2
Reversibility	4	2
Irreplaceable loss	2	2
Duration	4	2
Cumulative effect	2	1
Intensity/magnitude	2	1
Significance rating	-30 (medium negative)	-10 (low negative)
Mitigation measures	<p><i>The following mitigation measures would help to limit impacts:</i></p> <ol style="list-style-type: none"> <i>1. Avoid placing infrastructure within drainage area and buffer area of at least 30 m.</i> <i>2. Prevent erosion impacts on wetland systems.</i> <i>3. Rehabilitate disturbance as quickly as possible.</i> <i>4. Prevent invasion by alien plants.</i> <i>5. Undertake monitoring to evaluate whether further measures would be required to manage impacts.</i> 	

Impact 6: Mortality of populations of sedentary species

There are 13 animal species of conservation concern that were originally assessed as having a possibility of occurring on site and therefore to be potentially affected by the proposed project:

1. Honey badger (NT)
2. Geoffroy's Horseshoe Bat (NT/LC)
3. Darling's Horseshoe Bat (NT)
4. Leseuer's Wing-gland Bat (NT)
5. Littledale's Whistling Rat (NT)
6. Giant Bullfrog (NT/LC)
7. Kori Bustard,
8. Ludwig's Bustard,
9. Blue Crane,
10. Martial Eagle,
11. Lanner Falcon,
12. Lesser Kestrel,
13. Secretarybird.

Only two of these species, Littledale's Whistling Rat and the Giant Bullfrog, are relatively sedentary and therefore considered to be potentially vulnerable to habitat loss, as related to this project. The field assessment established that no habitat occurs on site that is suitable for Littledale's Whistling Rat (semi-arid areas with deep, sandy soils and low vegetation cover) or the Giant Bullfrog (seasonal, shallow, grassy pans, vleis and other rain-filled depressions in open flat areas of grassland or savanna). No sign of either species was found on site. Landowners have not ever seen the Giant Bullfrog on site. The species is geographically relatively widespread and, if it occurred there, is not dependent on the site for survival. The site is at the geographical limit of the distribution range of the species. It is therefore assessed as highly unlikely that either species occurs on site or is likely to occur there. This potential impact is therefore considered highly unlikely to occur and is not assessed further.

Impact 7: Displacement of mobile fauna

Construction activities, loss of habitat, noise, dust and general activity associated with the construction phase of the project are likely to cause all mobile species to move away from the site. Mobile species of conservation concern (two sedentary species are discussed for the previous impact) that could potentially be affected by the proposed project are as follows:

1. Honey badger (NT)
2. Geoffroy's Horseshoe Bat (NT/LC)
3. Darling's Horseshoe Bat (NT)
4. Leseuer's Wing-gland Bat (NT)
5. Kori Bustard,
6. Ludwig's Bustard,
7. Blue Crane,
8. Martial Eagle,
9. Lanner Falcon,
10. Lesser Kestrel,
11. Secretarybird.

Except for the Honey Badger, all of these are flying animals that have wide ranges. The Honey Badger is a highly mobile terrestrial species with a large home range and the ability to travel long distances in short periods of time. For all these species, they may be locally displaced, but this will have little effect on the overall range of any of these species nor is it expected that any overall impacts will result from local displacement. This potential impact is therefore considered highly unlikely to occur and is not assessed further.

Operational Phase impacts

Impact 8: Mortality of birds by collision with power lines

During operation, flying species could potentially suffer mortality by collisions with vertical infrastructure, especially infrastructure with low visibility, such as power lines.

The species most affected by loss of individuals are species that are already threatened in their general range by other factors. These species appear on various Red Lists. Species that are not threatened are unlikely to be significantly negatively affected by loss of habitat, since they are generally widespread and/or catholic in their requirements. Also, there are certain groups of birds, the large, low-flying species (bustards, cranes, etc.) that are most at risk from power lines.

Table 8: Impact summary table for Impact 8 for power lines (both options).

Mortality of individuals due to collisions with power lines		
<i>Environmental parameter</i>	<i>Threatened bird species</i>	
<i>Issue/Impact/Environmental Effect/Nature</i>	<i>Loss of individuals.</i>	
<i>Extent</i>	<i>The impact will affect individuals on site and possibly in immediately surrounding areas.</i>	
<i>Probability</i>	<i>The impact may possibly happen.</i>	
<i>Reversibility</i>	<i>Partly reversible. Preventative measures could reduce mortality to below replacement levels.</i>	
<i>Irreplaceable loss of resources</i>	<i>Marginal loss of resources will occur.</i>	
<i>Duration</i>	<i>The impact will be long-term.</i>	
<i>Cumulative effect</i>	<i>Medium cumulative impact. Cumulative effects will be minor.</i>	
<i>Intensity/magnitude</i>	<i>Medium. May impact on population processes.</i>	
<i>Significance rating</i>	<i>Low negative impact expected.</i>	
	Pre-mitigation impact rating	Post-mitigation impact rating
Extent	1	1
Probability	2	1
Reversibility	2	2
Irreplaceable loss	2	2
Duration	3	3
Cumulative effect	3	2
Intensity/magnitude	2	1
Significance rating	-26 (low negative)	-11 (low negative)
Mitigation measures	<i>Visibility devices could be placed on overhead powerlines, if necessary. This will reduce the probability slightly, but not to an extent that it will change the impact rating scores. The mitigation measure is therefore not required unless monitoring identifies this as an issue during operation.</i>	

Impact 9: Establishment and spread of declared weeds and alien invader plants

Major factors contributing to invasion by alien invader plants includes *inter alia* high disturbance (such as clearing for construction activities) and negative grazing practices (Zachariades *et al.* 2005). Exotic species are often more prominent near infrastructural

disturbances than further away (Gelbard & Belnap 2003, Watkins *et al.* 2003). Consequences of this may include:

1. loss of indigenous vegetation;
2. change in vegetation structure leading to change in various habitat characteristics;
3. change in plant species composition;
4. change in soil chemical properties;
5. loss of sensitive habitats;
6. loss or disturbance to individuals of rare, endangered, endemic and/or protected species;
7. fragmentation of sensitive habitats;
8. change in flammability of vegetation, depending on alien species;
9. hydrological impacts due to increased transpiration and runoff; and
10. impairment of wetland function.

There is a moderate possibility that alien plants could be introduced to areas within the footprint of the proposed infrastructure from surrounding areas in the absence of control measures. The potential consequences may be of low seriousness for surrounding natural habitats due to the fact that little natural vegetation still remains on site. Control measures could prevent the impact from occurring. The alien invasive species, *Prosopis glandulosa*, occurs in small numbers on site, but has the potential to spread exponentially.

Table 9: Impact summary table for Impact 9 for all infrastructure.

Establishment and spread of declared weeds		
<i>Environmental parameter</i>	<i>Vegetation and habitat</i>	
<i>Issue/Impact/Environmental Effect/Nature</i>	<i>Loss of habitat due to invasion by alien plants</i>	
<i>Extent</i>	<i>The impact will affect habitat on site and possibly in immediately surrounding areas.</i>	
<i>Probability</i>	<i>The impact will probably happen in the absence of control measures.</i>	
<i>Reversibility</i>	<i>Partly reversible in the absence of control measures. Completely reversible if mitigation measures applied. Preventative measures will stop the impact from occurring.</i>	
<i>Irreplaceable loss of resources</i>	<i>Marginal to significant loss of resources will occur. Uncontrolled invasion can affect all nearby natural habitats.</i>	
<i>Duration</i>	<i>The impact will be long-term.</i>	
<i>Cumulative effect</i>	<i>Low cumulative impact. Cumulative effects will not be significant.</i>	
<i>Intensity/magnitude</i>	<i>Medium. Severe invasion can alter the functioning of natural ecosystems.</i>	
<i>Significance rating</i>	<i>Low negative impact expected.</i>	
	Pre-mitigation impact rating	Post-mitigation impact rating
Extent	1	1
Probability	3	2
Reversibility	2	1
Irreplaceable loss	3	2
Duration	3	3
Cumulative effect	2	2

Intensity/magnitude	2	1
Significance rating	-28 (medium negative)	-11 (low negative)
Mitigation measures	<i>Compile and implement an alien management plan. Undertake regular monitoring to detect alien invasions early so that they can be controlled. Implement control measures.</i>	

Decommissioning Phase impacts

It is expected that the project will operate for a minimum of twenty years or more (a typical planned life-span for a project of this nature). Decommissioning will probably require a series of steps resulting in the removal of equipment from the site and rehabilitation of footprint areas. It is possible that the site could be returned to a rural nature, but it is unlikely that natural vegetation would become established on site for a very long time. The reality is that it is not possible to determine at this stage whether rehabilitation measures will be implemented or not or what the future plans for the site would be nor is it possible at this stage to determine what surrounding land pressures would be. These uncertainties make it impossible to undertake any assessment to determine possible impacts of decommissioning.

ALTERNATIVES ASSESSMENT

This section provides a comparative assessment of infrastructure alternatives. These are evaluated according to the key below:

Key

PREFERRED	The alternative will result in a low impact / reduce the impact
FAVOURABLE	The impact will be relatively insignificant
NOT PREFERRED	The alternative will result in a high impact / increase the impact
NO PREFERENCE	The alternative will result in equal impacts

There are two possible substation sites, two possible internal road network options and two possible power line corridors. A summary of the preferences related to each of these options is provided in the following table.

Alternative	Preference	Reasons
SUBSTATION		
Substation Site Alternative 1	NO PREFERENCE	Does not directly affect sensitive ecological features, but is in close proximity to drainage area.
Substation Site Alternative 2	NO PREFERENCE	Does not directly affect sensitive ecological features, but is in close proximity to drainage area.
INTERNAL ROADS		
Internal Road Alternative 1	NO PREFERENCE	Affect similar areas of similar habitat.
Internal Road Alternative 2	NO PREFERENCE	Affect similar areas of similar habitat.
POWER LINES		
Power Line Corridor Alternative 1	FAVOURABLE	This alternative is less likely to affect drainage areas or pans.
Power Line Corridor Alternative 2	FAVOURABLE	This option is more likely to affect drainage areas and/or pans, although these can be avoided if necessary, by locating tower structures appropriately.

IMPLICATIONS OF FINDINGS FOR DEVELOPMENT

Site sensitivities and the results of the impact assessment indicate that the project is unlikely to have significant negative impacts on the ecological receiving environment, except for localised sensitivities. There are some drainage areas that have a higher sensitivity than surrounding areas and it is probably preferable to avoid these areas, if possible. They have been classified as having MEDIUM-HIGH sensitivity.

The alternatives provided all have similar impacts on the receiving environment. There is no case where it would be an ecological fatal flaw to use an alternative over another.

There are two protected plant species that could potentially occur on site, although neither was seen there during the site visit. If they are found to occur there then permits will be required to remove them. This means that a walk-down survey will be required within natural habitats within the final footprint that is selected in order to document the presence of protected species for permitting purposes.

There are some bird species that are vulnerable to collision or electrocution mortality with power lines. If this turns out to become an issue then additional measures may need to be taken to reduce such impacts, for example, the use of bird deflectors on power lines.

The project is supported from an ecological point of view due to the fact that impacts of low significance will result and most impacts can be controlled to some degree.

CUMULATIVE IMPACTS

Existing impacts on site and in the surrounding areas are mostly related to rural land-use, such as grazing, roads and homesteads. These have resulted in some direct impacts on natural habitat as well as grazing effects on natural habitat. In the area around the site are also impacts evident from historical mining activities.

The main impact due to the proposed project will be loss of habitat, along with associated secondary impacts, as listed and discussed in the sections above (loss of faunal habitat, displacement of fauna and invasion by alien plants). There are a number of other solar projects that have been proposed or have already been approved in the general area around the site and towards Prieska. Together, these projects will lead to significant loss of natural habitat in the general area. Cumulative impacts associated with the project are therefore potentially significant and are assessed as moderate for all impacts associated with habitat loss. A summary of cumulative impacts associated with each impact are as follows:

<i>Impacts on indigenous natural vegetation</i>	<i>High cumulative impact. Added to existing impacts on natural habitat, the current project will cause additional loss of vegetation that could be significant.</i>
<i>Loss of individuals of protected plants</i>	<i>Low cumulative impact. Some individuals will possibly be affected, but not to a significant extent compared to numbers within natural populations nearby.</i>
<i>Damage to drainage areas and pans</i>	<i>Low cumulative impact. Added to existing impacts on drainage areas and pans, the current project may cause additional impacts, but not to a significant extent, if management measures are employed to control impacts. The region is very arid and, although there are drainage areas and pans in the area, not a large number will likely be affected by the combination of all the projects.</i>
<i>Displacement of mobile fauna</i>	<i>Moderate to high cumulative impact. Added to existing impacts on natural habitat, the current project will cause additional displacement. The projects all taken together could potentially cause regional displacement of some species.</i>
<i>Bird mortality due to power line collisions</i>	<i>Moderate to high cumulative impact. Cumulative effects are expected to be significant for some vulnerable species (those that are affected by collisions with overhead power lines), since there is little current impact in the region, but this will be expanded significantly if all projects proceed.</i>
<i>Establishment and spread of declared alien plants</i>	<i>Moderate cumulative impact. Cumulative effects will not be significant for any single project due to the existing presence of populations of alien plants in the study area, but taken in combination, the degree of disturbance to the landscape will increase conditions favourable for invasive species quite significantly.</i>

MITIGATION MEASURES AND RECOMMENDATIONS

This section of the report provides a description of mitigation measures that could be applied to minimize identified impacts.

Mitigation measures

Surface Runoff and Stormwater Management Plan

This plan must indicate how all surface runoff generated as a result of the project and associated activities (during both the construction and operational phases) will be managed (e.g. artificial wetlands/stormwater and flood retention ponds) prior to entering any natural drainage system or wetland and how surface water runoff will be retained outside of any demarcated buffer/flood zones and subsequently released to simulate natural hydrological conditions.

Rehabilitation Programme

Rehabilitation Programme should be established before operation. The programme must address the rehabilitation of the existing habitats as well as rehabilitation after closure. This Rehabilitation Programme must be approved by the relevant government departments.

Botanical walk-through survey

A preconstruction walk-through survey should be undertaken to list the identity and location of all listed and protected species. The results of the walk-through survey should provide an indication of the number of individuals of each listed species that are likely to be impacted by the proposed development. This information may be required for a permit application to the Provincial authorities.

Obtain permits for protected plants

It is a legal requirement that permits will be required for any species protected according to National or Provincial legislation. The identity of species affected by such permit requirements can only be identified during the walk-through survey (previous mitigation measure). It is common practice for the authorities that issue the permits to require search and rescue of affected plants. Due to the season of the field survey and the extremely dry condition of the vegetation, it was not possible to establish this information at this stage.

Alien plant management plan

It is recommended that a monitoring programme be implemented to enforce continual eradication of alien and invasive species, especially within the riparian habitat. An Alien Invasive Programme is an essential component to the successful conservation of habitats and species. Alien species, especially invasive species are a major threat to the ecological functioning of natural systems and to the productive use of land. In terms of the amendments of the regulations under the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983), landowners are legally responsible for the control of alien species on their properties. The protection of our natural systems from invasive species is further strengthened within Sections 70-77 of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004). This programme should include monitoring procedures.

Undertake regular monitoring

Monitoring should be undertaken to evaluate the success of mitigation measures. Monitoring methods must be in accordance with features that need to be monitored and can form part of a monitoring programme to be compiled.

Recommendations

The following is recommended:

- Control measures for some potential impacts are relatively well-known and easy to implement and it is recommended that these be applied as mitigation measures for some potential impacts. These mitigation measures are described above.

DISCUSSION AND CONCLUSIONS

Biodiversity features in the study area

The vegetation types that occur on the sites are classified as Least Threatened and also have a wide distribution and extent. The natural vegetation on the sites is therefore not considered to have high conservation status. The area is not within a Centre of Plant Endemism, nor does it occur in close proximity to an area identified as part of the National Parks Area Expansion Strategy or in areas identified in Provincial Conservation Plans to be of concern.

Local factors that may lead to parts of the sites having elevated ecological sensitivity are the presence of a pan and a drainage area on site, the potential presence of provincially protected plant species and the potential presence of various animal species of conservation concern (primarily birds). There is also a protected tree (*Boscia albitrunca*) that possibly occurs in the general region, but this species does not occur within the project study area.

Drainage areas represent particularly vital natural corridors as they function both as wildlife habitat, providing resources needed for survival, reproduction and movement, and as biological corridors, providing for movement between habitat patches. Wetlands (including drainage areas and pans) are protected under national legislation (National Water Act). Any impacts on these areas would require a permit from the National Department of Water Affairs.

There are a number of animal species of conservation concern that may occur in habitats within the study area. This includes four mammal species (Honey Badger (NT), Geoffroy's Horseshoe Bat (NT), Darling's Horseshoe Bat (NT) and Leseuer's Wing-gland Bat (NT)) and seven bird species of conservation concern (Kori Bustard (VU), Ludwig's Bustard (VU), Blue Crane (VU), Martial Eagle (VU), Lanner Falcon (NT), Lesser Kestrel (NT), Secretarybird (NT)). Lists and habitat requirements for these species are provided in the appendices to this report.

Bats do not appear, from this initial assessment, to be of major concern. There are a maximum of three species of low conservation concern that could be affected. All species are listed as Near Threatened in South Africa and globally as Least Concern. The key factor is the presence of roosting habitats nearby, which is of higher concern in areas close to mountainous or rocky hillside topography. There are no such topographical features in close proximity to the project study area.

The study area consists mostly of natural vegetation. Transformed and degraded areas in the project study area have low sensitivity and conservation value. Most areas have medium sensitivity and drainage areas / pans have medium-high sensitivity.

Summary of potential impacts

A summary of the potential risks to the ecological receiving environment were assessed in the Scoping Phase as being the following:

1. Impacts on indigenous natural vegetation;
2. Impacts on a plant species of low conservation concern;
3. Impacts on protected plant species;
4. Impacts on a protected tree species;
5. Impacts on pans / drainage lines;
6. Mortality of sedentary animals;
7. Displacement of mobile fauna;

8. Mortality of birds by collision with power lines;
9. Establishment and spread of declared weeds and alien invader plants.

Following a field assessment of the site, four of these impacts were assessed as unlikely to occur (Impacts 2, 4, 6 and 7). A summary and comparison between pre- and post-mitigation phases is provided in Table 13 below. The only issue of concern is the overall loss of habitat / natural vegetation on site.

Table 13: Comparison of summarized impacts on environmental parameters.

Environmental parameter	Issues	Rating prior to mitigation	Average	Rating post mitigation	Average
Indigenous natural vegetation	Loss	-36		-36	
Protected plant species	Loss of individuals	-11		-9	
Drainage areas/pans	Damage, loss of vegetation	-30		-10	
Bird species of conservation concern	Collision with power lines	-26		-11	
Natural habitat	Invasion by alien invasive plant species leading to habitat loss and/or degradation	-28		-11	
			- 26.2		-15.4
			Low Negative Impact		Low Negative Impact

Conclusions

There are some relatively minor issues related to the ecology of the site that could result in ecological impacts. The most important of these is the overall loss of natural habitat, for which no mitigation will reduce the significance of the impact. Other potential issues that can be managed are impacts on the pan and/or the drainage area, collision with overhead power lines by bird species of conservation concern, invasion of natural habitat by alien invasive plant species and possible (but unlikely) loss of protected plant species.

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APPENDICES:**Appendix 1: Plant species of conservation importance (Threatened, Near Threatened and Declining) that have historically been recorded in the general geographical area that includes Copperton.**

Sources: South African National Biodiversity Institute in Pretoria.

Family	Taxon	Status	Distribution and habitat	Likelihood of occurrence on site
APOCYNACEAE	Hoodia officinalis subsp. officinalis	NT	Southern Namibia (except winter rainfall areas and deep sands of Kalahari in the east) and from Griqualand West near Douglas to Kimberley and Jacobsdal. Free State and Northern Cape in SA. Desert, Nama Karoo, Succulent Karoo. Inside bushes in flat or gently sloping areas.	HIGH , within known distribution, habitat on site suitable.
HYACINTHACEAE	Drimia sanguinea	NT	Northern Cape and diagonally across to Limpopo and Mpumalanga Provinces, Namibia, Botswana and Zimbabwe. Distribution is somewhat to the north of the current area. Open veld and scrubby woodland in a variety of soil types.	LOW , edge of known range, although habitat on site may be suitable

* Conservation Status Category assessment according to IUCN Ver. 3.1 (IUCN, 2001), as evaluated by the Threatened Species Programme of the South African National Biodiversity Institute in Pretoria. *IUCN (3.1) Categories: VU = Vulnerable, EN = Endangered, CR = Critically Endangered, NT = Near Threatened.

Appendix 2: List of protected tree species (Schedule A of the National Forests Act, 1998 (Act No 84 of 1998)), as published in GN No. 716, 7 September 2012.

Botanical Name	English Common Name
<i>Acacia erioloba</i>	Camel thorn
<i>Acacia haematoxylon</i>	Grey camel thorn
<i>Adansonia digitata</i>	Baobab
<i>Azelia quanzensis</i>	Pod mahogany
<i>Balanites</i> subsp. <i>maughamii</i>	Torchwood
<i>Barringtonia racemosa</i>	Powder-puff tree
<i>Boscia albitrunca</i>	Shepherd's tree
<i>Brachystegia spiciformis</i>	Msasa
<i>Breonadia salicina</i>	Matumi
<i>Bruguiera gymnorhiza</i>	Black mangrove
<i>Cassipourea swaziensis</i>	Swazi onionwood
<i>Catha edulis</i>	Bushman's tea
<i>Ceriops tagal</i>	Indian mangrove
<i>Cleistanthus schlechteri</i> var. <i>schlechteri</i>	False tamboti
<i>Colubrina nicholsonii</i>	Pondo weeping thorn
<i>Combretum imberbe</i>	Leadwood
<i>Curtisia dentata</i>	Assegai
<i>Elaeodendron transvaalensis</i>	Bushveld saffron
<i>Erythrophysa transvaalensis</i>	Bushveld red balloon
<i>Euclea pseudebenus</i>	Ebony guarri
<i>Ficus trichopoda</i>	Swamp fig
<i>Leucadendron argenteum</i>	Silver tree
<i>Lumnitzera racemosa</i> var. <i>racemosa</i>	Tonga mangrove
<i>Lydenburgia abottii</i>	Pondo bushman's tea
<i>Lydenburgia cassinoides</i>	Sekhukhuni bushman's tea
<i>Mimusops caffra</i>	Coastal red milkwood
<i>Newtonia hildebrandtii</i> var. <i>hildebrandtii</i>	Lebombo wattle
<i>Ocotea bullata</i>	Stinkwood
<i>Ozoroa namaensis</i>	Gariiep resin tree
<i>Philenoptera violacea</i> (<i>Lonchocarpus capassa</i>)	Apple leaf
<i>Pittosporum viridiflorum</i>	Cheesewood
<i>Podocarpus elongatus</i>	Breede River yellowwood
<i>Podocarpus (Afrocarpus) falcatus</i>	Outeniqua yellowwood
<i>Podocarpus henkelii</i>	Henkel's yellowwood
<i>Podocarpus latifolius</i>	Real yellowwood
<i>Protea comptonii</i>	Saddleback sugarbush
<i>Protea curvata</i>	Serpentine sugarbush
<i>Prunus africana</i>	Red stinkwood
<i>Pterocarpus angolensis</i>	Wild teak
<i>Rhizophora mucronata</i>	Red mangrove
<i>Sclerocarya birrea</i> subsp. <i>caffra</i>	Marula
<i>Securidaca longependunculata</i>	Violet tree
<i>Sideroxylon inerme</i> subsp. <i>inerme</i>	White milkwood
<i>Tephrosia pondoensis</i>	Pondo poison pea
<i>Warburgia salutaris</i>	Pepper-bark tree
<i>Widdringtonia cedarbergensis</i>	Clanwilliam cedar
<i>Widdringtonia schwarzii</i>	Willowmore cedar

Boscia albitrunca has a geographical distribution that coincides with the study areas.

Appendix 3: Animal species with a geographical distribution that includes the study area.

Notes:

1. Species of conservation concern are in red lettering.
2. Species protected according to the National Environmental Management: Biodiversity Act of 2004 (Act 10 of 2000) marked with "N"

Mammals:

Springbok
^NBlack rhinoceros (arid ecotype)
Klipspringer
Gemsbok
Steenbok
Common duiker
Rock hyrax
Water mongoose
Black-backed jackal
Caracal
Yellow mongoose
^NBlack-footed cat
African wild cat
Small grey mongoose
Small-spotted genet
Striped polecat
^NHoney badger NT
Bat-eared fox
^NLeopard
Aardwolf
Suricate
^NCape fox
^NLeseur's wing-gland bat NT
Cape serotine bat
Egyptian slit-faced bat
^NGeoffroy's horseshoe bat NT
^NDarling's horseshoe bat NT
Egyptian free-tailed bat
Reddish-grey musk shrew
Cape/desert hare
Scrub/savannah hare
Namaqua rock mouse
Short-tailed gerbil
Hairy-footed gerbil
Spectacled dormouse
Porcupine
Large-eared mouse
Multimammate mouse
Karoo bush rat
Brant's whistling rat
^NLittledale's whistling rat NT
Springhare
Striped mouse
Bushveld gerbil
Cape ground squirrel
Smith's rock elephant shrew
Round-eared elephant shrew

Aardvark

Reptiles:

Puff adder
Horned adder
Cape cobra
Rinkhals
Coral snake
Dwarf beaked snake
Karoo whip snake
(Spotted skaapstecker)
(Common tiger snake)
Beetz's tiger snake
Herald snake
Brown house snake
(Aurora house snake)
(Spotted rock snake)
(Fisk's house snake)
Mole snake
Sundevall's shovel-snout
(Common slug-eater)
Common wolf snake
Common egg-eater
Delalande's beaked blind snake
Common ground agama
Anchieta's agama
Southern rock agama
Common flap-necked chameleon
Rock monitor
(Bushveld lizard)
Spotted desert lizard
Western sandveld lizard
(Plain sand lizard)
Karoo (Cape) sand lizard
(Spotted sand lizard)
Common sand lizard
Namaqua sand lizard
(Striped dwarf legless skink)
Cape skink
Western three-striped skink
(Kalahari tree skink)
Western rock skink
Variegated skink
Karoo girdled lizard
Common giant ground gecko
Bibron's gecko
Cape gecko
(Common rough gecko)

Marico gecko
Purcell's gecko
Spotted barking gecko
Marsh terrapin
(Karoo padloper)
Leopard tortoise
(Karoo tent tortoise)
Verroxx's tent tortoise

Amphibians

(Bushveld rain frog)
Guttural toad
Southern pygmy toad
Karoo toad
(Bubbling kassina)
Common platanna
Boettger's caco
Common river frog
Cape river frog
^NGiant bullfrog NT
Tremolo sand frog
Tandy's sand frog

Birds

Avocet Pied
Barbet Pied
Batis Pririt
Bee-eater European
Bee-eater Swallow-tailed
Bishop Southern Red
Bokmakierie
Brubru
Bulbul Red-eyed
Bunting Cape
Bunting Lark-like
^NBustard Kori VU
^NBustard Ludwig's VU
Buzzard Jackal
Buzzard Steppe
Canary Blackheaded
Canary Damara
Canary Black-throated
Canary White-throated
Canary Yellow
Chat Ant-eating
Chat Familiar
Chat Karoo
Chat Mountain
Chat Sicklewinged
Chat Tractrac
Cisticola Desert
Cisticola Grey-backed
Cisticola Levillant's
Coot Red-knobbed
Cormorant Reed

Courser Burchell's
Courser Doublebanded
Courser Temminck's
^NCrane Blue VU
Crombec Long-billed
Crow Black
Crow Pied
Cuckoo Diderick
Cuckoo Jacobin
Dabchick
Darter African
Dikkop Spotted
Dove Cape Turtle-
Dove Laughing
Dove Namaqua
Dove Red-eyed
Duck African Black
Duck Maccoa
Duck Yellow-billed
Eagle African Fish-
Eagle Black / Verreaux's
Eagle Black-chested Snake-
Eagle Booted
^NEagle Martial VU
Egret Cattle
Egret Little
Eremomela Yellow-bellied
^NFalcon Lanner NT
^NFalcon Peregrine NT
Finch Quail
Finch Red-headed
Finch Scaly-feathered
Finchlark Blackeared
Finchlark Greyback
^NFlamingo Greater NT
^NFlamingo Lesser NT
Flycatcher Chat
Flycatcher Fairy
Flycatcher Fiscal
Flycatcher Paradise
Flycatcher Spotted
Goose Egyptian
Goose Spur-winged
Goshawk Southern Pale Chanting-
Grebe Blacknecked
Greenshank Common
Guineafowl Helmeted
Gull Grey-headed
Gymnogene
Hamerkop
^NHarrier Black VU
Heron Black-headed
Heron Grey
Hoopoe African
Ibis African Sacred
Ibis Glossy
Ibis Hadedda

Kestrel Greater
^NKestrel Lesser VU
 Kestrel Rock
 Kingfisher Malachite
 Kingfisher Pied
 Kite Black
 Kite Black-shouldered
 Kite Yellow-billed
 Korhaan Karoo
 Korhaan White-winged
 Lapwing Blacksmith
 Lapwing Crowned
 Lark Bradfield's
 Lark Eastern Clapper
 Lark Fawn-coloured
 Lark Karoo Long-billed
 Lark Pink-billed
 Lark Red
 Lark Red-capped
 Lark Sclater's NT
 Lark Spike-heeled
 Lark Stark's
 Lark Thick-billed
 Martin Brown-throated
 Martin Rock
 Moorhen Common
 Mousebird Red-faced
 Mousebird White-backed
 Nightjar European
 Nightjar Fiery-necked
 Nightjar Freckled
 Nightjar Rufous-cheeked
 Oriole Eurasian Golden
 Ostrich Common
 Owl Barn
 Owl Cape Eagle-
 Owl Southern White-faced Scops-
 Owl Spotted Eagle-
 Pigeon Feral
 Pigeon Rock
 Pipit Buffy
 Pipit Grassveld
 Plover Caspian
 Plover Chestnut-banded NT
 Plover Kittlitz's
 Plover Ringed
 Plover Three-banded
 Pochard Southern
 Prinia Black-chested
 Prinia Karoo
 Quail Common
 Quelea Red-billed
 Rail African
 Robin Kalahari Scrub-
 Robin Karoo Scrub-
 Rockthrush Short-toed
 Roller European

Ruff
 Sanderling
 Sandgrouse Namaqua
 Sandpiper Common
 Sandpiper Curlew
 Sandpiper Marsh
 Sandpiper Wood
 Secretarybird NT
 Shelduck South African
 Shoveler Cape
 Shrike Fiscal
 Shrike Lesser Grey
 Shrike Red-backed
 Snipe Ethiopian
 Sparrow Cape
 Sparrow House
 Sparrow Southern Grey-headed
 Sparrowweaver White-browed
 Spoonbill African
 Starling Pale-winged
 Starling Pied
 Starling Wattled
 Stilt Black-winged
 Stint Little
 Stonechat African
^NStork Black NT
 Stork White
 Sunbird Dusky
 Swallow European
 Swallow Greater Striped
 Swallow Pearl-breasted
 Swallow South African Cliff-
 Swallow White-throated
 Swift Alpine
 Swift Bradfield's
 Swift Eurasian
 Swift Horus
 Swift Little
 Swift White-rumped
 Teal Cape
 Teal Red-billed
 Tern White-winged
 Thrush Karoo
 Thrush Kurrichane
 Thrush Olive
 Tit Ashy
 Tit Cape Penduline-
 Tit-Babbler Chestnut-vented
 Titbabbler Layard's
 Wagtail Cape
 Warbler African Reed-
 Warbler Cape Reed
 Warbler Garden
 Warbler Namaqua
 Warbler Rufous-eared
 Warbler Willow
 Waxbill Black-faced

Waxbill Common
Weaver Sociable
Weaver Southern Masked-
Wheatear Capped
Whimbrel
White-eye Orange River
Whydah Pin-tailed
Whydah Shaft-tailed

Appendix 4: Threatened vertebrate species with a geographical distribution that includes the Copperton area.

MAMMALS

Common name	Taxon	Habitat ¹	National status	Global status ²	Likelihood of occurrence
Black rhinoceros	<i>Diceros bicornis bicornis</i>	Wide variety of habitats, but currently only occurs in game reserves.	CR	CR	NONE , only occurs in game reserves
Honey badger	<i>Mellivora capensis</i>	Wide variety of habitats. Probably only in natural habitats.	NT	LC	HIGH , overall geographical distribution includes this area, habitat is suitable.
Leseuer's wing-gland bat	<i>Cistugo leseuri</i>	Caves and subterranean habitats; fynbos, shrubland, grassland, succulent and Nama-karoo; insectivore	NT	LC	LOW , overall geographical distribution includes this area, general habitat is suitable - no caves on site.
Geoffroy's horseshoe bat	<i>Rhinolophus clivosus</i>	Caves and subterranean habitats; fynbos, shrubland, grassland, succulent and Nama-karoo; insectivore	NT	LC	LOW , overall geographical distribution includes this area, general habitat is suitable – no caves on site.
Darling's horseshoe bat	<i>Rhinolophus darlingi</i>	Caves and subterranean habitats. Woodland savannah.	NT	LC	LOW , overall geographical distribution includes this area, general habitat not suitable – no caves on site.
Littledale's whistling rat	<i>Parotomys littledalei</i>	Desert, Karoo. Sandy or gravel open plains. Tends to excavate burrow beneath a shrub, but will also construct stick nest at the base of a shrub. Herbivorous, favouring leaves of <i>Zygophyllum</i> and <i>Mesembryanthemaceae</i> .	NT	LC	MEDIUM , overall geographical distribution includes this area, general habitat is suitable

¹Distribution and national status according to Friedmann & Daly 2004.

²Global status according to IUCN 2010. IUCN Red List of Threatened Species. Version 2010.3. (www.iucnredlist.org). Downloaded on 11 September 2010.

AMPHIBIANS

Common name	Species	Habitat	Status	Likelihood of occurrence
Giant Bullfrog	<i>Pyxicephalus adspersus</i>	Widely distributed in southern Africa, mainly at higher elevations. Inhabits a variety of vegetation types where it breeds in seasonal, shallow, grassy pans in flat, open areas; also utilises non-permanent vleis and shallow water on margins of waterholes and dams. Prefer sandy substrates although they sometimes inhabit clay soils.	NT ¹ LC ² Protected (NEMBA)	MEDIUM , within known distribution range and partially suitable habitat occurs on site.

¹Status according to Minter et al. 2004.

²Status according to IUCN 2010. IUCN Red List of Threatened Species. Version 2010.3. (www.iucnredlist.org). Downloaded on 11 September 2010.

REPTILES

Common name	Species	Habitat	Status ³	Likelihood of occurrence
None				

³Distribution according to Alexander & Marais 2007.

⁴Status according to Alexander & Marais 2007.

BIRDS

Common name	Species	Habitat	Status	Importance of site for species

Common name	Species	Habitat	Status	Importance of site for species
Kori Bustard	<i>Ardeotis kori</i>	Open plains of karoo, highveld grassland, Kalahari sandveld, arid scrub, Namib Desert, lightly wooded savanna, bushveld. Very common resident in study area.	VU ¹ NT ² Protected (NEMBA)	LOW, breeding, MEDIUM, foraging
Luwig's Bustard	<i>Neotis ludwigii</i>	Dry open plains from grassland to desert. Common resident in study area.	VU ¹ EN ² Protected (NEMBA)	LOW, breeding, MEDIUM, foraging
Blue Crane	<i>Anthropoides paradisea</i>	Midland and highland grassveld, edge of karoo, cultivated land, edges of vleis. Roosts on ground or in shallow water. Common resident in study area. <i>Nest</i> : Scrape on bare ground or rock (klipplaas) in open grassveld, often in moist places; sometimes thinly lined or ringed with pebbles, sheep droppings or bits of plant material.	VU ¹ VU ² Protected (NEMBA)	LOW, breeding, MEDIUM, foraging
Martial Eagle	<i>Polemaetus bellicosus</i>	The Martial Eagle is widespread but uncommon throughout South Africa and neighbouring countries. It tolerates a wide range of vegetation types, being found in open grassland, scrub, Karoo and woodland. It relies on large trees (and electricity pylons) to provide nest sites. It is found typically in flat country and is rarer in mountains and forests. One of the main reason it is declining is because of persecution on private land. This species has been recorded from the study area and many surrounding areas. Common resident in study area.	VU ¹ VU ² Protected (NEMBA)	LOW, breeding, MEDIUM, foraging
Lanner Falcon	<i>Falco biarmicus</i>	Most frequent in open grassland, open or cleared woodland, and agricultural areas. Breeding pairs generally favour habitats where cliffs available as nest and roost sites, but will use alternative sites (eg trees, electricity pylons, buildings) if cliffs absent. Widespread species, occurring in Afrotropics, Middle East and western Palearctic. Occurs in mountains or open country from semidesert to woodland and agricultural land; also cities (Durban, Harare). Common resident in study area.	NT ¹ LC ²	LOW, breeding, MEDIUM, foraging
Peregrine Falcon	<i>Falco peregrinus</i>	Cliffs, mountains, steep gorges; may hunt over open grassland, farmland and forests; rarely enters cities to hunt pigeons. Uncommon non-breeding migrant in study area.	NT ¹ LC ²	ZERO, breeding, LOW, foraging
Greater Flamingo	<i>Phoenicopterus ruber</i>	Large bodies of shallow water, both inland and coastal; saline and brackish waters preferred. Common resident in study area.	NT ¹ LC ²	ZERO, breeding, ZERO, foraging
Lesser Flamingo	<i>Phoenicopterus minor</i>	Larger brackish or saline inland and coastal waters. Common resident in study area.	NT ¹ NT ²	ZERO, breeding, ZERO, foraging

Common name	Species	Habitat	Status	Importance of site for species
Black harrier	<i>Circus maurus</i>	Grassveld, karoo scrub, mountain fynbos, cultivated lands, subalpine vegetation, semidesert. Endemic to southern Africa. Uncommon non-breeding migrant in study area. Dry grassland, Karoo scrub and agricultural fields.	VU ¹ VU ²	ZERO, breeding, LOW, foraging
Lesser Kestrel	<i>Falco naumannii</i>	Open grassveld, mainly on highveld, usually near towns or farms. Common non-breeding migrant in study area.	VU ¹ na ²	ZERO, breeding, MEDIUM, foraging
Red Lark	<i>Calendulauda burra</i>	Red Kalahari sandveld with tussocks of <i>Stipagrostis</i> about 50 cm tall. Common resident in study area. Endemic to South Africa.	VU ¹ na ²	ZERO, breeding, ZERO, foraging
Sclater's Lark	<i>Spizocorys sclateri</i>	Arid stony plains with low sparse shrubs. Occur largely on stony substrates with very little vegetation. Uncommon resident in study area. Endemic to southern Africa.	NT ¹ NT ²	LOW, breeding, LOW, foraging
Chestnutbanded Plover	<i>Charadrius pallidus</i>	Saline lagoons, saline and brackish pans, saltworks, occasionally estuaries and sandy lagoons. Uncommon resident in study area.	NT ¹ NT ²	LOW, breeding, LOW, foraging
Secretarybird	<i>Sagittarius serpentarius</i>	Widespread across South Africa, occurring in savanna and open grassland from coastal regions to high altitudes, but avoids thick bush and forest. Sensitive to disturbance and high human population numbers - higher numbers usually found in conservation areas. Common resident in study area.	NT ¹ VU ²	LOW, breeding, MEDIUM, foraging
Black Stork	<i>Ciconia nigra</i>	Feeds in or around marshes, dams, rivers and estuaries; breeds in mountainous regions. Common resident in study area.	NT ¹ LC ² Protected (NEMBA)	ZERO, breeding, LOW, foraging

¹Status according to Barnes 2000.

²Status according to IUCN 2010. IUCN Red List of Threatened Species. Version 2010.3. (www.iucnredlist.org).
Downloaded on 8 September 2014.

Appendix 4: Checklist of plant species recorded during previous botanical surveys in the study area and surrounds.

(Species from quarter degree grid in which the site is located as well as surrounding grids in which similar vegetation is found. Species marked with a "1" were recorded in an Acocks site nearby.)

¹*Alternanthera pungens*
¹*Amaranthus thunbergii*
Aptosimum albomarginatum Marloth & Engl.
¹*Aptosimum marlothii*
Aptosimum procumbens (Lehm.) Steud.
¹*Aptosimum spinescens*
¹*Aristida adscensionis* L.
Aristida congesta Roem. & Schult. subsp. *congesta*
¹*Aristida congesta* subsp. *barbicollis*
Asparagus bechuanicus Baker
Asparagus glaucus Kies
Barleria rigida Nees
¹*Berkheya annectens*
Blepharis mitrata C.B.Clarke
¹*Brachiaria marlothii*
Bulbine frutescens (L.) Willd.
Calobota spinescens (Harv.) Boatwr. & B.-E.van Wyk
¹*Chamaesyce inaequilatera*
Chascanum pumilum E.Mey.
Chloris virgata Sw.
Chrysocoma ciliata L.
Chrysocoma obtusata (Thunb.) Ehr.Bayer
¹*Convolvulus sagittatus*
Coronopus integrifolius (DC.) Spreng.
Cucumis africanus L.f.
Cullen biflora (Harv.) C.H.Stirt.
Cullen tomentosum (Thunb.) J.W.Grimes
Cynanchum orangeanum (Schltr.) N.E.Br.
¹*Deverra denudata* subsp. *aphylla*
Dicoma capensis Less.
Dipcadi viride (L.) Moench
¹*Enneapogon desvauxii* P.Beauv.
Enneapogon scaber Lehm.
¹*Eragrostis annulata* Rendle ex Scott-Elliot
Eragrostis biflora Hack. ex Schinz
Eragrostis echinochloidea Stapf
Eragrostis homomalla Nees
Eragrostis lehmanniana Nees var. *lehmanniana*
¹*Eragrostis lehmanniana* var. *chaunantha*
Eragrostis nindensis Ficalho & Hiern
Eragrostis obtusa Munro ex Ficalho & Hiern
Eragrostis porosa Nees
¹*Eragrostis procumbens* Nees
¹*Eragrostis truncata* Hack.
Euphorbia inaequilatera Sond. var. *inaequilatera*
Galenia africana L.
Gazania jurineifolia DC. subsp. *scabra* (DC.) Roessler
Gazania krebsiana Less. subsp. *arctotoides* (Less.) Roessler

Geigeria acaulis (Sch.Bip.) Benth. & Hook.f. ex Oliv. & Hiern
 Geigeria filifolia Mattf.
 Geigeria ornativa O.Hoffm. subsp. ornativa
 Gisekia pharnacioides L. var. pharnacioides
¹Gnidia polycephala
¹Gomphocarpus fruticosus subsp. fruticosus
 Helichrysum herniarioides DC.
 Helichrysum lucilioides Less.
¹Heliotropium lineare
 Hermannia bicolor Engl. & Dinter
¹Hermannia coccocarpa
¹Hermannia comosa Burch. ex DC.
 Hermannia pulverata Andrews
 Hermannia spinosa E.Mey. ex Harv.
 Hoodia flava (N.E.Br.) Plowes
 Hypertelis salsoloides (Burch.) Adamson var. salsoloides
¹Indigofera alternans DC. var. alternans
 Indigofera auricoma E.Mey.
 Jamesbrittenia tysonii (Hiern) Hilliard
 Kedrostis africana (L.) Cogn.
 Kohautia cynanchica DC.
¹Lessertia pauciflora Harv. var. pauciflora
¹Leucas capensis
 Limeum aethiopicum Burm.f. var. aethiopicum
 Limeum aethiopicum Burm.f. var. glabrum Moq.
 Limeum aethiopicum Burm.f. var. lanceolatum Friedrich
¹Limeum aethiopicum subsp. aethiopicum var. aethiopicum
 Limeum argute-carinatum Wawra ex Wawra & Peyr. var. argute-carinatum
 Limeum myosotis H.Walter var. confusum Friedrich
 Limeum myosotis H.Walter var. myosotis
 Lophiocarpus polystachyus Turcz.
 Lotononis platycarpa (Viv.) Pic.Serm.
¹Lycium cinereum
 Lycium horridum Thunb.
 Lycium schizocalyx C.H.Wright
 Mestoklema arboriforme (Burch.) N.E.Br. ex Glen
 Microloma incanum Decne.
 Microloma longitubum Schltr.
¹Mollugo cerviana (L.) Ser. ex DC. var. cerviana
¹Monechma incanum (Nees) C.B.Clarke
 Monechma spartioides (T.Anderson) C.B.Clarke
 Nolletia gariepina (DC.) Mattf.
¹Oligomeris dipetala var. dipetala
 Oropetium capense Stapf
 Osteospermum rigidum Aiton var. rigidum
¹Osteospermum spinescens
¹Panicum lanipes
 Panicum maximum Jacq.
 Pegolettia retrofracta (Thunb.) Kies
 Peliostomum leucorrhizum E.Mey. ex Benth.
 Pentzia incana (Thunb.) Kuntze
 Pentzia lanata Hutch.
 Phymaspermum parvifolium (DC.) Benth. & Hook. ex B.D.Jacks.
 Polygala leptophylla Burch. var. leptophylla

¹*Polygala seminuda* Harv.
Prosopis velutina Wooton EXOTIC
Rhigozum trichotomum Burch.
¹*Rosenia humilis* (Less.) K.Bremer
Salsola calluna Fenzl ex C.H.Wright
Salsola kalaharica Botsch.
¹*Salvia verbenaca* L.
Schoenoplectus leucanthus (Boeck.) J.Raynal
Senecio niveus (Thunb.) Willd.
Sericocoma avolans Fenzl
Sesamum capense Burm.f.
Setaria verticillata (L.) P.Beauv.
Sisymbrium burchellii DC. var. *burchellii*
Solanum namaquense Dammer
¹*Sporobolus ioclados*
Sporobolus nervosus Hochst.
Stipagrostis anomala De Winter
Stipagrostis ciliata (Desf.) De Winter var. *capensis* (Trin. & Rupr.) De Winter
Stipagrostis namaquensis (Nees) De Winter
¹*Stipagrostis obtusa* (Delile) Nees
Sutherlandia frutescens (L.) R.Br.
Syringodea concolor (Baker) M.P.de Vos
Tetragonia arbuscula Fenzl
Tetragonia calycina Fenzl
¹*Thesium hystrix*
Thesium lineatum L.f.
Tortula atrovirens (Sm.) Lindb.
Trachyandra karrooica Oberm.
Tragus berteronianus Schult.
¹*Tragus racemosus* (L.) All.
Tribulus terrestris L.
¹*Tribulus zeyheri* subsp. *zeyheri*
Ursinia nana DC. subsp. *nana*
Wiborgia monoptera E.Mey.
Xerocladia viridiramis (Burch.) Taub.
¹*Zygophyllum flexuosum*
Zygophyllum lichtensteinianum Cham. & Schltld.
¹*Zygophyllum microcarpum*

Appendix 5: Flora and vertebrate animal species protected under the National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004)

(as updated in R. 1187, 14 December 2007)

CRITICALLY ENDANGERED SPECIES

Flora

Adenium swazicum
Aloe pillansii
Diaphanthe millarii
Dioscorea ebutsniorum
Encephalartos aemulans
Encephalartos brevifoliolatus
Encephalartos cerinus
Encephalartos dolomiticus
Encephalartos heenanii
Encephalartos hirsutus
Encephalartos inopinus
Encephalartos latifrons
Encephalartos middelburgensis
Encephalartos nubimontanus
Encephalartos woodii

Reptilia

Loggerhead sea turtle
Leatherback sea turtle
Hawksbill sea turtle

Aves

Wattled crane
Blue swallow
Egyptian vulture
Cape parrot

Mammalia

Riverine rabbit
Rough-haired golden mole

ENDANGERED SPECIES

Flora

Angraecum africae
Encephalartos arenarius
Encephalartos cupidus
Encephalartos horridus
Encephalartos laevifolius
Encephalartos lebomboensis
Encephalartos msinganus
Jubaeopsis caffra
Siphonochilus aethiopicus
Warburgia salutaris
Newtonia hilderbrandi

Reptilia

Green turtle
Giant girdled lizard
Olive ridley turtle
Geometric tortoise

Aves

Blue crane
Grey crowned crane
Saddle-billed stork
Bearded vulture
White-backed vulture
Cape vulture
Hooded vulture
Pink-backed pelican
Pel's fishing owl
Lappet-faced vulture

Mammalia

Robust golden mole
Tsessebe
Black rhinoceros
Mountain zebra
African wild dog
Gunning's golden mole
Oribi
Red squirrel
Four-toed elephant-shrew

VULNERABLE SPECIES

Flora

Aloe albida
Encephalartos cycadifolius
Encephalartos Eugene-maraisii
Encephalartos ngovanus
Merwillia plumbea
Zantedeschia jucunda

Aves

White-headed vulture
Tawny eagle
Kori bustard
Black stork
Southern banded snake eagle
Blue korhaan
Taita falcon
Lesser kestrel
Peregrine falcon
Bald ibis

Ludwig's bustard
Martial eagle
Bataleur
Grass owl

Mammalia

Cheetah
Samango monkey
Giant golden mole
Giant rat
Bontebok
Tree hyrax
Roan antelope
Pangolin
Juliana's golden mole
Suni
Large-eared free-tailed bat
Lion
Leopard
Blue duiker

PROTECTED SPECIES

Flora

Adenia wilmsii
Aloe simii
Clivia mirabilis
Disa macrostachya
Disa nubigena
Disa physodes
Disa procera
Disa sabulosa
Encephelartos altensteinii
Encephelartos caffer
Encephelartos dyerianus
Encephelartos frederici-guilielmi
Encephelartos ghellinckii
Encephelartos humilis
Encephelartos lanatus
Encephelartos lehmannii
Encephelartos longifolius
Encephelartos natalensis
Encephelartos paucidentatus
Encephelartos princeps
Encephelartos senticosus
Encephelartos transvenosus
Encephelartos trispinosus
Encephelartos umbeluziensis
Encephelartos villosus
Euphorbia clivicola
Euphorbia meloformis
Euphorbia obesa
Harpagophytum procumbens

Harpagophytum zeyherii
Hoodia gordonii
Hoodia currorii
Protea odorata
Stangeria eriopus

Amphibia

Giant bullfrog
African bullfrog

Reptilia

Gaboon adder
Namaqua dwarf adder
Smith's dwarf chameleon
Armadillo girdled lizard
Nile crocodile
African rock python

Aves

Southern ground hornbill
African marsh harrier
Denham's bustard
Jackass penguin

Mammalia

Cape clawless otter
South African hedgehog
White rhinoceros
Black wildebeest
Spotted hyaena
Black-footed cat
Brown hyaena
Serval
African elephant
Spotted-necked otter
Honey badger
Sharpe's grysbok
Reedbuck
Cape fox



Appendix 6B: Avifauna Assessment

SPECIALIST ASSESSMENT REPORT: AVIFAUNA

PROPOSED 75 MEGAWATT HELENA PHOTOVOLTAIC FACILITY 3 AND ASSOCIATED TRANSMISSION LINE NEAR COPPERTON, NORTHERN CAPE



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PHOTOVOLTAIC FACILITY 3 NEAR COPPERTON, NORTHERN CAPE**

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DECLARATION OF INDEPENDENCE

I, Chris van Rooyen as duly authorised representative of Chris van Rooyen Consulting, and working under the supervision of and in association with Albert Froneman (SACNASP Zoological Science Registration number 400177/09) as stipulated by the Natural Scientific Professions Act 27 of 2003, hereby confirm my independence (as well as that of Chris van Rooyen Consulting) as a specialist and declare that neither I nor Chris van Rooyen Consulting have any interest, be it business, financial, personal or other, in any proposed activity, application or appeal in respect of which SiVEST was appointed as environmental assessment practitioner in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), other than fair remuneration for worked performed, specifically in connection with the Environmental Impact Assessment for the proposed 75 Megawatt Helena Photovoltaic Facility 3 and associated transmission Line near Copperton, Northern Cape.



Full Name: Chris van Rooyen

Title / Position: Director

BIRD IMPACT ASSESSMENT STUDY: PROPOSED 75 MEGAWATT HELENA PHOTOVOLTAIC FACILITY 3 NEAR COPPERTON, NORTHERN CAPE

EXECUTIVE SUMMARY

The proposed project will encompass the installation of a solar PV field and associated components near Copperton in the Northern Cape Province, in order to generate electricity that is to be fed into the Eskom grid at the Kronos Main Transmission Station (MTS). The facility will have a maximum export capacity of 75MW. The proposed development area is approximately 530 ha. The voltage of the connection lines from the solar PV energy facility substation to the grid is likely to be 132kV.

The proposed site is situated approximately 9km south of the town of Copperton, in the Northern Cape Province. The habitat in the broader development area is highly homogenous and consists of extensive sandy and gravel plains with low shrub. The vegetation on the site itself consists mostly of shrubs scattered between bare patches of sand and gravel.

An estimated 121 species could potentially occur in the study area. Of these, 10 are South African Red Data species, 18 are southern African endemics and 29 are near-endemics. This means that 8.2% of the species that could potentially occur in the study area are Red Data species, and 38.8% are southern African endemics or near-endemics. Overall, the study area potentially contains a total of 47 endemics and near-endemics, which is 28% of the 167 southern African endemics and near-endemics (Hockey *et al.* 2005).

The potential impact on avifauna associated with the proposed development is as follows:

- Temporary displacement due to disturbance associated with the construction of the solar plant and associated infrastructure;
- Collisions with the solar panels;
- Permanent displacement due to habitat transformation; and
- Collisions with the associated power lines resulting in mortality.

The negative impacts of the proposed Helena PV solar facility on local priority avifauna will range from low to high, depending on the type of impact.

In the case of the PV plant and associated infrastructure, the displacement impact due to disturbance during construction is rated as high to start with, and will remain as such after application of mitigation measures. In the case of habitat transformation during operation, the displacement impact is medium – negative and will remain as such after the application of mitigation measures. The impact of direct mortality due to collisions with the solar panels is likely to be low. The displacement impact associated with the construction of the on-site substation will be low, but should not be viewed in isolation, but rather as part of the overall displacement impact associated with the PV plant.

The proposed 132kV circuit grid connection will have a medium negative collision impact on avifauna during operation which should be reduced to low-negative through the application of anti-collision mitigation measures. The impact of displacement caused by the construction of

BIRD IMPACT ASSESSMENT STUDY: PROPOSED 75 MEGAWATT HELENA PHOTOVOLTAIC FACILITY 3 NEAR COPPERTON, NORTHERN CAPE

the power line will be medium negative, but it could be reduced to low if the Martial Eagle nest on the Hydra-Kronos 400kV line next to Kronos MTS could be re-located.

The cumulative impacts of the facility on priority avifauna will range from major to minor on a local scale, and minor to insignificant on a regional scale.

1 INTRODUCTION

The proposed project will encompass the installation of a solar PV field and associated components near Copperton in the Northern Cape Province, in order to generate electricity that is to be fed into the Eskom grid. The facility will have a maximum export capacity of 75MW. The proposed development area is approximately 530 ha, however it is envisaged that the 75MW energy facility layout will only require approximately 250 ha. The voltage of the connection lines from the solar PV energy facility substation to the grid is likely to be 132kV.

1.1 Project Description

This proposed PV energy facility forms one of three PV energy facilities with a 75MW export capacity that BioTherm are proposing to develop on Portion 3 of the farm Klipgats Pan No 117 (Figure 1). In order to accommodate the Department of Energy's (DoE) competitive bidding process for procuring renewable energy from Independent Power Producers in South Africa, each PV energy facility will be developed under a separate Special Purpose Vehicle (SPV) and therefore each requires a separate Environmental Authorisation. However, the possibility to allow shared associated infrastructure will be considered.

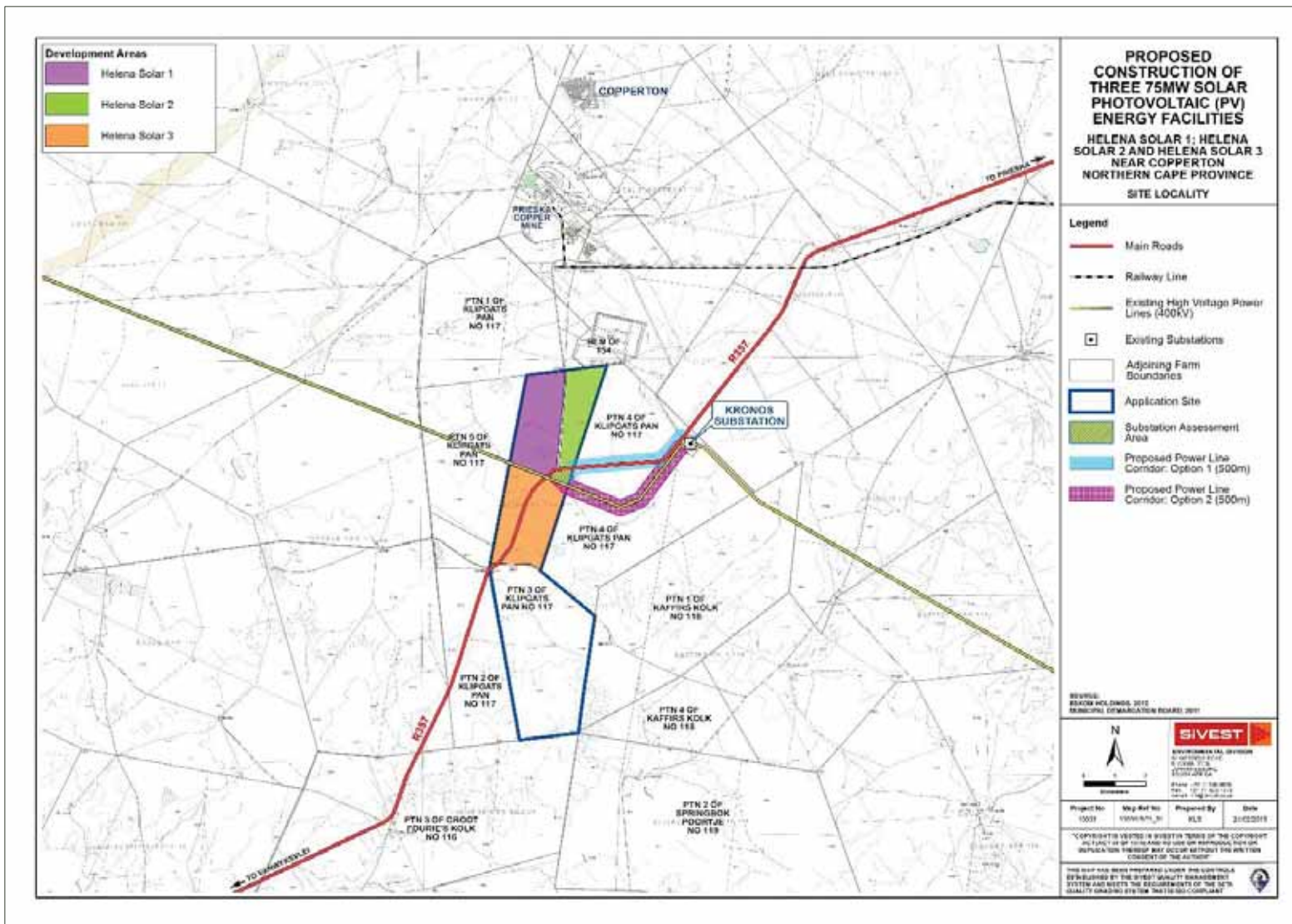


Figure 1: Proposed solar PV energy facility study area (Source: SiVEST)

The key technical details and infrastructure required is presented in the table below (**Error! Not a valid bookmark self-reference.**).

Table 1: Helena Solar 3 phase summary

Phase Name	DEA Reference	Farm name and area	Technical details and infrastructure necessary for each phase
Helena Solar 1	14/12/16/3/3/2/765	Portion 3 of Klipgats Pan No 117 (PV site) and Portion 4 of Klipgats Pan No 117 (power lines) PV Site Area: 527.20 ha	<ul style="list-style-type: none"> ▪ Approximately 300 000 solar PV panels with a total export capacity of 75MW; ▪ Panels will be either fixed axis mounting or single axis tracking solutions, and will be either crystalline silicon or thin film technology; ▪ Onsite switching station, with the transformers for voltage step up from medium voltage to high voltage; ▪ The panels will be connected in strings to inverters, approximately 43 inverter stations will be required throughout the site. Inverter stations will house 2 x 1MW inverters and 1 x 2MVA transformers; ▪ DC power from the panels will be converted into AC power in the inverters and the voltage will be stepped up to 22-33kV (medium voltage) in the transformers. ▪ The 22-33kV cables will be run underground in the facility to a common point before being fed to the onsite substation where the voltage will typically be stepped up to 132kV. ▪ Grid connection is to the Kronos Main Transmission Station (MTS). A power line with a voltage of 132kV is proposed and will run from the onsite substation to the Kronos substation. The distance will be about 4km. The final grid connection voltage will be below 275kV. ▪ A laydown area for the temporary storage of materials during the construction activities; ▪ Access roads and internal roads; ▪ Construction of a car park and fencing around the project; and ▪ Administration, control and warehouse buildings

1.2 Solar Field

Solar PV panels are usually arranged in rows or 'arrays' consisting of a number of PV panels. The area required for the PV panel arrays will likely need to be entirely cleared or graded. Where tall vegetation is present, this vegetation will be removed from the PV array area.

Approximately 300 000 solar PV panels will be required per project for a total export capacity of 75MW. Support structures will be either fixed axis mounting or single axis tracking solutions and the modules will be either crystalline silicon or thin film technology. The solar PV panels are variable in size, and are affected by advances in technology between project inception and project realisation. The actual size of the PV panels to be used will be determined in the final design stages of the project. The PV panels are mounted onto metal frames which are usually aluminium. Rammed or screw pile foundations are commonly used to support the panel arrays (Figure 2).

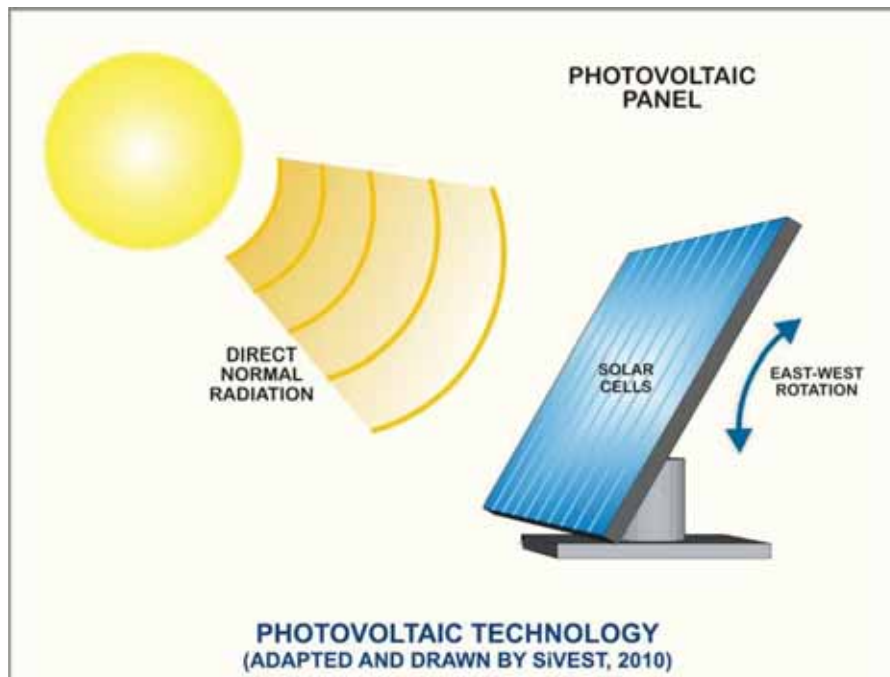


Figure 2: Example of a Photovoltaic Panel with tracking capability.

1.3 Associated Infrastructure

1.3.1 Electrical Infrastructure

The solar PV panel arrays are connected to each other in strings, which are in turn connected to inverters. For a 75MW size facility, typically 2MW inverter stations which are containerised stations housing 2x1MW inverters and 1x2MVA transformers will be used; therefore approximately 43 inverter stations will be required throughout the site for the proposed solar PV energy facility (Figure 3). DC power from the panels will be converted into AC power in the inverters and the voltage will be stepped up to 22-33kV (medium voltage) in the transformers.

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The 22-33kV cables will be run underground in the facility to a common point before being fed to the onsite substation and switching station where the voltage will typically be stepped up to 132kV. A Power line with a voltage of up to 132kV will run from the onsite substation to the existing Kronos MTS. The distance will be about 5km.

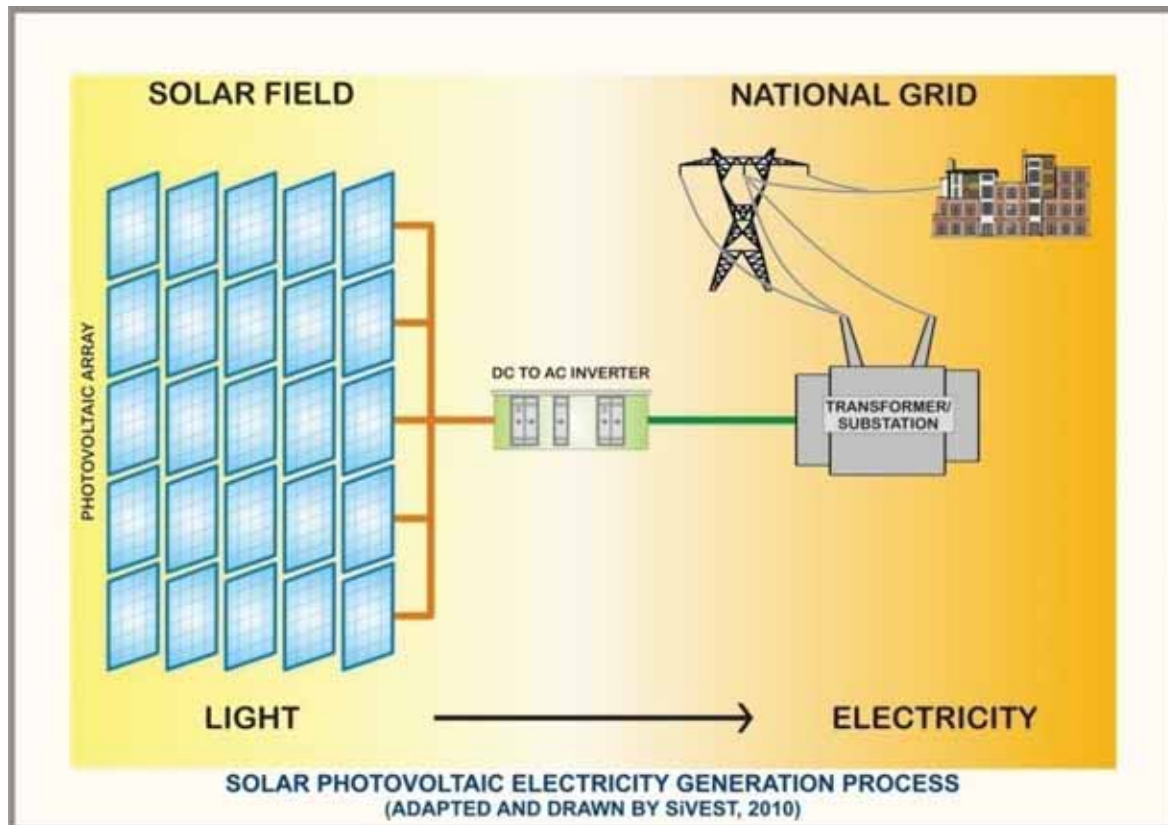


Figure 3: PV process

1.3.2 Buildings

The solar field will require onsite buildings which will be used in the daily operation of the plant and includes an administration building (office). The buildings will likely be single storey buildings which will be required to accommodate the following:

- Control room
- Workshop
- High Voltage (HV) switchgear
- Mess Room
- Toilets
- Warehouse for storage

1.3.3 Construction Lay-down Area

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A general construction lay-down area will be required for the construction phase of the proposed solar PV energy facility. The size of this area is yet to be determined, but 3 to 5 hectares is likely.

1.3.4 Other Associated Infrastructure

Other associated infrastructure includes the following:

- Access roads and internal roads;
- A car park; and
- Fencing around the project.

1.4 Alternatives

Due to the limited space available as well as the constraints of the sensitive areas, no alternative PV panel layouts were identified. It was felt that it would be environmentally preferable to assess one viable panel layout rather than two panel layouts that are not technically or environmentally viable. Other design or layout alternatives have been identified. Two alternative site locations for the substation were also proposed, as well as two alternative route corridors for the proposed power line. Additionally, two road and cabling layout alternatives were identified. Based on the scoping phase specialist findings the substation assessment area was eliminated as an appropriate area for the proposed substation as most of this site was found to be potentially sensitive by the specialists. As such, two alternative substation sites that cover an area of 3 ha each were proposed to be assessed in the EIA phase. Should the other two PV projects that are being proposed by BioTherm on the same farm also be granted EAs and be awarded preferred bidder status by the DoE the possibility of sharing the substation site to reduce the environmental impact will be considered.

The layout for the proposed Helena Solar 3 PV facility is presented in Figure 4.