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case ID: 1662

4 November 2011

Email: karen.versfeld@aurecongroup.com

South African Heritage Resources Act (SAHRA)
111 Harrington Street
Cape Town
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Tel: 021 462 4502

Attention: Mariagrazia Galimberti

Dear M Galimberti

EIA PROCESS FOR THE PROPOSED PHOTOVOLTAIC (SOLAR) ENERGY PLANT ON BADENHORST DAM FARM NEAR DE AAR, NORTHERN CAPE (DEA REF. NO: 12/12/20/2499; NEAS REF NO.: DEAT/EIA/0000608/2011)
AND
EIA PROCESS FOR THE PROPOSED PHOTOVOLTAIC (SOLAR) ENERGY PLANT ON PAARDE VALLEY FARM NEAR DE AAR, NORTHERN CAPE (DEA REF. NO: 12/12/20/2500; NEAS REF NO: DEAT/EIA/0000607/2011)

Mulilo Renewable Energy (Pty) Ltd aims to construct photovoltaic solar energy facilities near De Aar and you have been identified as a relevant commenting authority. The Draft Scoping Reports (DSR) for the above-mentioned projects has been compiled and will be made available for public comment on 8 November 2011. Please find attached one hard copy and two soft copies for your review. We request that you supply us with the Departments comments before 5 January 2012.

Should you require any further information or have any queries please contact the undersigned.

Yours sincerely
AURECON

KAREN VAN DER WESTHUIZEN *(Cert. Nat. Sci.)*
Practitioner: Environmental & Advisory Services

KAREN VERSFELD *(Can. Nat. Sci.)*
Practitioner: Environmental & Advisory Services

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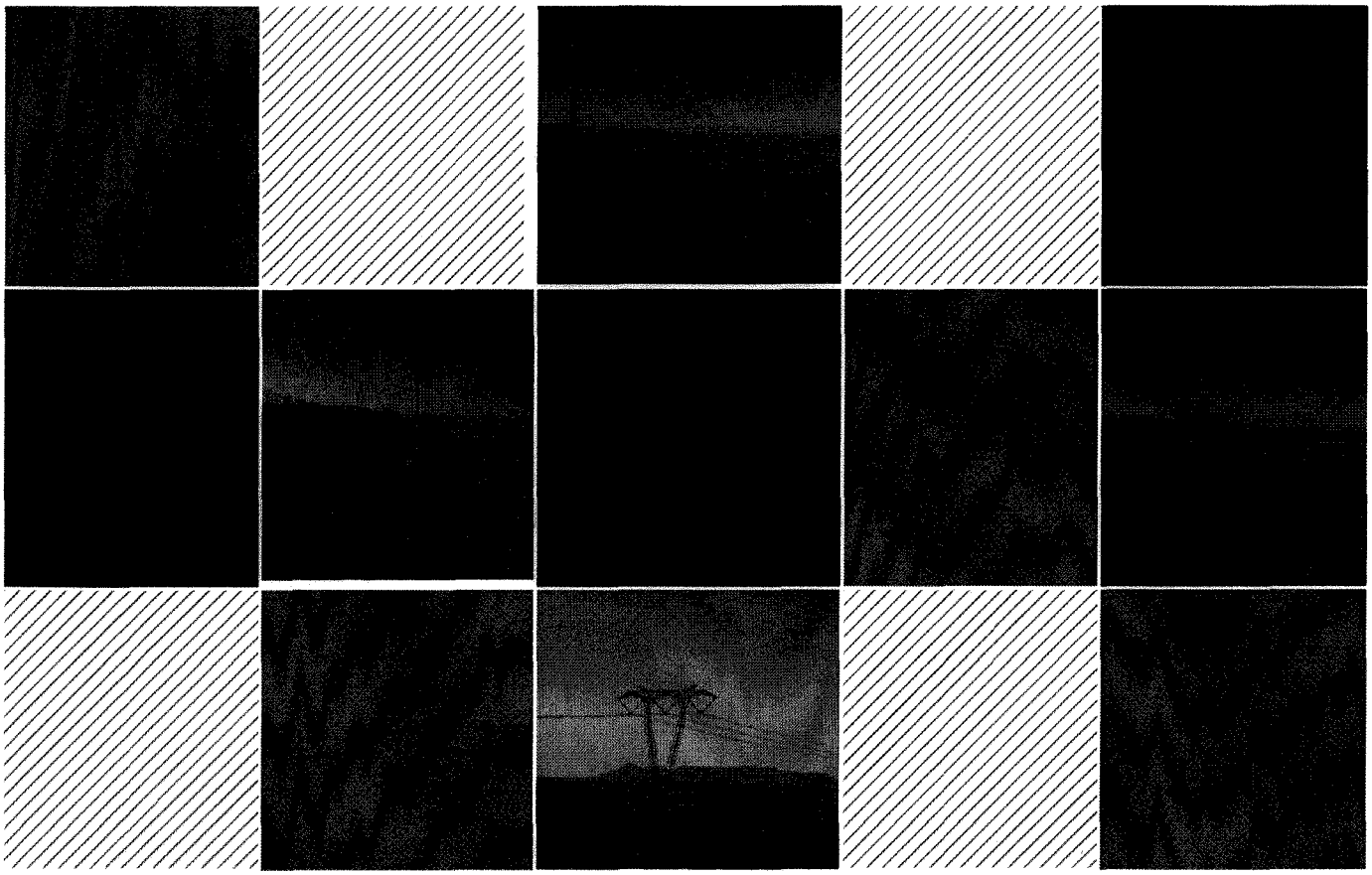

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MULILO
RENEWABLE ENERGY

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS PROPOSED PHOTOVOLTAIC (SOLAR) ENERGY FACILITY ON PAARDE VALLEY FARM NEAR DE AAR, NORTHERN CAPE

DEA REF NO.: 12/12/20/2499 & NEAS REF NO.: DEAT/EIA/0000608/2011

DRAFT SCOPING REPORT- Report No: 5759
Submission date: **8 November 2010**

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OMGEWINGSINVLOEDBEPALING: BEOOGDE FOTOVOLTAÏESE SONENERGIE-AANLEGTE OP DIE PLAAS PAARDE VALLEY NABY DE AAR, NOORD-KAAP

NOVEMBER 2011

DOS VERWYSINGSNR. 12/12/20/2500
NEAS VERWYSINGS NR: DEAT/EIA/0000607/2011

OPSOMMENDE DOKUMENT
KONSEP OMVANGBEPALINGSVERSLAG

Agtergrond

Mulilo Renewable Energy (Edms) Bpk (Mulilo) beoog om drie fotovoltaïese (sonenergie) aanlegte naby De Aar in die Noord-Kaap op te rig.

In terme van die Wet op Nasionale Omgewingsbestuur (Nr. 107 van 1998) (soos gewysig) (WNOB), het die beoogde ontwikkeling verskeie gelyste bedrywighede tot gevolg wat 'n magtiging van die bevoegde owerheid benodig voordat daar voorgegaan kan word. Aurecon South Africa (Edms) Bpk is deur Mulilo aangestel om die nodige magtigingsproses uit te voer.

Beoogde projek

Die beoogde aanleg sal uit die volgende bestaan:

- 'n Fotovoltaïese (FV) komponent wat bestaan uit 'n rye FV-panele en die verwante infrastruktuur wat nodig is om 75-150 MW via die fotovoltaïese effek op te wek.
- 'n Oorhoofse transmissielyn (2.5 km lank) 132 kV word beplan om die beoogde (son) FV-aanleg met Eskom se netwerk (Hydra-substasie) te verbind. Infrastruktuur vir die voorsiening van water (sal bepaal word deur die bron waarvandaan water verkry word):
    - *Munisipale voorsiening*: Indien drinkwater vanaf die Emthanjeni Munisipaliteit bekom word, mag dit nodig wees om 'n pyplyn te lê wat die water vanaf die munisipale netwerk na die terrein sal neem.
      Grondwater: Indien water van boorgate verkry word, sal Mulilo miskien die nodige infrastruktuur, soos pyplyne en bergingsfasiliteite, moet bou.

...efte en Wenslikheid

...nubare energie is reeds goed ...des vir die wenslikheid van

Doel van hierdie dokument

Hierdie dokument is 'n opsomming van die Konsep Omvangbepalingsverslag (KOBV) en Studieplan vir die OIB vir die beoogde fotovoltaïese (son) energie-aanlegte naby De Aar, Noord-Kaap. Dit gee 'n kort agtergrond en uiteensetting van die proses van openbare deelname tot dusver, asook 'n lys van projek-alternatiewe en die moontlike impakte (tesame met die voorgestelde spesialisstudies, waar nodig) wat tydens die OIB-fase verder ondersoek moet word.

Lees asb. hierdie Opsommende Dokument, en verkieslik die volledige Omvangbepalingsverslag, deur en dien u kommentaar op die beoogde projek teen **5 Januarie 2012** in. Lewer kommentaar deur 'n brief te skryf, te bel of 'n e-pos aan die Kantoor vir Openbare Deelname te stuur. Alle OIB-dokumentasie is beskikbaar op Aurecon (Edms) Bpk (Aurecon) se webblad (**www.aurecongroup.com** – verander "Current Location" na "South Africa" en volg die "Public Participation"-skakel).

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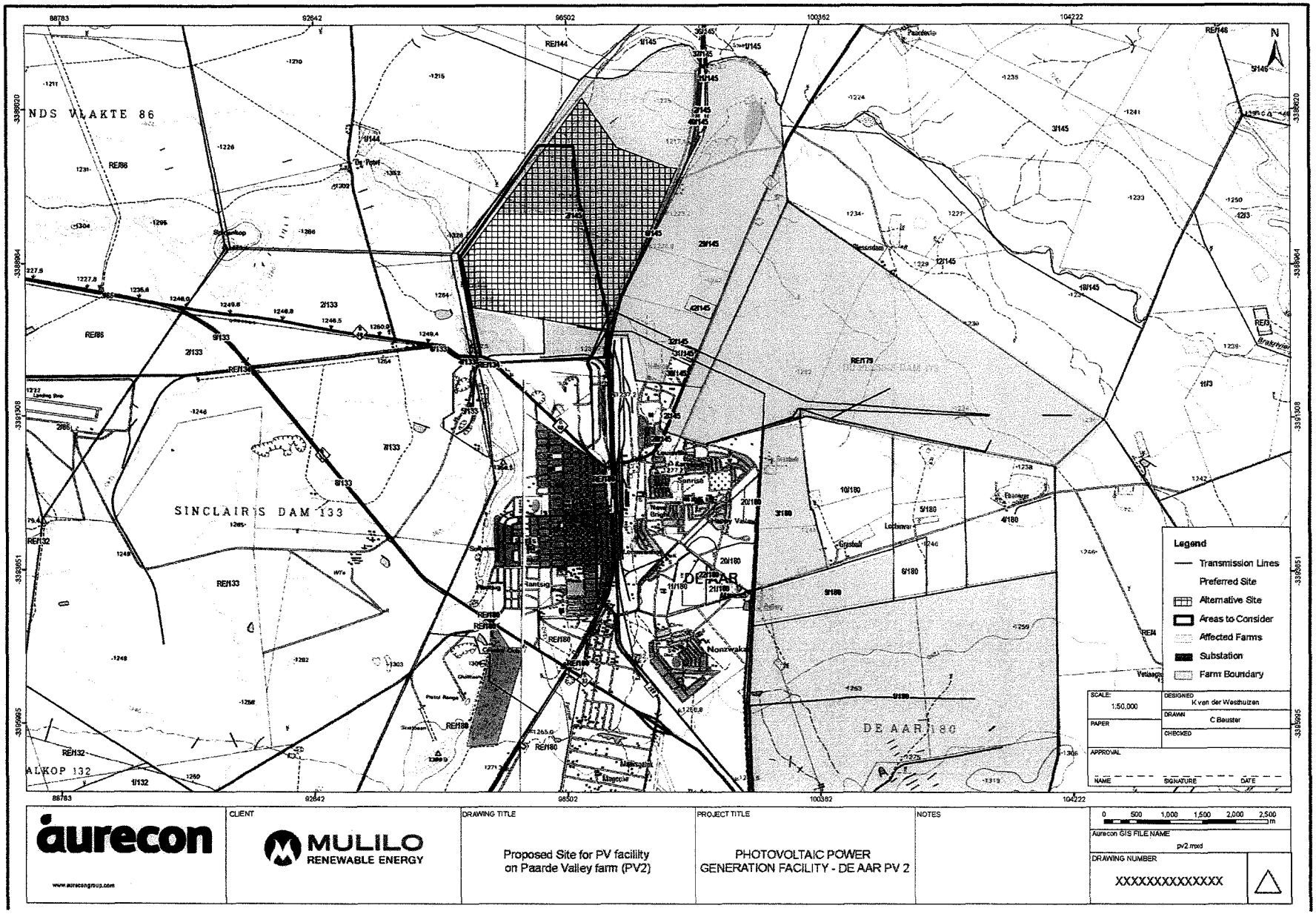

Figuur 1: Ligging van die beoogde FV energie-aanleg op die Plaas Paarde Valley naby De Aar, Noord-Kaap

- Suid-Afrika beskik oor 'n groot sonenergie-potensiaal wat benut moet word
- As gevolg van kommer oor klimaatsverandering en die toenemende uitbuiting van nie-hernubare hulpbronne, verkeer lande onder toenemende internasionale druk om meer hernubare kragopwekking te wek.
- Die oprigting van die beoogde De Aar FV-kragopwekkingsaanlegte sal die bestaande elektrisiteitsnetwerk vir die gebied versterk. Die projek kan ook bydra tot die voldoening aan die nasionale teiken vir energie wat deur die Departement van Energie (DvE) bepaal is, naamlik dat 30% van alle nuwe kragopwekking vanaf Onafhanklike Kragvoorsieners bekom moet word.
- Die ontwikkeling en oordrag van vaardighede is een van Mulilo te top prioriteite en gemeenskapbetrokkenheid sal sover as moontlik versterk word. Ongeveer 200 tot 900 werkgeleenthede sal tydens die konstruksiefase geskep word – afhangende van die aankoopmetode en die hoofkontrakteur.
- Besoedeling word verlaag omdat kragopwekking vanaf FV-aanlegte baie minder per MW/h as steenkool-aangedrewe aanlegte opwek.

Beskrywing van terrein

Die beoogde terrein vir die oprigting van die fotovoltaïese aanlegte is die Plaas Paarde Valley (Plaas Nr. 145 Gedeelte 2). Die Plaas Paarde Valley is ongeveer 4.5 km van die Nonzwakazi informele nedersetting geleë, en ongeveer 2 km noord van De Aar. Die grondgebruik op terrein is hoofsaaklik landbou, en word meestal vir as weiding vir skaap en vee benut. Die gedeelte van die plaas waarop die beoogde terrein geleë is behoort aan die Marais - Louis Charles Trustees. Mulilo het 'n langtermynoorkoms vir die beoogde projek met die eienaars gesluit.

Projek-alternatiewe

Die volgende lewensvatbare alternatiewe is vir verdere ondersoek in die Omgewingsinvloedbepalingsverslag (OIB-verslag) geïdentifiseer:

- Alternatiewe plasings:
  - Een alternatiewe ligging op die Plaas Paarde Valley.
- Alternatiewe bedrywighede:
  - Opwekking van sonenergie by wyse van FV; en
  - "No-go" (geen-ontwikkeling) alternatief vir die opwekking van FV-energie.
- Alternatiewe terreinuitlegte:
  - Twee alternatiewe uitlegte.
- Alternatiewe tegnologieë:
  - Monitering van FV-panele:
    - Vaste-as fotovoltaïes;
    - Enkel-as opsporings-FV; en
    - Gekonsentreerde dubbel-as opsporing.
  - Alternatiewe fondasies:
    - Geïsoleerde betonbasisse;
    - Aaneenlopende betonbasisse;
    - Betonstapel; en
    - Ondersteuningstruktuur wat onder spanning is.

Geïdentifiseerde impakte

[redacted] omgewingsimpakte is tydens hierdie omvangbepalingsfase vir [redacted] tydens die OIB-fase geïdentifiseer. Die volgende

- ***Impakte tydens die konstruksiefase op die biofisiese en sosio-ekonomiese omgewing:***
    - Versteuring van flora en fauna;
    - Sedimentasie en erosie van waterlope;
    - Impak op verkeer;
    - Berging van gevaarhoudende stowwe op terrein;
    - Impak van stof;
    - Geraasbesoedeling;
    - Impak op plaaslike ekonomie (werkskepping) en maatskaplike toestande;
    - Ontwikkeling van vaardighede; en
    - Toerisme.
- ***Impakte van die bedryfsfase op die biofisiese omgewing:***
    - Impak op flora;
    - Impak op fauna (avifauna); en
    - Impak op waterhulpbronne.
- ***Impakte van die bedryfsfase op die maatskaplike omgewing:***
    - Impak op erfenishulpbronne (paleontologie ingesluit);
    - Visuele impakte;
    - Impak op kragopwekking;
    - Impak op plaaslike ekonomie (werkskepping) en maatskaplike toestande; en
    - Impak op landbougrond.

Die volgende spesialisstudies sal deur deskundiges aangevra word om meer omvattende inligting te bekom oor daardie omgewingsimpakte wat waarskynlik die grootste kommer wek, en/of waaroor daar nie genoeg inligting beskikbaar is nie, naamlik:

Tabel 1: Deskundige wat aangestel sal word

Beoordeling	Maatskappy	Kontakpersoon
Beoordeling van visuele impak	Privaatkonsultant	Karen Hansen
Beoordeling van paleontologiese impak	*Natura Viva*	John Almond
Ekologiese invloedbepaling	*David Hoare Consulting*	David Hoare
Bepaling van impak op voëls	Privaatkonsultant	Doug Harebottle
Landboubepaling	*SiVEST*	Kurt Barichievy
Beoordeling van Erfenis-impak	*ACO Associates*	Tim Hart
Akwatiese ekologie	Privaatkonsultant	Toni Belcher
Hidrologie	*Aurecon South Africa*	Nicholas Walker

Omvangbepalingsproses kragtens die OIB-regulasies

sies (Goewermentskennisgewing (GK) Nr. 544, 545 en 546) wat kragtens die WNOB tifiseer sekere bedrywighede wat 'n "betekenisvolle nadelige invloed op die omgewing gelyste bedrywighede vereis 'n omgewingsmagtiging van die bevoegde energie-aansoeke, naamlik die Departement van Omgewingsake (DOS), voordat ag word.

het die volgende gelyste bedrywighede kragtens die WNOB tot : GK Nr. 545: Bedrywigheid Nr. 1 en GK Nr. 546: Bedrywigheid via die OIB-proses, soos uiteengesit in Regulasie 543 van eer word op die resultate van hierdie OIB-proses.

OIB-proses

Die OIB-proses bestaan uit 'n Aanvanklike Aansoekfase, 'n Omvangbepalingsfase en 'n OIB-fase. Die doel van die Aanvanklike Aansoekfase is om die projek van stapel te stuur deur die indiening van die nodige departementele aansoekvorms. Die doel van die Omvangbepalingsfase is om moontlike positiewe en negatiewe impakte (beide maatskaplik en biofisies) wat die beoogde projek tot gevolg mag hê te identifiseer en te beskryf, en om te bepaal watter lewensvatbare alternatiewe meer omvattend in die OIB-fase ondersoek moet word.

Die doel van die OIB-fase is om daardie alternatiewe en impakte wat tydens die Omvangsbepaling geïdentifiseer is, in meer detail te ondersoek en te beoordeel, en dan mitigasiemaatreëls aan te beveel wat die negatiewe impakte sal verminder.

Indien die DOS die Omvangbepalingsverslag en die Studieplan na afloop van die Omvangbepalingsfase goedkeur, kan daar met die OIB-proses voortgegaan word.

Hoe jy betrokke kan raak

Openbare deelname is 'n sleutelkomponent van hierdie OIB-proses en stel Belanghebbende en Geaffekteerde Partye (B&GPe) (bv. grondeienaars wat direk geraak word; nasionale, provinsiale en plaaslike owerhede; omgewingsgroepe; gemeenskapsorganisasies; en gemeenskappe) in staat om enige kwessies en bekommernisse te identifiseer wat volgens hulle tydens die OIB-proses aangespreek moet word. Die volgende was tot op datum deel van die OIB-proses:

- Advertensies in die plaaslike koerante, *The Echo* en *Die Volksblad*, waarin die breër publiek in kennis gestel is van die aanvang met die OIB en hulle uitgenooi is om vanaf 4 November 2011 as B&GPe te registreer; en
- Kennisgewings by die ingang na die Plaas Paarde Valley op 8 November 2011.

Alle skriftelike kommentaar kan by Aurecon ingedien word ('n Kommentaarblad word gerieflikheidshalwe hierby aangeheg). Alle kwessies wat skriftelik ontvang is, sal (tesame met die projekspan se antwoorde daarop) in 'n Kommentaar- en Antwoordverslag saamgevat word en ingesluit word as 'n bylae tot die Finale Omvangbepalingsverslag.

Pad Vorentoe

Tydens die proses van openbare deelname behels die beskikbaarstelling van die KOBV by die De Aar Openbare Biblioteek, die Emthanjeni munisipale kantoor in Voortrekkerstraat, en op Aurecon se webblad (www.aurecongroup.com – verander "Current Location" na "South Africa" en volg die "Public Participation"-skakel).

Alle B&GPe is per pos, faks of e-pos in kennis gestel van die tydperk waarbinne hulle kommentaar aan die KOBV kan lewer. B&GPe het 40 dae tyd, tot **5 Januarie 2012**, om hulle skriftelike kommentaar op die KOBV in te dien. Hierdie kommentaar sal by die samestelling van die finale verslag in ag geneem en die kommentaar sal, tesame met die projekspan en applikant se antwoorde daarop, by die verslag ingesluit word.

Verder word aan:

aurecon

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Die Omvangbepalingsverslag sal na afloop van die openbare kommentaartydperk gefinaliseer word, en alle kommentaar vanaf B&GPe sal in die verslag opgeneem word. Die Finale Omvangbepalingsverslag (FOBV) sal daarna by die DOS ingedien word vir oorsig en 'n besluit oor die verslag en gepaardgaande studieplan vir die OIB . Die DOS het 30 dae tyd om kommentaar te lewer, waarna hulle 'n brief kan uitreik waarin hulle die Omvangbepalingsverslag en Studieplan vir die OIB aanvaar, of dit kan verwerp.

Lys van Afkortings

DOS	Departement van Omgewingsake
KOBV	Konsep Omvangbepalingsverslag
OIB	Omgewingsinvloedbepaling
OBP	Omgewingsbestuursprogram
FOBV	Finale Omvangbepalingsverslag
ha	Hektaar
B&GP	Belanghebbende en Geaffekteerde Party
km	Kilometer
kV	Kilovolt
MW	Megawatt
WNOB	Wet op Nasionale Omgewingsbestuur

BEOOGDE FOTOVOLTAÏESE (SON) KRAG AANLEGTE VIR PAARDE VALLEY
PLAAS NABY DE AAR, NOORD-KAAP
NOVEMEBER 2011

MULILO RENEWABLE ENERGY

aurecon

DOS VERWYSINGNR. 12/12/20/2500

EN NEAS VERWYSINGNR: DEAT/EIA0000607/2011

Kommentaarblad vir Belanghebbende en Geaffekteerde Partye

Stuur asseblief hierdie blad teen **5 Januarie 2012** terug aan Aurecon via faks, pos of e-pos.

Vir aandag: Karen van der Westhuizen / Karen Versfeld
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TITEL		**VOORNAAM**			
VOORLETTERS		**VAN**			
ORGANISASIE		**E-POS**			
POSADRES					
		POSKODE			
TEL NO		**FAKS**			
SEL NO		**TAAL**	Engels	Afrikaans	
Het u enige direkte belange in die goedkeuring van afkeuring van die projek vir besigheids of ander redes?				JA	NEE

Lys asseblief enige kollegas/vriende of organisasies wat na u mening geregistreer behoort te word as 'n Belanghebbende of Geaffekteerde Party vir hierdie OIB:

(met kontakbesonderhede indien beskikbaar)

Naam/Organisasie	Posadres	Tel	Faks

Opper gerus enige kwessies of bekommernisse:

(gebruik gerus 'n afsonderlike vel papier indien u so verkies)

.....
.....
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Dankie vir u bydrae

ENVIRONMENTAL IMPACT ASSESSMENT
PROPOSED PHOTOVOLTAIC SOLAR ENERGY FACILITY ON PA
VALLEY FARM NEAR DE AAR,
NORTHERN CAPE

MULILO RENEWABLE ENERGY

NOVEMBER 2011

aurecon

DEA REF. NO. 12/12/20/2500

NEAS REFERENCE NUMBER: DEAT/EIA/0000607/2011

SUMMARY DOCUMENT: DRAFT SCOPING REPORT

Background

Mulilo Renewable Energy (Pty) Ltd (Mulilo) proposes to construct three photovoltaic (solar) energy facilities near De Aar in the Northern Cape.

In terms of the National Environmental Management Act (No. 107 of 1998) (as amended) (NEMA), the proposed development triggers listed activities, which require authorisation from the competent environmental authority before they can be undertaken. Aurecon South Africa (Pty) Ltd has been appointed by Mulilo to undertake the requisite environmental process.

Proposed project

The proposed facility consists of the following:

- A photovoltaic component comprising of numerous arrays of PV panels and associated support infrastructure to generate up to 75-150 MW through the photovoltaic effect.
- A 132 kV overhead transmission line (2.5 km in length) would be required to connect the proposed solar PV facility with Eskom's grid (via Hydra-substation).
- Water supply infrastructure (which will be determined by the source of the water supply):
    - *Municipal supply*: Should potable water be obtained from the Emthanjeni Municipality, it may be necessary to construct a pipeline to direct water from the municipal network to the site location of the proposed activity.
    - *Groundwater:* Should water be sourced from boreholes, it may be necessary for Mulilo to construct the required support infrastructure, such as pipelines and storage facilities.

Purpose of this document

This document provides a summary of the Draft Scoping Report (DSR) and Plan of Study for EIA for the proposed photovoltaic (solar) energy facility near De Aar, Northern Cape. It provides a brief background and overview of the proposed project, a description of the public participation process undertaken thus far, the list of project alternatives and potential impacts (together with proposed specialist studies where applicable) that are proposed to be investigated further in the EIA phase.

Please review this Summary Document and, preferably, the full Scoping Report, and submit your comments on the proposed project by **5 January 2012**. To comment, write a letter, call, fax or e-mail Aurecon. All EIA documents will be available on the Aurecon (Pty) Ltd (Aurecon) website (**www.aurecongroup.com** change "Current Location" to South African and follow the public participation link).

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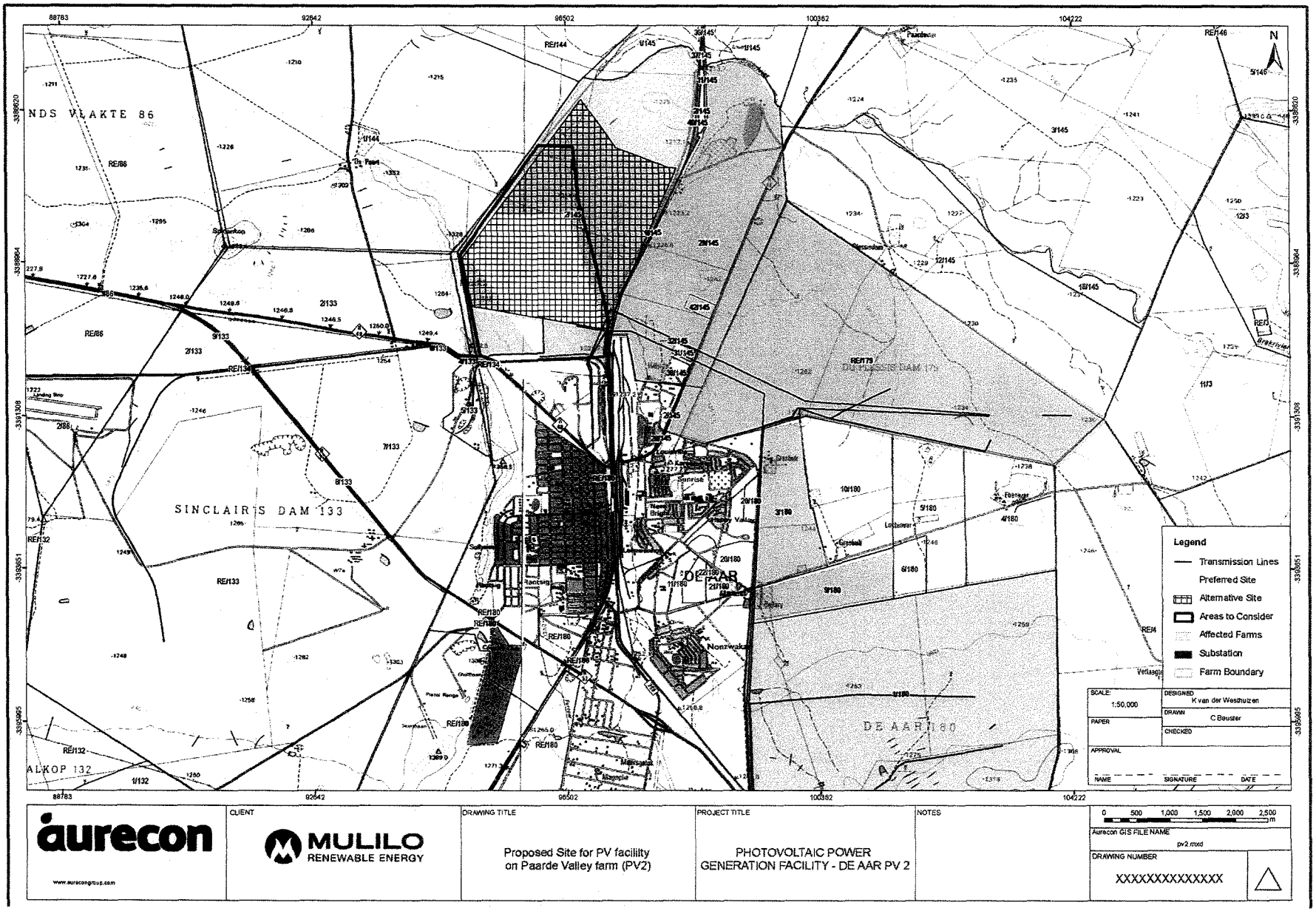

Figure 1: Location of the proposed PV energy facility on Paarde Valley Farm near De Aar, Northern Cape

Need and Desirability

The need for renewable energy is well documented and reasons for the desirability of solar include:

- South Africa has considerable solar resource potential which must be utilized.
- Due to concerns such as climate change, and the on-going exploitation of non-renewa resources, there is increasing international pressure on countries to increase their share renewable energy generation.
- The establishment of the proposed De Aar PV power generation facilities would strengthen th existing electricity grid for the area. Moreover, the project would contribute towards meeting the national energy target as set by the Department of Energy (DoE), of a 30 % share of all new power generation being derived from Independent Power Producers.
- Skills development and the transfer thereof would be one of the top priorities of Mulilo and local community involvement would be enhanced as far as possible. Approximately 200 to 900 job opportunities would be created during the construction phase depending on the procurement method and the primary contractor.
- Reducing pollution as the generation of energy from PV facilities produces far less pollution per MW/h than coal-fired facilities.

Site description

The proposed site for the construction of the photovoltaic facility is the Paarde Valley farm (Farm No. 145 Portion 2). Paarde Valley farm is located approximately 4.5 km from the Nonzwakazi informal settlement and approximately 2 km North of De Aar. The site's and surrounding land uses are mainly agricultural, consisting mostly of sheep and cattle grazing. The portion proposed for the facility is owned by Marais Louis Charles-Trustees with which Mulilo has entered into a long term agreement with for the proposed project.

Project alternatives

The following feasible alternatives will be assessed in the Environmental Impact Assessment Report (EIAR) include the following:

- Location alternatives:
    - o One location alternative on Paarde Valley Dam Farm.
- Activity alternatives:
    - o Solar energy generation via PVs; and
    - o "No-go" alternative to PV solar energy production.

Site layout alternatives:

- o Two layout alternatives.

Technology alternatives:

- o Mounting of PV Panels:
    - Fixed axis photovoltaic;
    - Single axis tracking PV; and
    - Concentrated dual axis tracking.

Foundation alternative:

- Isolated concrete bases;
- Continuous concrete bases;
- Concrete pile; and
- and supporting structure.

Identified impacts

During this scoping exercise a shortlist of potentially significant environmental impacts was iden further, more detailed investigation during the EIA Phase. Specifically the following po environmental impacts have been identified:

- ***Construction phase impacts on the biophysical and socio-economic environments:***
    - Disturbance of flora and fauna;
    - Sedimentation and erosion of water ways;
    - Impact on traffic;
    - Storage of hazardous substances on site;
    - Dust impacts;
    - Noise pollution;
    - Impact on local economy (employment) and social conditions;
    - Skills development; and
    - Tourism.
- ***Operational phase impacts on the biophysical environment:***
    - Impact on flora;
    - Impact on fauna (avifauna); and
    - Impact on water resources.
- ***Operational phase impacts on the social environment:***
    - Impact on heritage resources (including palaeontology);
    - Visual impacts;
    - Impact on energy production;
    - Impact on local economy (employment) and social conditions; and
    - Impact on agricultural land.

The following specialist studies and specialists will be commissioned to provide more detailed information on those environmental impacts which have been identified as potentially being of most concern, and/or where insufficient information is available, namely:

Table 1: Specialist to be appointed

Assessment	Company	Contact
Visual Impact Assessment	Private consultant	Karen Hansen
Palaeontological Impact Assessment	Natura Viva	John Almond
Ecological Impact Assessment	David Hoare Consulting	David Hoare
Avian Impact Assessment	Private consultant	Doug Harebottle
Agricultural Assessment	SiVEST	Kurt Barichievy
Heritage Impact Assessment	ACO Associates	Tim Hart
Aquatic Ecology	Private consultant	Toni Belcher
Hydrology	Aurecon South Africa	Nicholas Walker

Scoping Process in terms of EIA Regulations

ent Notice (GN) No.s 544, 545, and 546) promulgated in terms of NEMA, "could have a substantial detrimental effect on the environment". These tal authorisation from the competent environmental authority, i.e. the EA) in the case of energy applications, prior to commencing.

This proposed project triggers a number of listed activities (GN No.544 No. 10, GN No. 54 GN No. 546 No. 14) in terms of NEMA and accordingly requires environmental authorisation via the EIA process outlined in Regulation 543 of NEMA. DEA's decision will be based on the ou this EIA process.

EIA Process

The EIA process consists of an Initial Application Phase, a Scoping Phase, and an EIA Phase. T purpose of the Initial Application Phase is to commence the project *via* the submission of the relevar department's application forms. The purpose of the Scoping Phase is to identify and describe potentia positive and negative environmental impacts (both biophysical and socio-economic) associated with the proposed project and to screen feasible alternatives to consider in further detail.

The purpose of the EIA Phase is to comprehensively investigate and assess those alternatives and impacts identified in the Scoping Report and propose mitigation to minimise negative impacts.

The acceptance of the Scoping Report and the Plan of Study for EIA by DEA would allow the process to continue to the EIA phase.

How you can get involved

Public participation is a key component of this EIA process and enables Interested and Affected Parties (I&APs) (e.g. directly affected landowners; national-, provincial- and local authorities; environmental groups; civic associations; and communities), to identify their issues and concerns, relating to the proposed activities, which they feel should be addressed in the EIA process. The public participation process to date has involved the following aspects:

- Advertisements were placed in the local newspapers, *The Echo* and Die *Volksblad*, on 4 November 2011 notifying the broader public of the initiation of the EIA and inviting them to register as I&APs from 8 November 2011;
- A site notice was placed at the entrance to the Paarde Valley Farm on 8 November 2011.

All written comments can be submitted to Aurecon (a Response Form is attached, for your convenience). All issues raised via written correspondence will be summarised into a Comments and Response Report with responses from the project team and will be included as an annexure to the Final Scoping Report.

Way forward

ublic participation process involves the lodging of this DSR in De Aar Public Library, Emthanjeni pal offices located in Voortrekker Street, and on the Aurecon website (**www.aurecongroup.com** "Current Location" to South African and follow the public participation link).

APs were notified of the period available to submit their comments or concerns on the DSR by ters sent by post, fax or e-mail. I&APs have 40 days, until **5 January 2012**, to submit their nts on the DSR. Cognisance will be taken of all comments in compiling the final report, and ogether with the project team and proponent's responses thereto, will be included in the

rected to:

aurecon

Aurecon
Karen van der Westhuizen / Karen Versfeld
P O Box 494, Cape Town, 8000
Tel: 021 526 6044/5737
Fax: 086 535 9856
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On completion of the public comment period, the Scoping Report will be finalised and all comments received from I&APs will be incorporated into the report. The Final Scoping Report (FSR) will be submitted to DEA for their review and decision regarding acceptance of the report and related Plan of Study for EIA. DEA have a 30 day comment period and thereafter they may either issue a letter accepting the Scoping Report and Plan of Study for EIA or reject it.

List of Acronyms

DEA	Department of Environmental Affairs
DSR	Draft Scoping Report
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
FSR	Final Scoping Report
I&AP	Interested and Affected Party
km	Kilometer
kV	Kilovolt
MW	Megawatts
NEMA	National Environmental Management Act

ENVIRONMENTAL IMPACT ASSESSMENT
PROPOSED PHOTOVOLTAIC SOLAR ENERGY FACILITY ON PAARDE VALLEY FARM NEAR DE AAR, NORTHERN CAPE

MULILO RENEWABLE ENERGY

NOVEMBER 2011

aurecon

DEA REF. NO. 12/12/20/2500
AND NEAS REF NO.:DEAT/EIA0000607/2011

SUMMARY DOCUMENT: DRAFT SCOPING REPORT
Response Form for comment by Interested and Affected Parties

Please return this page to Aurecon via fax, post or e-mail by **5 January 2012**.

Attention: Karen van der Westhuizen / Karen Versfeld
Postal address: P O Box 494, Cape Town, 8000
Tel: 021 526 6044/5737
Fax: 086 535 9856
Email: karen.vanderwesthuizen@aurecongroup.com
karen.versfeld@aurecongroup.com

TITLE		**FIRST NAME**			
INITIALS		**SURNAME**			
ORGANISATION		**EMAIL**			
POSTAL ADDRESS					
		POSTAL CODE			
TEL NO.		**FAX NO.**			
CELL NO.		**LANGUAGE**	English	Afrikaans	Other
Do you have any direct interest in the approval or refusal of the proposed project for business or other reasons?				Yes	NO

Please list any colleagues/friends or organizations that you feel should also be registered as an Interested and Affected Party for this EIA:

(with contact details if available)

Name/ Organisation	Postal Address	Tel No.	Fax No.

Please comment on any issues or concerns you may have:

(please use a separate sheet if you wish)

.....

.....

.....

.....

.....

Thank you for your comments

Report No: [5759]

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: PROPOSED PHOTOVOLTAIC (SOLAR) ENERGY FACILITY ON PAARDE VALLEY FARM NEAR DE AAR, NORTHERN CAPE

DEA REF. NO. 12/12/20/2500

DRAFT SCOPING REPORT

November 2011

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PROJECT DETAILS

DEA REFERENCE NO.	12/12/20/2500
PROJECT NO.	107514
TITLE	DRAFT SCOPING REPORT
AUTHORS & PREPARED BY	Karen van der Westhuizen, Karen Versfeld and Louise Corbett of Aurecon South Africa (Pty) Ltd
CLIENT	Mulilo Renewable Energy (Pty) Ltd
CLIENT REPRESENTATIVE	Warren Morse
REPORT STATUS	Draft
REPORT NUMBER	5759
REPORT DATE	November2011

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Aurecon Cape Town Office Electronic File Reference: ZACPT\Projects_AFS_OLD\Data\ENV\PROJECTS\107514~Mulilo De Aar PVs\Project Delivery- Reports\Scoping reports\PV2-Paarde Valley farm\Draft Scoping Report

GLOSSARY OF TERMS

Environment	The surroundings (biophysical, social and economic) within which humans exist and that are made up of i. the land, water and atmosphere of the earth; ii. micro organisms, plant and animal life; iii. any part or combination of (i) and (ii) and the interrelationships among and between them; and iv. the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing;
Environmental Impact Assessment (EIA)	A study of the environmental consequences of a proposed course of action.
Environmental Impact Assessment Report Assessment (EIAR)	A report assessing the potential significant impacts as identified during the Scoping phase.
Environmental impact	An environmental change caused by some human act.
Environmental Management Programme (EMP)	A document that provides procedures for mitigating and monitoring environmental impacts, during the construction, operation and decommissioning phases.
Public Participation Process	A process of involving the public in order to identify needs, address concerns, in order to contribute to more informed decision making relating to a proposed project, programme or development
Scoping	A procedure for determining the extent of and approach to an EIA, used to focus the EIA to ensure that only the significant issues and reasonable alternatives are examined in detail
Scoping Report	A report compiled in terms of the National Environmental Management Act (No. 107 of 1998) describing the issues identified relating to a proposed development

ABBREVIATIONS

CRR	Comments and Responses Report
CSP	Concentrating Solar-thermal Power
DEA	Department of Environmental Affairs (previously Department of Environmental Affairs and Tourism)
DEA&DP	Department of Environmental Affairs and Development Planning
DEANC	Department of Environmental Affairs and Nature Conservations
DEAT	Department of Environmental Affairs and Tourism
DME	Department of Minerals and Energy
DoE	Department of Energy
DSR	Draft Scoping Report
EAP	Environmental Assessment Practitioner
EAPSA	Environmental Assessment Practitioner of South Africa
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EMF	Environmental Management Framework
EMP	Environmental Management Programme
EIA	Environmental Impact Assessment
FSR	Final Scoping Report
GN	Government Notice
GWh	Gigawatt hours
ha	Hectares
HIA	Heritage Impact Assessment
I&APs	Interested and Affected Parties
IDP	Integrated Development Plan
IEP	Integrated Energy Plan
IPP	Independent Power Producer
IRP	Integrated Resource Plan
kV	Kilovolt
LOWMA	Lower Orange Water Management Area
MW	Megawatts
NEMA	National Environmental Management Act (No. 107 of 1998) (as amended)
NHRA	National Heritage Resources Act (No. 25 of 1999)
NWA	National Water Act (No 36 of 1998)
PV	Photovoltaic
SAHRA	South African Heritage Resources Agency
SACNSP	South African Council for Natural Scientific Professions
SDF	Spatial Development Framework
ToR	Terms of Reference
VIA	Visual Impact Assessment

1. INTRODUCTION AND BACKGROUND

The purpose of this Chapter is to introduce the project and describe the relevant legal framework within which the project takes place. Other applicable policies and guidelines are also discussed. The Terms of Reference, scope of and approach to the Environmental Impact Assessment are described and assumptions and limitations are stated.

1.1 INTRODUCTION

Mulilo Renewable Energy (Pty) Ltd (Mulilo) proposes to construct three separate solar energy facilities which utilise photovoltaic (PV) technology near De Aar in the Northern Cape (the locations of the proposed PV facilities are indicated in **Figure 1-1**).

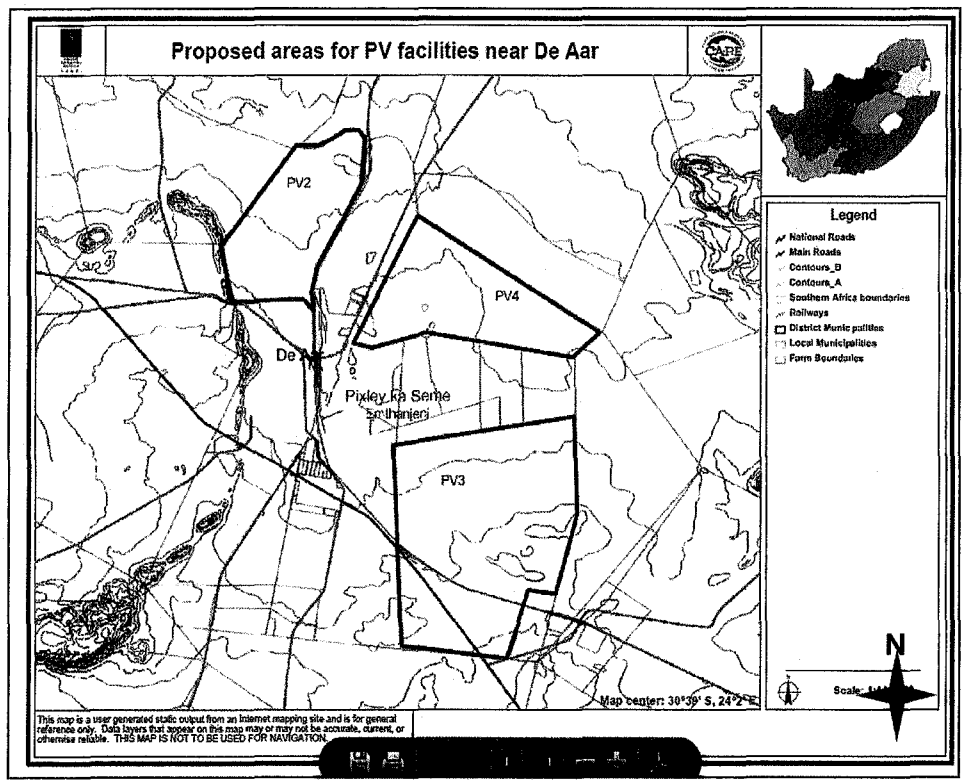

Figure 1-1: Location of the three proposed PV facilities near De Aar, Northern Cape (not to scale). The N10 is indicated by the red line and connects De Aar with the N8 and N1

The proposed projects are listed in terms of the Environmental Impact Assessment (EIA) Regulations (Government Notice (GN) No. 543, 544 and 545 of 2 August 2010) in terms of the National Environmental Management Act (No. 107 of 1998) (NEMA). Aurecon South Africa (Pty) Ltd (Aurecon) has been appointed to undertake the requisite environmental process on behalf of Mulilo.

This Environmental Impact Assessment (EIA) is for one of the three proposed PV facilities, namely the proposed photovoltaic (solar) energy (PV) facility on Paarde Valley farm (Portion 2 of Farm No. 145), near De Aar in the Northern Cape (referred to as PV2 in **Figure 1-2**).

The proposed facility consists of the following:

- A photovoltaic component comprising of numerous arrays of PV panels and associated support infrastructure to generate up to 75-150 MW through the photovoltaic effect.
- Two 132 kV overhead transmission lines would be required to connect the proposed solar PV facility with Eskom's grid. A 132 kV overhead transmission line (2.5 km in length) would be required to connect to the De Aar substation and a 132 kV overhead transmission line (20 km in length) would be required to connect to the Hydra substation (see **Figure 2-3** for an example of the proposed transmission lines).
- Water supply infrastructure (which will be determined by the source of the water supply):
    - *Municipal supply*: Should potable water be obtained from the Emthanjeni Municipality, it may be necessary to construct a pipeline to direct water from the municipal network to the site location of the proposed activity.
    - *Groundwater:* Should water be sourced from boreholes, it may be necessary for Mulilo to construct the required support infrastructure, such as pipelines and storage facilities.

In terms of the NEMA, the proposed development triggers a number of listed activities, which require authorisation from the competent environmental authority before they can be undertaken. Since the project is for the generation of energy, and energy projects are dealt with by the national authority, the competent authority is the National Department of Environmental Affairs (DEA). DEA's decision will be based on the outcome of this EIA process.

This report serves to document the Scoping Phase of the EIA process (the EIA process and sequence of documents produced as a result of the process are illustrated in **Figure 1-3**). The purpose of this Scoping Report[1] is to provide background information to the proposed project and outline the scope of work proposed to be undertaken in the EIA Phase. Accordingly, the Scoping Report includes the following information:

- Outline of the legal and policy framework;
- Description of the proposed project;
- Description of the Public Participation Process undertaken to date;
- Description of the biophysical and socio-economic context;
- Description of the range of alternatives that require further investigation in the EIA Phase;
- Identification of the potential impacts, including cumulative impacts, that will be assessed in the EIA Phase, inclusive of specialist studies that will be undertaken; and
- Details the assessment methodology that will be adopted for the project.

[1] Section 28 of EIA Regulation No. 543 of NEMA lists the content required in a Scoping Report.

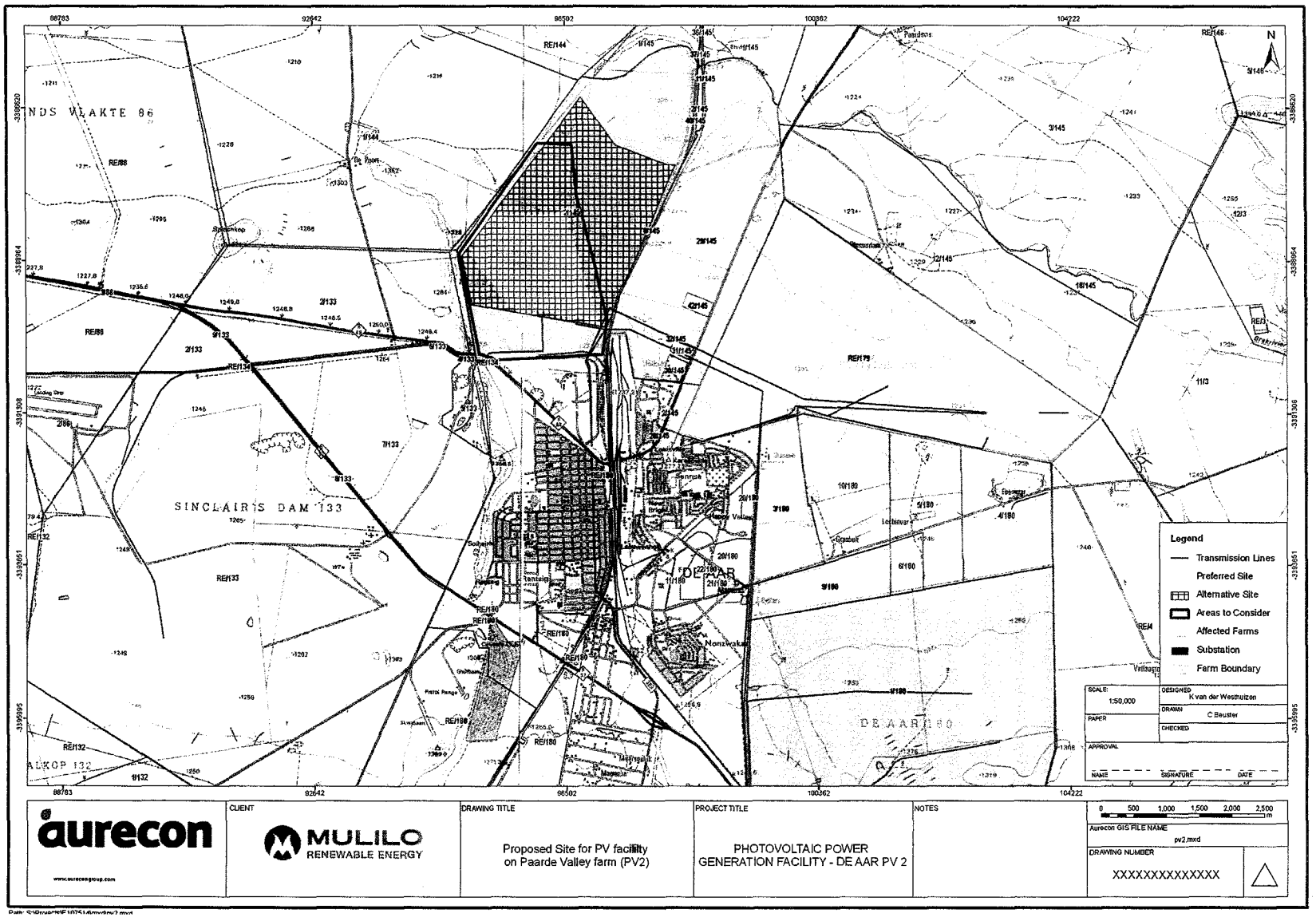

Figure 1-2: Location of the proposed PV energy facility on Paarde Valley Farm, near De Aar, Northern Cape

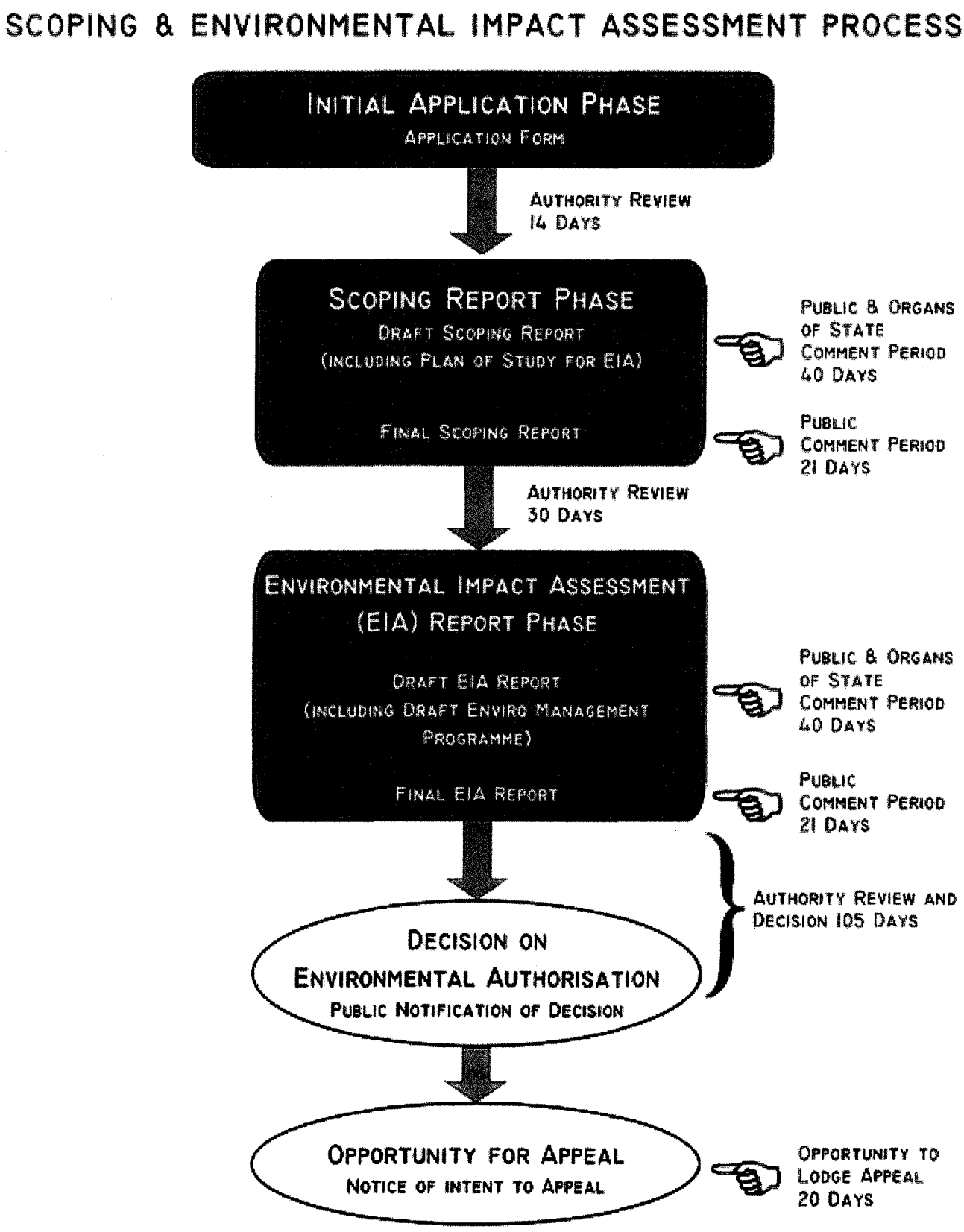

Figure 1-3: The EIA process in terms of NEMA

1.2 LEGAL REQUIREMENTS

2.1.1 National Environmental Management Act, No. 107 of 1998

NEMA, as amended, establishes the principles for decision-making on matters affecting the environment. Section 2 sets out the National Environmental Management Principles which apply to the actions of organs of state that may significantly affect the environment. Furthermore, Section 28(1) states that "every person who causes or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring". If such pollution or degradation cannot be prevented then appropriate measures must be taken to minimise or rectify such pollution or degradation.

Mulilo has the responsibility to ensure that the proposed activity as well as the EIA process conforms to the principles of NEMA. In developing the EIA process, Aurecon has been cognisant of this need, and accordingly the EA process has been undertaken in terms of NEMA and the EIA Regulations promulgated on 18 June 2010[2].

In terms of the EIA regulations, certain activities are identified, which require authorisation from the competent environmental authority, in this case DEA, before commencing. Listed activities in Government Notice (GN No. 545 require Scoping and EIA, whilst those listed in GN No. 544 and 546 require a Basic Assessment (unless they are being assessed under an EIA process). The activities being applied for in this EIA process are listed in **Table1-1**.Further information on the EIA approach is provided in **Section1.4**.

Table 1-1: Listed activities in terms of NEMA GN No. 544, 545 and 546, 18 June 2010, to be authorised for the proposed photovoltaic (solar) energy facility

NO.	LISTED ACTIVITY	RELEVENT TO
	GN No. R544, 18 June 2010	
10	The construction of facilities or infrastructure for the transmission and distribution of electricity - • outside urban areas or industrial complexes with a capacity of more than 33 , but less than 275 kilovolts; or • inside urban areas or industrial complexes with a capacity of 275 kilovolts or more.	Two 132 kV overhead transmission lines would be required to connect the proposed solar PV facility with Eskom's grid. A 132 kV overhead transmission line (2.5 km in length) would be required to connect to the De Aar substation and a 132 kV overhead transmission line (20 km in length) would be required to connect to the Hydra substation.
	GN No. R545, 18 June 2010	
1	The construction of facilities or infrastructure for the generation of electricity where the electricity output is 20 megawatts or more.	The use of PV panels to generate up to 75-150 MW of electricity for integration into the Eskom grid.

[2]GN No. R 543, 544, 545, 546 and 547 in Government Gazette No.33306 of 18 June 2010.

NO.	LISTED ACTIVITY	RELEVENT TO
	GN No. R546, 18 June 2010	
14	The clearance of an area of 5 hectares or more of vegetation where 75 % or more of the vegetation cover constitutes indigenous vegetation (a) in the Northern Cape (i) All areas outside urban areas.	The clearance of an area of 225 ha to 450ha in extent. The area is currently being used as grazing land, as such the extent of indigenous vegetation is unknown. The relevance of this listed activity will be confirmed during the EIA Phase.

Since the proposed project is based in the Northern Cape, DEA will work closely with the provincial Department of Environmental Affairs and Nature Conservation (DEANC), to ensure that the provincial environmental concerns are specifically identified and addressed.

2.1.2 National Environmental Management: Biodiversity Act (No. 10 of 2004) (NEM: BA)

The National Environmental Management Biodiversity Act (No.10of 2004) (NEM: BA) aims to conserve and manage the country's biodiversity via protecting species and ecosystems, specifically those which are threatened and/or are considered to be critically endangered.

The Act also allows for the publication of provincial and national lists of ecosystems that are considered to be threatened and are therefore in need of protection and include:

- Critically endangered ecosystems: ecosystems that have undergone severe ecological degradation as a result of human activity and are at extremely high risk of irreversible transformation;
- Endangered ecosystems: ecosystems that, although they are not critically endangered, have nevertheless undergone ecological degradation as a result of human activity;
- Vulnerable ecosystems: ecosystems that have a high risk of undergoing significant ecological degradation; and
- Protected ecosystems: ecosystems that are of a high conservation value or contain indigenous species at high risk of extinction in the wild in the near future.

In terms of NEMBA a list of endangered, critically endangered, vulnerable, and protected species has been promulgated on 6 November, 2009 (Section 6, Table 3 of the Act), which calls for an EIA process should any of the listed species be identified on the site and need to be removed. The vegetation type will be determined through an ecological impact assessment.

2.1.3 National Water Act, No 36 of 1998

The National Water Act (NWA) (Act No 36 of 1998) provides for the sustainable and equitable use and protection of water resources. It is founded on the principle that the National Government has overall responsibility for and authority over water resource management, including the equitable allocation and beneficial use of water in the public interest, and that a person can only be entitled to use water if the use is permissible under the NWA. Section 21 of the NWA specifies the water uses which require authorisation from the Department of Water Affairs (DWA) in terms of the NWA before they may commence.

The proposed development will require water during the construction and operational phase. It is anticipated that water will be sourced from groundwater or from the Municipality. Should groundwater be utilised, then authorisation from the DWA will be required before the water use activity may commence as the abstraction of groundwater is a listed water use activity (section 21(a) water use). Depending on the quantity of groundwater abstracted, this water use will either require a General Authorisation (low volume of water abstracted) or a Water Use Licence (volume of groundwater abstracted exceeds the General Authorisation threshold). The authorisation process for a Water Use Licence will be undertaken as a separate process by Mulilo following the approval of the EIA. Comment will however be sought from the DWA as part of this EIA process.

2.1.4 National Heritage Resources Act, No. 25 of 1999

In terms of the National Heritage Resources Act (No. 25 of 1999) (NHRA), any person who intends to undertake "*any development ... which will change the character of a site exceeding 5 000 m^2 in extent*", *"the construction of a road...powerline, pipeline...exceeding 300 m in length"* or *"the rezoning of site larger than 10 000 m^2 in extent..."* must at the very earliest stages of initiating the development notify the responsible heritage resources authority, namely the South African Heritage Resources Agency (SAHRA) or the relevant provincial heritage agency. These agencies would in turn indicate whether or not a full Heritage Impact Assessment (HIA) would need to be undertaken.

Section 38(8) of the NHRA specifically excludes the need for a separate HIA where the evaluation of the impact of a development on heritage resources is required in terms of an EIA process. Accordingly, since the impact on heritage resources would be considered as part of the EIA process outlined here, no separate HIA would be required. SAHRA or the relevant provincial heritage agency would review the EIA reports and provide comments to DEA, who would include these in their final environmental decision. However, should a permit be required for the damaging or removal of specific heritage resources, a separate application would have to be submitted to SAHRA or the relevant provincial heritage agency for the approval of such an activity, if Mulilo obtains authorisation and makes the decision to pursue the proposed project further.

2.1.5 Conservation of Agricultural Resources Act, No. 43 of 1983

The Conservation of Agricultural Resources Act (No. 43 of 1983) (CARA) makes provision for the conservation of the natural agricultural resources of South Africa through maintaining the production potential of land, combating and preventing erosion, preventing the weakening or destruction of the water sources, protecting vegetation, and combating weeds and invader plants. Regulation 15 of CARA lists problem plants (undesired aliens, declared weeds, and plant invaders). Plants listed in this regulation must be controlled by the landowner.

As such, as part of the EIA process, recommendations should be made to ensure that measures are implemented to maintain the agricultural production of land, prevent soil erosion, and protect any water bodies and natural vegetation on site. Mulilo together with the relevant farmers should also ensure the control of any undesired aliens, declared weeds, and plant invaders listed in the regulation that may pose as a problem as a result of the proposed photovoltaic (solar) energy facility.

2.1.6 Other applicable legislation and policies

This section provides an overview of the policy and legislative context in which the development of renewable energy projects takes place in South Africa. The following policies and legislative context are described:

- Policies regarding greenhouse gas and carbon emissions;
- White Paper on the Energy Policy of the Republic of South Africa (1998);
- White Paper on Renewable Energy (2003);
- National Energy Act (No. 34 of 2008) and Electricity Regulation Act (ERA) (No. 4 of 2006);
- IPP (Independent Power Producer) Procurement Process;
- Integrated Energy Plan for the Republic of South Africa (2003); and
- Integrated Resources Plan.

1.2.1.1 Policies regarding greenhouse gas and carbon emissions

Gases that contribute to the greenhouse effect are known to include carbon dioxide (CO_2), methane (CH_4), water vapour, nitrous oxide, chlorofluorocarbons (CFCs), halons and peroxyacylnitrate (PAN). All of these gasses are transparent to shortwave radiation reaching the earth's surface, but trap long-wave radiation leaving the earth's surface. This action leads to a warming of the earth's lower atmosphere, resulting in changes in the global and regional climates, rising sea levels and extended desertification. This in turn is expected to have severe ecological consequences and a suite of implications for mankind.

Electricity generation using carbon based fuels is responsible for a large proportion of carbon dioxide (CO_2) emissions worldwide. In Africa, the CO_2 emissions are primarily the result of fossil

fuel burning and industrial processes, such coal fired power stations. South Africa accounts for some 38 % of Africa's CO_2 emissions. The global per capita CO_2 average emission level is 1.23 metric tonnes. In South Africa however, the average emission rate is 2.68 metric tonnes per person per annum. The International Energy Agency (2008) *"Renewables in global energy supply: An IEA facts sheet"* estimates that nearly 50% of global electricity supplies will need to come from renewable energy sources in order to halve carbon dioxide emissions by 2050 and minimise significant, irreversible climate change impacts.

The United Nations Framework Convention on Climate Change (UNFCCC) has initiated a process to develop a more specific and binding agreement on the reduction of greenhouse gas (GHG) emissions. This led to negotiations with a particular focus on the commitments of developed countries, and culminated in the adoption of the Kyoto Protocol in 1997, which came into effect in February 2005. Using the above framework to inform their approach, the Kyoto Protocol has placed specific legal obligations in the form of GHG reduction targets on developed countries and countries with 'Economies in Transition'. The developed countries listed in Annex 1 of the UNFCCC are required to reduce their overall emissions of six GHGs by at least 5 % below the 1990 levels between 2008 and 2012. While South Africa, as a developing country, is not obliged to make such reductions, the increase in greenhouse gas emissions must be viewed in light of global trends to reduce these emissions significantly. More recently under the Copenhagen Accord 2010, countries representing over 80 % of global emissions have submitted pledges on emission reductions. South Africa commitment is to reduce GHG emissions totalling 34 % by 2020 and 42 % by 2025.

The Kyoto Protocol, to which South Africa is a signatory, was informed by the principles of sustainable development which resulted in related policies and measures being identified to promote energy efficiency while protecting and enhancing the 'sinks and reservoirs' of greenhouse gases (forests, ocean, etc.). Other methods/approaches included encouraging more sustainable forms of agriculture, in addition to increasing the use of new and renewable energy and the adoption/implementation of advanced and innovative environmentally sound technologies. South African policies are being informed by the Kyoto Protocol (which is valid until 2012) and its partial successor the Copenhagen Accord 2010 and associated sustainable development principles whereby emphasis is being placed on industries for 'cleaner' technology and production.

1.2.1.2 White Paper on the Energy Policy of the Republic of South Africa (1998)

As required by the Constitution of the Republic of South Africa (Act No. 108 of 1996), the White Paper on the Energy Policy of the Republic of South Africa (1998) was published by the Department of Minerals and Energy in response to the changing political climate and socio-economic outlook. Key objectives are identified in terms of energy supply and demand, as well as co-ordinated with other social sectors and between energy sub-sectors.

The White Paper commits to government's focused support for the development, demonstration and implementation of renewable energy sources for both small and large-scale applications.

With the aim of drawing on international best practice, specific emphasis is given to solar and wind energy sources, particularly for rural, and often off-grid areas.

While considering the larger environmental implications of energy production and supply, the White Paper looks into the future to adopting an integrated resource planning approach, integrating the environmental costs into economic analysis. It is with this outlook that the renewable energy, including solar energy, is seen as a viable, attractive and sustainable option to be promoted as part of South Africa's energy policy towards energy diversification.

1.2.1.3 White Paper on Renewable Energy (2003)

Published by the Department of Minerals and Energy (DME) in 2003, the White Paper on renewable Energy supplements the above-mentioned Energy Policy which identified the medium- and long-term potential for renewable energy as significant. The White Paper sets out the vision, policy principles, strategic goals, and objectives in terms of renewable energy. At the outset the policy refers to the long term target of "10000GWh *(0.8 Mtoe) renewable energy contribution to final energy consumption by 2013."* The aim of this 10-year plan is to meet this goal via the production of mainly biomass, wind, solar, and small-scale hydro sources. It is estimated that this would constitute approximately 4 % of projected energy demand for 2013.

The White Paper presents South Africa's options in terms of renewable energy as extensive and a viable and sustainable alternative to fossil fuel options. A strategic programme of action to develop South Africa's renewable energy resources is proposed, particularly for power generation and reducing the need for coal-based power generation. The starting point will be a number of initial investments spread across both relatively low cost technologies, such as biomass-based cogeneration, as well as technologies with larger-scale application, such as solar water heating, wind and small-scale hydro.

Addressing environmental impacts and the overarching threats and commitments to climate change, the White Paper provides the platform for further policy and strategy development in terms of renewable energy in the South African energy environment.

1.2.1.4 National Energy Act (No. 34 of 2008) and Electricity Regulation Act (No. 4 of 2006)

South Africa has two acts that direct the planning and development of the country's electricity sector:

i. The National Energy Act (No. 34 of 2008); and
ii. The Electricity Regulation Act (ERA) (No. 4 of 2006).

In May 2011, the Department of Energy (DoE) gazetted the Electricity Regulations on New Generation Capacity under the ERA. The New Generation Regulations establish rules and guidelines that are applicable to the undertaking of an IPP Bid Programme and the procurement

of an IPP for new generation capacity. They also facilitate the fair treatment and non-discrimination between IPPs and the buyer of the energy[3].

In terms of the New Generation Regulations, the Integrated Resource Plan (IRP) (see **Section 1.2.6.7**) has been developed by the DoE and sets out the new generation capacity requirement per technology, taking energy efficiency and the demand-side management projects into account. This required, new generation capacity must be met through the technologies and projects listed in the IRP and all IPP procurement programmes will be undertaken in accordance with the specified capacities and technologies listed in the IRP[4].

1.2.1.5 IPP Procurement Process

South Africa aims to procure 3 725 MW capacity of renewable energy by 2016 (the first round of procurement). This 3 725 MW is broadly in accordance with the capacity allocated to renewable energy generation in IRP2010.

On 3 August 2011, DoE formally invited interested parties with relevant experience to submit proposals for the finance, operation and maintenance of renewable energy generation facilities adopting any of onshore wind, solar thermal, solar photovoltaic, biomass, biogas, landfill gas, or small hydro technologies for the purpose of entering, *inter alia*, an Implementation Agreement with DoE and a Power Purchase Agreement with a buyer (Eskom)[5] in terms of the ERA. This Request for Qualification and Proposals (RFP) for new generation capacity was issued under the IPP Procurement Programme. The IPP Procurement Programme has been designed to contribute towards the target of 3 725 MW and towards socio-economic and environmentally sustainable growth, and to start and stimulate the renewable industry in South Africa[6].

In terms of this IPP Procurement Programme, Bidders will be required to bid on tariff and the identified socio-economic development objectives of DoE. The tariff will be payable by the Buyer should the project be selected. Although earlier information was that the 2009 Renewable Energy Feed In Tariff would act as an upper limit on price, the actual caps are set out in **Table 1-2**[7]. A bid will be 'non-compliant' and automatically rejected during the qualification phase if the price cap is exceeded. Bid Responses which are submitted must be accompanied by a Bid Guarantee in the form of a bank guarantee for an amount equal to R 100 000 per MW of the proposed installed capacity[8].

The generation capacity allocated to each technology is set out in **Table 1-2**.

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[3]http://www.eskom.co.za/c/73/ipp-processes/ (accessed 29/10/11)

[4]http://www.eskom.co.za/c/73/ipp-processes/ (accessed 29/10/11)

[5]http://www.ipp-renewables.co.za/wp-content/uploads/2011/08/Tender_Notice.png (accessed 30/10/11)

[6]http://www.ipp-renewables.co.za/ (accessed 30/10/11)

[7] http://www.nortonrose.com/knowledge/publications/54959/south-africa-renewable-energy-ipp-request-for-proposals (accessed 30/10/11)

[8]http://www.ipp-renewables.co.za/wp-content/uploads/2011/08/Tender_Notice.png (accessed 30/10/11)

Table 1-2: Generation capacity and price cap per each technology

Technology	MW	Price cap (per MWh)
Onshore wind	1 850	R 1 150
Concentrated solar thermal	200	R 2850
Solar photovoltaic	1 450	R 2850
Biomass solid	12.5	R 1070
Biogas	12.5	R 800
Landfill gas	25	R 600
Small hydro	75	R 1 030
Small projects[9]	100	As above
TOTAL	**3 725**	

Each project procured in terms of this IPP Procurement Programme will be required to achieve commercial operation by not later than 2016.

The submission and selection dates for projects for the RFP are given in **Table 1-3**.

Table 1-3: Bid submission dates, selection of preferred bidders and signing of agreements[10]

Submission no.	Submission date	Preferred bidder selection date	Signing of agreements date
First	4 November 2011	25 November 2011	19 June 2012
Second	5 March 2012	TBA	13 December 2012
Third	20 August 2012	TBA	31 May 2013
Fourth	4 March 2013	TBA	13 December 2013
Fifth	13 August 2013		26 May 2014

The selection process to determine the preferred bidders will be based on both price and other economic development criteria in a 70 %/ 30 % ratio respectively (Creamer, T. 2011). If the maximum MW allowance for any particular technology has been allocated during any particular window, then the subsequent bidding opportunities will not be opened for that technology.

IPPs that wish to connect to Eskom's network will be required to apply for a connection, pay a connection charge and sign a connection and use-of-system agreement[11]. All IPPs will be provided non-discriminatory access to Eskom's network, subject to the IPP's obtaining its required approvals such as EIA's and a generating and trading licence from NERSA.

[9] Small projects are less than 5 MW.
[10] http://www.ipp-renewables.co.za/?page_id=524 (accessed 30/10/11)
[11] http://www.eskom.co.za/c/article/150/independent-power-prodicers-ipp/ (accessed 30/10/11)

1.2.1.6 Integrated Energy Plan for the Republic of South Africa

Commissioned by DME in 2003, the Integrated Energy Plan (IEP) aims to provide a framework in which specific energy policies, development decisions and energy supply trade-offs can be made on a project-by-project basis. The framework is intended to create a balance in providing low cost electricity for social and economic developments, ensuring security of supply, and minimising the associated environmental impacts.

The IEP projected that the additional demand in electricity would necessitate an increase in electricity generation capacity in South Africa by 2007. Furthermore, the IEP concluded that, based on energy resources available in South Africa, coal would be the primary fuel source in the 20 year planning horizon, which was specified as the years 2000 to 2020, although other cleaner technologies continue to be investigated as alternatives in electricity generation options. Therefore, though the next two decades of energy generation are anticipated to remain coal-based, alternative technologies and approaches are available and need to be contextually considered.

1.2.1.7 Integrated Resource Plan

The Integrated Resource Plan (IRP) is a National Electricity Plan, which is a subset of the Integrated Energy Plan. The IRP is also not a short or medium-term operational plan but a plan that directs the expansion of the electricity supply over the given period.

The IRP, indicating the schedule for energy generation programmes, was first gazetted on 31 December 2009. A revised schedule was gazetted on 29 January 2010 and the schedule has once again been revised and the final IRP (IRP2010-2030) was gazetted on 6 May 2011.

Developed for the period of 2010 to 2030, the primary objective of the IRP2010, as with its predecessors, is to determine the long-term electricity demand and detail how this demand should be met in terms of generating capacity, type, timing, and cost. While promoting increased economic development through energy security, the IRP2010 aims to achieve a "*balance between an affordable electricity price to support a globally competitive economy, a more sustainable and efficient economy, the creation of local jobs, the demand on scarce resources such as water and the need to meet nationally appropriate emission targets in line with global commitments*".

As can be seen by **Table 1.4** below the current final IRP provides for an additional 20 409 MW (shaded in grey) of renewable energy in the electricity mix in South Africa by 2030.

Table 1-4: Policy adjusted scenario of the IRP2010 as gazetted on 6 May 2011

	Total generating capacity in 2030		Capacity added (including committed) from 2010-2030		New (uncommitted) capacity options from 2010-2030	
Technology	MW	%	MW	%	MW	%
Coal	41 074	45.9	16 383	29.0	6 250	14.7
OCGT	7 330	8.2	4 930	8.7	3 910	9.2
CCGT	2 370	2.6	2 370	4.2	2 370	5.6
Pumped Storage	2 912	3.3	1 332	2.4	0	0
Nuclear	11 400	12.7	9 600	17.0	9 600	22.6
Hydro	4 759	5.3	2 659	4.7	2 609	6.1
Wind	9 200	10.3	9 200	16.3	8 400	19.7
CSP	1 200	1.3	1 200	2.1	1 000	2.4
PV	8 400	9.4	8 400	14.9	8 400	19.7
Other	890	1.0	465	0.8	0	0
Total	**89 532**	**100**	**56 539**	**100**	**42 539**	**100**

The final IRP2010 reflects both the consultation process on the draft IRP2010 currently being undertaken with stakeholders and the further technical work undertaken in this period. It is noted that *"given the rapid changes in generation technologies and pricing, especially for "clean" energy sources, the IRP will have to be reviewed on a regular basis, for instance every two years, in order to ensure that South Africa takes advantage of emerging technologies. This may result in adjustments in the energy mix set out in the balanced revised scenario within the target for total system capacity."*

1.3 TERMS OF REFERENCE AND SCOPE OF THE EIA

In September 2011, Mulilo appointed Aurecon to undertake the EIA processes, in terms of NEMA, for the proposed photovoltaic (solar) energy facilities near De Aar in the Northern Cape.

This EIA process specifically excludes any upgrades of existing Eskom infrastructure (i.e. the existing grid) that may be required. However, it does include the connection to the grid required for the proposed project.

1.3.1 Guidelines

This EIA process is informed by the series of national Environmental Guidelines[12] where applicable and relevant:

[12] Note that these Guidelines have not yet been subjected to the requisite public consultation process as required by Section 74 of R385 of NEMA.

- Integrated Environmental Information Management (IEIM), Information Series 5: Companion to the NEMA EIA Regulations of 2010 (DEA, 2010).
- Implementation Guidelines: Sector Guidelines for the EIA Regulations (draft) (DEA, 2010).
- IEIM, Information Series 2: Scoping (Department of Environmental Affairs and Tourism (DEAT), 2002).
- DEAT. 2002. IEIM, Information Series 3: Stakeholder Engagement (DEAT, 2002)
- IEIM, Information Series 4: Specialist Studies (DEAT, 2002).
- IEIM, Information Series 11: Criteria for determining Alternatives in EIA(DEAT, 2004)
- IEIM, Information Series 12: Environmental Management Plans (DEAT, 2004).
- Integrated Environmental Management Guideline Series, Guideline 4: Public Participation, in support of the EIA Regulations. Unpublished (DEAT, 2005).
- Integrated Environmental Management Guideline Series, Guideline 7: Detailed Guide to Implementation of the Environmental Impact Assessment Regulations. Unpublished (DEAT, 2007).
- Guideline for involving biodiversity specialists in EIA process (June 2005).
- Guideline for involving heritage specialists in the EIR process (June 2005).
- Guideline for involving visual and aesthetic specialists in the EIR process (June 2005).
- Guideline for Environmental Management Plans (June 2005).
- Guideline for determining the scope of specialist involvement in EIA Processes (June 2005).
- Guideline for the review of specialist input into the EIA Process (June 2005).

The following guidelines from the Department of Environmental Affairs and Development Planning (Western Cape) (DEA&DP) were also taken into consideration:

- DEA&DP.2011. Guideline on Alternatives, EIA Guideline and Information Document Series. (DEA&DP, October 2011).
- DEA&DP.2011. Guideline on Need and Desirability, EIA Guideline and Information Document Series. (DEA&DP, October 2011).
- DEA&DP.2011. Guideline on Public Participation, EIA Guideline and Information Document Series. (DEA&DP, October 2011).

1.4 APPROACH TO THE PROJECT

The primary purpose of the EIA process is to provide adequate and appropriate information about the potential positive and negative impacts of the proposed development and associated management actions. This is legally required by the environmental authorities to facilitate an informed decision in terms of NEMA for the proposed photovoltaic energy facility at Paarde Valley farm near De Aar.

As outlined in **Figure 1-3**, there are three distinct phases in the EIA process, as required in terms of NEMA, namely the Initial Application, the Scoping Report and the EIA Report phases. This Report covers the second phase, *viz.* the Scoping Report Phase.

1.4.1 Initial Application Phase

The Initial Application phase entailed the submission of a signed EIA Application Form to notify the DEA of the project. The EIA Application Form was submitted on 30 September 2011. Acknowledgement of receipt of the EIA Application Form was received on19 October 2011. The Application Form and the DEA's letters of acknowledgement are included in **Annexure A**.

1.4.2 The Scoping Phase

Scoping is defined as a procedure for determining the extent of, and approach to, the EIA Report phase and involves the following key tasks:

- Involvement of relevant authorities and I&APs;
- Identification and selection of feasible alternatives to be taken through to the EIA phase;
- Identification of significant issues/impacts associated with each alternative to be examined in the EIA Report; and
- Determination of specific terms of reference for any specialist studies required in the EIA Report (Plan of Study for the EIA Report).

To date the Scoping Phase has involved a desktop review of relevant literature, including a review of previous environmental studies in the area. These included, *inter alia*, the following:

- Proposed De Aar Solar Energy Facility, on a site East of De Aar, Northern Cape Province. Draft Scoping Report (Savannah Environmental, 2011).
- Proposed Ilanga Lethemba PV Solar Energy Facility near De Aar, Northern Cape Province. Final Scoping Report (Savannah Environmental, 2011).
- Proposed Photovoltaic Facility on a site South-East of De Aar, Northern Cape Province. Draft Scoping Report (Savannah Environmental, 2011).
- Groundwater Resources in the Northern Cape Province (Department of Water Affairs, 2008).
- Construction of a CSP and CPV/ PV Plant in De Aar, Northern Cape Province of South Africa. Draft Environmental Impact Report (Sivest, 2011).
- Proposed Solar Farm, Prieska. Draft Environmental Impact Assessment Report (EIAR) (DJ Environmental Consultants, 2010).

An inception field trip was held on 6 October 2011. Discussion between the landowner and Mulilo regarding the lease agreement were on going at the time of the field trip and hence Aurecon was unable to access the site. However, as Mulilo has undertaken an EIA process and has been permitted to construct a 10 MW facility at Paarde Valley farm[13], there was ample background information available on the site. The background information enabled Aurecon to gain understanding on key aspects such as:

[13] \\Aurecon.info\Shares\ZACPT\Projects_AFS_OLD\Data\ENV\PROJECTS\107514~Mulilo De Aar PVs\BG Info\OLD\De Aar PV- FEIR\De Aar ROD

- Biophysical aspects, including:
  - Terrestrial fauna and flora especially avifauna;
  - Surface water resources;
  - Ecological sensitive areas; and
  - Vegetation types on site.

- Socio-economic aspects including:
  - Heritage issues;
  - Land use, including agricultural potential;
  - Visual aesthetics, including the location of the project in terms of roads, topography, and proximity to houses;
  - Location of local communities;
  - Dust;
  - Employment opportunities; and
  - Tourism.

The information gathered during the desktop study and site visit was used in refining the Plan of Study for the EIA process and Terms of Reference (ToR) for the specialist studies which will be undertaken during the EIA Phase.

1.4.3 The EIA Phase

The Scoping Phase will be followed by the EIA Phase, during which the specialist investigations will occur, and will culminate in a comprehensive report EIAR documenting the outcome of the impact assessments.

1.4.4 The public participation process

Consultation with the public forms an integral component of this investigation and enables Interested and Affected Parties (I&APs)(e.g. directly affected landowners; national-, provincial- and local authorities; environmental groups; civic associations; and communities), to identify their issues and concerns, relating to the proposed activities, which they feel should be addressed in the EIA process. To create a transparent process and to ensure that I&APs are well informed about the project, as much information as is available has been included upfront to afford I&APs numerous opportunities to review and comment on the proposed project. A summary of the public participation process is provided in **Chapter 33**.

1.4.5 Authority involvement

Authority consultation represents the first stage of the public consultation process. The EIA Application Forms were submitted to DEA to notify them of the proposed projects. The DEA acknowledged receipt of the EIA Application Form and issued a reference number for the

proposed project. The Application Form and the DEA's letters of acknowledgement are included in **Annexure A**.

Where the need arises, Focus Group meetings will be arranged with representatives from the relevant national and provincial departments and local authorities. The purpose of these meetings will be to ensure that the authorities have a thorough understanding of the need for the project and that Aurecon has a clear understanding of the authority requirements[14]. It is anticipated that beyond providing key inputs into the EIA, this authority scoping process will ultimately expedite the process by ensuring that the final documentation satisfies the authority requirements and that the authorities are fully informed with respect to the nature and scope of the proposed PV solar energy facility.

The relevant sections of the Draft Scoping Report (DSR) were provided to the following authorities for comment, namely:

- Department of Environmental Affairs (DEA);
- National Department of Agriculture, Forestry and Fisheries: Directorate: Land Use and Soil Management;
- Emthanjeni Local Municipality;
- Pixley ka Seme District Municipality;
- Department of Environmental Affairs and Nature Conservation (DEANC;
- Eskom Holdings Limited;
- South African Heritage Resources Agency (SAHRA);
- Department Heritage Northern Cape;
- Department of Agriculture (Northern Cape); and
- Department of Water Affairs: Deputy Director Lower Orange WMA.

1.4.6 Decision making

The DSR will be made available to the public for a prerequisite 40 day comment period. All comments received during the comment period will be included in a Comments and Response Report (CRR) and annexed to the Final Scoping Report (FSR). Once the FSR has been completed, including the CRR, it will be submitted to the DEA for review.

The competent authority (DEA) must, within 30 days of receipt of the FSR, or receipt the required information, reports, or comments or an amended scoping report, consider it, and in writing –

(a) Accept the report and advise the Environmental Assessment Practitioner (EAP) to proceed with the tasks contemplated in the Plan of Study for EIA;

[14] It must be noted that the primary objective of the EIA is to satisfy the requirements of DEA, i.e. Regulation 543 of NEMA. It is not envisaged that the requirements of the other authorities would alter the approach or scope of the EIA as outlined in the proposal. However, these additional requirements would be captured to inform any further applications that may be required. Where the requirements of other authorities warrant specific actions/ responses, these will be discussed and agreed to with MRE prior to any action being undertaken.

(b) Request the EAP to make such amendments to the report as the component authority may require; or
(c) Reject the Scoping Report if it
    (i) Does not contain material information required in terms of these regulations, or
    (ii) Has not taken into account guidelines applicable in respect of Scoping Reports and Plans of Study for EIA.

1.5 ASSUMPTIONS AND LIMITATIONS

1.5.1 Assumptions

In undertaking this investigation and compiling the Scoping Report, the following has been assumed:

- The strategic level investigations undertaken by the DoE regarding South Africa's proposed energy mix prior to the commencement of the EIA process are technologically acceptable and robust;
- The information provided by the applicant is accurate and unbiased; and
- The scope of this investigation is limited to assessing the environmental impacts associated with the proposed solar energy facility and associated infrastructures to enable connection to the grid. The project does not include any infrastructure upgrades which may be required from Eskom to allow capacity in the local grid for the proposed project.

1.5.2 Gaps in knowledge

This Scoping Report has identified the potential environmental impacts associated with the proposed activities. However, the scope of impacts presented in this report could change, should new information become available during the EIA Phase. The purpose of this section is therefore to highlight gaps in knowledge when the Scoping phase of the project was undertaken, these include:

- Lack of confirmation of service's capacity from the municipality.
- Lack of clarity on the accommodation of construction workers.
- Source of water unknown.

The planning for the proposed project is at a feasibility level and therefore some of the specific details are not available at this stage of the EIA process. This EIA process forms a part of the suite of feasibility studies, and as these studies progress, more information will become available to inform the EIA process. This will require the various authorities, and especially DEA, to issue their comments and ultimately their environmental decision to allow for the type of refinements that typically occur during these feasibility studies and detailed design phase of projects. Undertaking the EIA process in parallel with the feasibility study does however have a

number of benefits, such as integrating environmental aspects into the layout and design and therefore ultimately encouraging a more environmentally sensitive and sustainable project.

1.6 INDEPENDENCE

The requirement for independence of the environmental consultant is aimed at reducing the potential for bias in the environmental process. Neither Aurecon nor any of its sub-consultants are subsidiaries of Mulilo, nor is Mulilo a subsidiary to Aurecon. Furthermore, all these parties do not have any interests in secondary or downstream developments that may arise out of the authorisation of the proposed project.

The Project Director, Mr Brett Lawson, Project Managers, Miss Louise Corbett, and Miss Karen Versfeld, and the Project Staff, Miss Karen van der Westhuizen, are appropriately qualified and registered with the relevant professional bodies. Mr Lawson is a certified Environmental Assessment Practitioners of South Africa (EAPSA), and both Mr Lawson and Miss Corbett are registered as Professional Natural Scientists with the South African Council for Natural Scientific Professions (SACNSP). Miss Versfeld is a Candidate Natural Scientist and Miss van der Westhuizen is registered as a Certified Natural Scientist with the SACNSP. Aurecon is bound by the codes of conduct for EAPSA and SACNASP. The CV summaries of the key Aurecon staff are included in the Plan of Study for EIA contained in **Chapter 5**.

1.7 STRUCTURE OF THE SCOPING REPORT

Table 1-5 presents the structure of the Scoping report as well as the applicable sections that address the required information in terms of NEMA. Specifically, Section 28 (1) of the EIA Regulations requires that the following information is provided:

Table 1-5: NEMA requirements for Scoping Reports

REGULATION	CONTENT AS REQUIRED BY NEMA	SECTION /ANNEXURE
28(1)(a)	(i) Details of the EAP who prepared the report; and	***Section 5.9 on page 78***
	(ii) Details of the expertise of the EAP to carry out scoping procedures.	***Section 5.9 on page 78***
28(1)(b)	A description of the proposed activity.	***Section 2.2 on page 31***
28(1)(c)	A description of any feasible and reasonable alternatives that have been identified.	***Section 2.3 on page 31***
28(1)(d)	A description of the property on which the activity is to be undertaken and the location of the activity on the property.	***Section 2.1.1 on page 31 and Section 4.2 on page 65***

REGULATION	CONTENT AS REQUIRED BY NEMA	SECTION /ANNEXURE
28(1)(e)	A description of the environment that may be affected by the activity and the manner in which the activity may be affected by the environment.	***Section 3.2 on page 52***
28(1)(f)	An identification of all legislation and guidelines that have been considered in the preparation of the scoping report.	***Section 1.2 on page 13***
28(1)(g)	A description of environmental issues and potential impacts, including cumulative impacts that have been identified.	***Section 4.3 on page58 and Section 5.2 (a)on page 65***
28(1)(h)	Details of the public participation process conducted in terms of regulation 27(a), including –	***Section 5.2.2 on page 65***
	(i) The steps that were taken to notify potentially interested and affected parties of the application;	***Section 3.2 on page 47***
	(ii) Proof that notice boards, advertisements and notices notifying potentially interested and affected parties of the proposed application have been displayed, placed or given;	***Annexure B***
	(iii) A list of all persons, organisations and organs of state that were registered in terms of regulation 55 as interested and affected parties in relation to the application; and	***Annexure B of FSR***
	(iv) A summary of the issues raised by interested and affected parties, the date of receipt of and the response of the EAP to those issues.	***FSR***
28(1)(i)	A description of the need and desirability of the proposed activity.	***Section 2.1 on page 31***
28(1)(j)	A description of identified potential alternatives to the proposed activity, including advantages and disadvantages that the proposed activity or alternatives may have on the environment and on the community that may be affected by the activity.	***Sections 40 2.3 on page 40***
28(1)(k)	Copies of any representations, comments received in connection with the application or the scoping report from interested and affected parties.	***Final Scoping Report***
28(1)(l)	Copies of the minutes of any meetings held by the EAP with interested and affected parties and other role players which record the views of the participants.	***Final Scoping Report***
28(1)(m)	Any response by the EAP to those representations and comments and views.	***Final Scoping Report***

REGULATION	CONTENT AS REQUIRED BY NEMA	SECTION /ANNEXURE
28(1)(n)	A plan of study for environmental impact assessment which sets out the proposed approach to the environmental impact assessment of the application, which must include:	***Chapter 5 on page 65***
	(i) A description of the tasks that will be undertaken as part of the environmental impact assessment process, including any specialist reports or specialised processes, and the manner in which such tasks will be undertaken;	***Section 5.2 on page 65and Section 5.3 on page 65***
	(ii) An indication of the stages at which the competent authority will be consulted;	***Section 5.2.2 (a) on page 65***
	(iii) A description of the proposed method of assessing the environmental issues and alternatives, including the option of not proceeding with the activity; and	***Section 5.2.3 on page 65***
	(iv) Particulars of the public participation process that will be conducted during the environmental impact assessment process.	***Section 3.4 on page 49***
28(1)(o)	Any specific information required by the competent authority.	***To be included in FSR***
28(1)(p)	Any other matters required in terms of sections 24(4) (a) and (b) of the Act.	***NA***
28(2)	In addition, a scoping report must take into account any guidelines applicable to the kind of activity which is the subject of the application.	***Section 1.3 on page 22***
28(3)	The EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by section 24(4) (b) (i) if the Act and motivation if no reasonable or feasible alternatives, as contemplated in sub-regulation (1) (c), exist.	***NA***

2 THE PROPOSED ACTIVITY

This chapter considers the need for the proposed project, briefly outlines the nature of the proposed activities and then considers and screens the various project alternatives in order to focus the EIA Phase on the most feasible alternatives.

2.1 THE NEED FOR THE PROPOSED ACTIVITY

The 2009 DEA&DP Guideline for Need and Desirability[15] highlights the obligation for all proposed activities which trigger the environmental regulations to be considered in light of (amongst others) the National Framework for Sustainable Development[16], the spatial planning context, broader societal needs, and financial viability. This information allows the authorities to contemplate the strategic context of a decision on the proposed activity. This section seeks to provide the context within which the need and desirability of the proposed activity should be considered.

The need for renewable energy is well documented and reasons for the desirability of solar energy include:

- Utilise resources available to South Africa;
- Meeting nationally appropriate emission targets in line with global climate change commitments;
- Enhancing energy security by diversifying generation; and
- Creating a more sustainable economy.

2.1.1 Utilise resources available to South Africa

As illustrated in **Figure 2-1** South Africa is subject to some of the highest levels of solar radiation in the World with an average daily solar radiation that varies between 4.5 and 6.5 kWh/m^2. This in comparison to about 3.6 kWh/m^2 for parts of the United States and about 2.5 kWh/m^2 for Europe and the United Kingdom (Department of Minerals and Energy, 2003) reveals that South Africa has considerable solar resource potential which must be utilised.

South Africa generates most of its required electricity from coal of which there is a ready supply of at the local level. However, national government is on the verge of augmenting the existing generation capacity of thermal and nuclear power plants with renewable energy power

[15]DEA&DP (2009) Guideline on Need and Desirability, NEMA EIA Regulations Guideline and Information Document Series. Western Cape Department of Environmental Affairs & Development Planning (DEA&DP).

[16]Republic of South Africa (2008) People – Planet – Prosperity: A National Framework for Sustainable Development in South Africa. Pretoria: Department of Environmental Affairs (DEA), Republic of South Africa [Internet]. Available from: http://www.environment.gov.za [Accessed 29 March2011].

generation, thus creating the framework that will lead to an increase in the supply of clean energy for the nation.

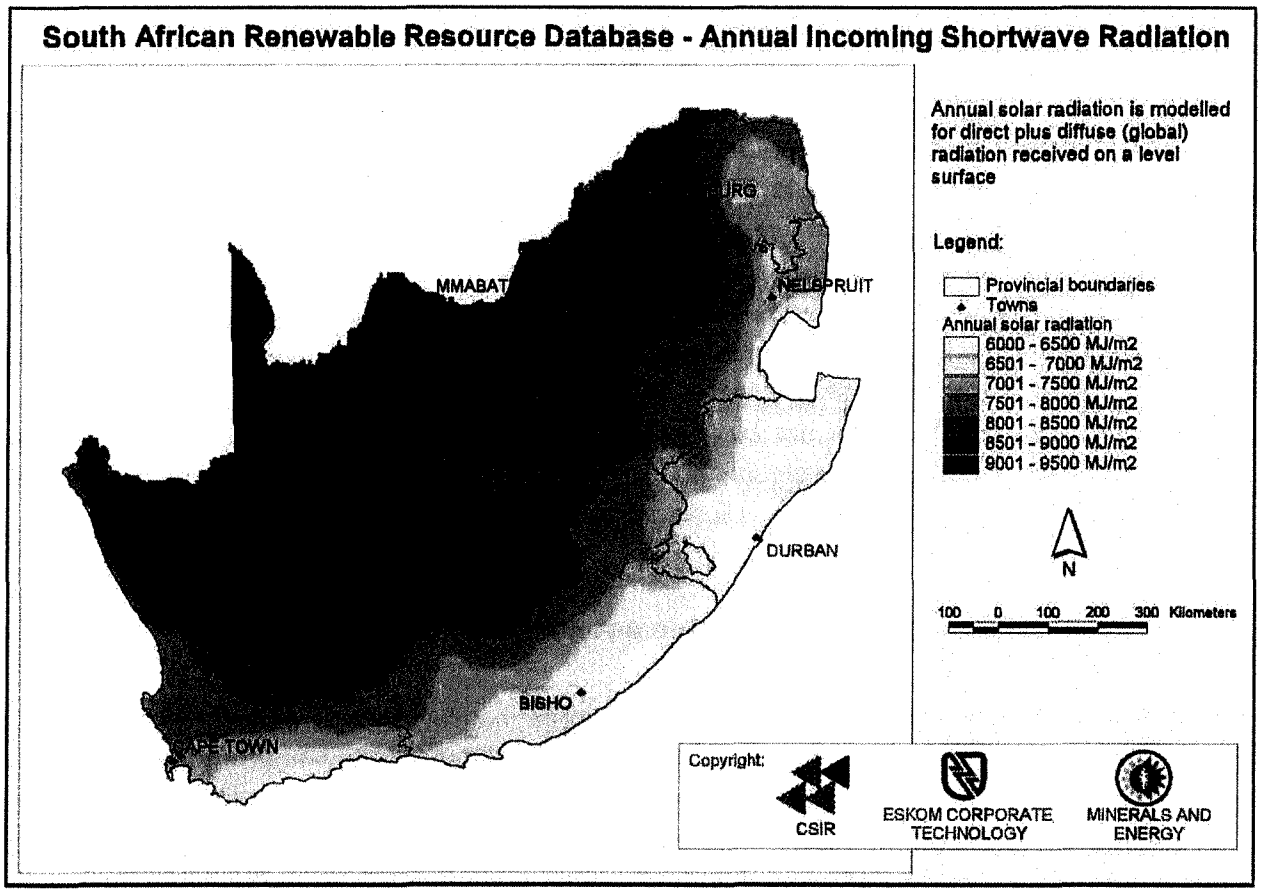


Figure 2-1: Annual solar radiation for South Africa (Department of Minerals and Energy, 2003)

2.1.2 Meeting nationally appropriate emission targets in line with global climate change commitments

As can be seen by the numerous policies and legislation described in **Section 1.2** the need for renewable energy is well documented. Due to concerns such as climate change, and the on-going exploitation of non-renewable, resources, there is increasing international pressure on countries to increase their share of renewable energy generation. The De Aar PV projects are expected to contribute positively towards climate change mitigation.

Solar energy is a source of "green" electricity as for every 1 MWh of "green" electricity used instead of traditional coal powered stations, one can:

- Save 1 290 liters of water;
- Avoid 8.22 kg of Sulphur Dioxide (SO_2)emissions;
- Avoid 1 000 kg of Carbon Dioxide (CO_2) emissions including transmission losses;
- Avoid 142 kg of ash production; and
- Contribute to social upliftment.

2.1.3 Enhancing energy security by diversifying generation

The establishment of the proposed De Aar PV power generation facilities would strengthen the existing electricity grid for the area. Moreover, the project will contribute towards meeting the national energy target as set by the DoE, of a 30 % share of all new power generation being derived from independent power producers (IPPs). Renewable energy is recognized internationally as a major contributor in protecting the climate, nature and the environment, as well as providing a wide range of environmental, economic and social benefits that can contribute towards long-term global sustainability. Should the proposed PV site and development identified by Mulilo be acceptable, it is considered viable that long term benefits for the community and society in De Aar would be realised as highlighted above. The proposed projects would also have international significance as it contributes to South Africa being able to meet some of its international obligations by aligning domestic policy with internationally agreed strategies and standards as set by the United Nations Framework Convention on Climate Change (UNFCCC), Kyoto Protocol, and United Nations Convention on Biological Diversity (UNCBD) all of which South Africa is a signatory to.

2.1.4 Creating a more sustainable economy

The Northern Cape, and particularly the De Aar area, has large tracts of land which are very dry and the farmers do their best to earn a living from the land. The towns are generally small and operate on a survival socio-economic level. The need to improve the quality of life for all, and especially for the poor, is critical in South Africa. It is expected that the proposed project will contribute directly to the upliftment of the individuals and the societies in which they live.

Skills development and the transfer thereof will be one of the top priorities and local community involvement will be enhanced as far as possible. Approximately 200 to 900 job opportunities will be created during the construction phase depending on the procurement method and the primary contractor.

Additional potential benefits include:

- Reducing the demand on scarce resources, such as water as the generation of energy from PV facilities uses less water per MW/h than coal-fired facilities;
- Reducing pollution as the generation of energy from PV facilities produces far less pollution per MW/h than coal-fired facilities;
- Local economic development; and
- Local skills development.

Table 2-1: Specific questions as detailed in the Need and Desirability Guideline

NEED (TIMING) Question	Response
1. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority i.e. is the proposed development in line with the projects and programmes identified as priorities within the IDP?	*The area proposed is currently zoned as Agricultural land. However the farmer has signed a lease agreement with Mulilo for portion 2 of the farm. The portion leased has relatively low agricultural potential and as it is a small area, in relation to the size of the entire farm, it would not affect the economic viability of the farm. Furthermore the additional income would safeguard the economic sustainability of the farm.* *Within the IDP, the following aspects were identified as land use needs for the residents:* • *Creation of a sustainable environment in Emthanjeni; and* • *Economic Development (Macroplan, 2007).* *The proposed PV solar facility would create job opportunities for a wide skill level. In addition, Mulilo has committed to developing a training strategy to train and employ people from the local community.* *The Emthanjeni SDF (Macroplan, 2007) proposed that industrial development must continue in a northerly direction, alongside the railway lines. The area proposed for the PV solar facility at Paarde Valley farm is located to the North of De Aar along the railway line.*
2. Should development, or if applicable, expansion of the town/ area concerned in terms if this land use (associated with the activity being applied for) occur at this point in time?	*Yes. The activity is in line with the Emthanjeni SDF which recognises the need for education and economic development to create a sustainable economy which creates employment opportunities for local people.*
3. Does the community/ area need the activity and the associated land use concerned (is it a societal priority)?	*Yes. The De Aar region has a high unemployment rate of 26 %.* *The proposed PV facilities in De Aar would not only be a source of income to farmers, but it would also create job opportunities for the local community as the construction and operation of the PV facilities require a wide range of skill levels which De Aar can, to a degree, supply.* *Secondary economic impacts may include an increase in tourism through the demand for*

	accommodation.
4. Are there necessary services with appropriate capacity currently available (at the time of application), or must additional capacity be created to cater for the development?	*Additional service provision capacity for the provision of potable water might be required for the proposed activity. It is unclear at this stage of the environmental process whether Mulilo will utilise water from existing boreholes or if water will be obtained from the closest municipal supply.* *Estimated water requirements:* • *Construction Phase: A 100MW would require roughly 36 000 kilo litre over a period of 6 months to a year.* • *Operational Phase: 1 kilo litre of water per day is required for 10 MW, therefore 100 MW would require 10 kilo liters per day. Please take note that the PV facility proposed for Paarde Valley farm would have a generation capacity of 75 -150MW.* *The establishment of the proposed De Aar PV power generation facilities would strengthen the existing electricity grid for the area resulting in a positive impact on the available electrical services.*
5. Is this development provided for in the infrastructure planning of the municipality, and if not, what will the implication be on the infrastructure planning of the municipality (priority and placements of services)?	*No. It should be noted that once the proposed PV sites are operational, there would be a very limited requirement for municipal services. The only requirement may be potable water, however as mentioned above, it is unclear as to the source of water.*
6. Is this project part of a national programme to address an issue of national concern or importance?	*Yes. The establishment of the proposed De Aar PV power generation facilities would strengthen the existing electricity grid for the area. Moreover, the project would contribute towards meeting the national energy target as set by the DoE, of a 30 % share of all new power generation being derived from IPPs.*
DESIRABILITY (PLACING) Question	**Response**
1. Is the development the best practicable environmental option (BPEO) for this land/ site?	*Yes. De Aar is a very arid region and farmers are struggling to make a living from the land. The area, specifically Paarde Valley Farm, being proposed for the PV facility has very little agricultural potential which is why the proposed facility is the preferred option for this site.*
2. Would the approval of this application compromise the integrity of the existing approved Municipal IDP and SDF as agreed to by the relevant authorities.	*No. The activity is in line with the Emthanjeni Spatial Development Framework and IDP which recognizes the need for:* • *Creation of a sustainable environment in Emthanjeni; and*

	• *Economic Development (Macroplan, 2007).* *The proposed PV facilities in De Aar would not only be a source of income to farmers, but it would create job opportunities for the local community as the construction and operation of the PV facilities require a wide range of skill levels which De Aar can, to a degree, supply.* *The Emthanjeni SDF (Macroplan, 2007) proposed that industrial development must continue in a northerly direction, alongside the railway lines. The area proposed for the PV solar facility at Paarde Valley Farm is located to the North of the railway line, which is in line with the Emthanjeni SDF.*
3. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area (e.g. as defined in EMFs), and if so, can it be justified from in terms of sustainability considerations?	*No. The Emthanjeni municipality do not have an EMF in place.*
4. Do location factors favour this land use (associated with the activity applied for) at this place?	*Yes. The sites were selected based on the following criteria:* • *Solar resource potential based on historic satellite data;* • *Grid connectivity and close proximity to strong grid access;* • *Flat, level, and open land; and* • *Unpopulated and non-arable or low arable potential land.* *Desktop studies furthermore assessed potential sensitivities of fauna, flora, heritage, visual and other technical aspects.* *The area proposed is outside the drainage line, has low agricultural significance and is in close proximity to Eskom's existing transmission lines.*
5. How will the activity or the land use associated with the activity applied for, impact on sensitive natural and cultural areas (built and rural/ natural environment)?	*Potential impacts associated with the proposed upgrade will be discussed and assessed during the EIA phase. Refer to the Plan of Study for EIA in Chapter 5.*
6. How will the development impact on people's health and wellbeing (e.g. in terms of noise, odours, visual character and sense of place, etc.)?	*Potential impacts associated with the proposed upgrade will be discussed and assessed during the EIA phase. Refer to the Plan of Study for EIA in Chapter 5.*
7. Will the proposed activity or the land use associated with the activity applied for, result in	*The socio-economic impacts will be assessed and discussed in the EIA phase. Refer to the*

unacceptable opportunity costs?	*Plan of Study for EIA in Chapter 5.*
8. Will the proposed land use result in unacceptable cumulative impacts?	*Potential cumulative impacts associated with the proposed upgrade will be discussed and assessed during the EIA phase. Refer to the Plan of Study for EIA in Chapter 5.*

2.2 DESCRIPTION OF THE PROPOSED PROJECT

Mulilo proposes to construct a PV solar energy facility to generate approximately 75-150 MW on an area covering 225 ha to 450 ha on the Paarde Valley farm (Farm No. 145 Portion 2) near De Aar.

Photovoltaic (PV) solar energy facilities use light energy from the sun to generate electricity through a process known as the PV Effect. The PV cells are made of silicone which acts as a semi-conductor. The cells absorb light energy which energises the electrons to produce electricity. The individual PV cells can be connected and placed behind a protective glass sheet to form a photovoltaic panel. These panels are relatively durable and can last up to 30 years due to the immobility of parts and the sturdiness of the structure. These panels are arranged in multiples/arrays onsite to maximize the exposure to solar radiation. An inverter is used to convert the electricity which is produced as direct current into alternating current for grid connection (see **Figure 2-2** below for basic PV system layout).

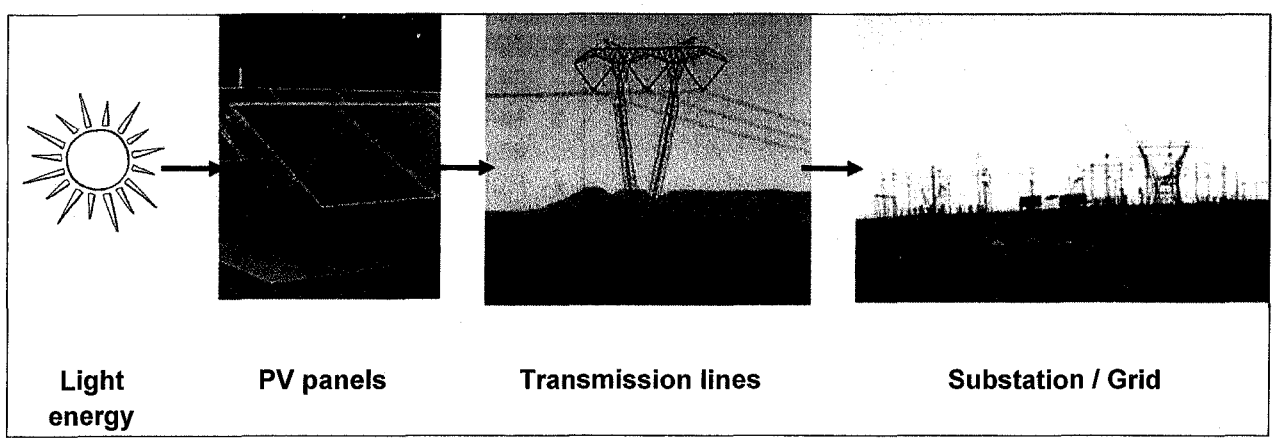


Figure 2-2: Basic PV system layout

It should be noted that the PV panels are treated with an antireflective coating to reduce the glare and reflectiveness of the panels to mitigate the potential negative visual impact.

2.2.1 Associated infrastructure

During the construction, operational, and decommissioning phases, the following associated infrastructures would be required:

- Two 132 kV overhead transmission lines would be required to connect the proposed solar PV facility with Eskom's grid. A 132kV overhead transmission line (2.5 km in length) would be required to connect to the De Aar substation and a 132kV overhead transmission line (20 km in length) would be required to connect to the Hydra substation (see **Figure 2-3** for an example of the proposed transmission lines).

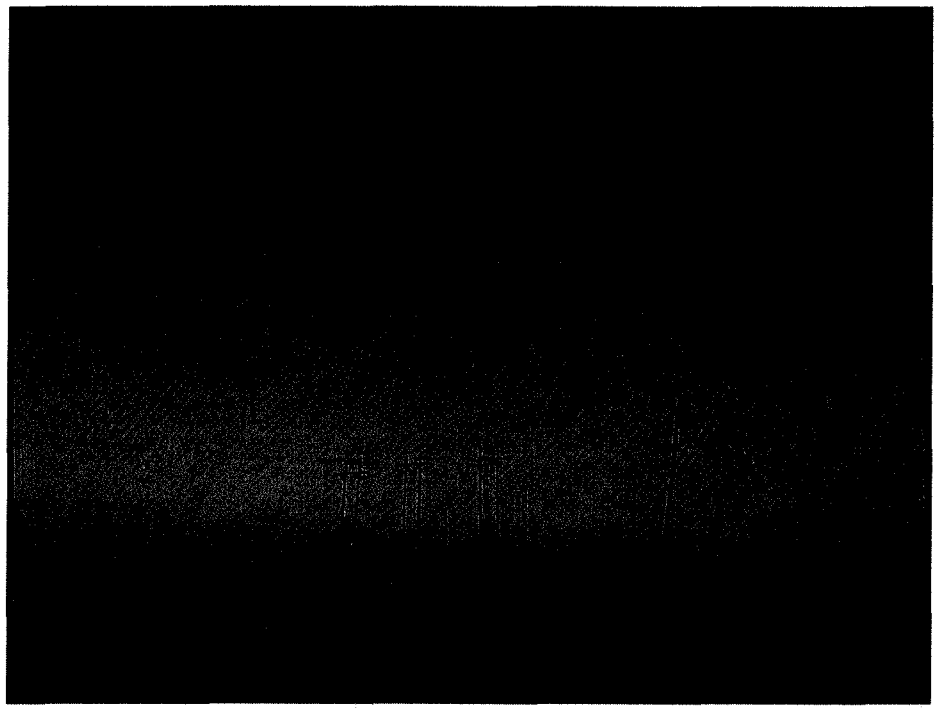


Figure 2-3: Example of the proposed transmission line type to connect the proposed PV facility with Eskom's grid

- Storm water management infrastructure, such as concrete channels, would be required to manage the onsite runoff and to direct the flow of storm water.
- The entire site would be fenced with electric fencing to prevent illegal trespassing and livestock from roaming between the PV arrays and causing accidental damage.
- Water supply infrastructure (which will be determined by the source of the water supply):
    - *Municipal supply*: Should potable water be obtained from the Local Municipality, it may be necessary to construct a pipeline to direct water from the municipal network to the site location of the proposed activity.
    - *Groundwater*: Should water be sourced from boreholes, it may be necessary for Mulilo to construct the required support infrastructure, such as pipelines and storage facilities.

2.2.2 Construction phase

The proposed facility will be constructed over a period of 18 to 30 months. Should all three proposed PV facilities (PV2 {75-150 MW PV facility proposed for the Paarde Valley farm}, PV3 {100-135 MW PV facility proposed for the Badenhorst dam farm}, and PV4 {19 MW PV facility proposed for Annex Du Plessis Dam farm}) be approved, it is anticipated they would all be

constructed simultaneously, in order to make the project more cost effective and reduce the potential impacts associated with the construction phase.

During the construction phase between 200 and 900 individuals would be employed depending on the procurement method used as well as the primary contractor. If non-locals are employed they would be housed in temporary dwellings on site or in accommodation within De Aar. More detail will be provided on the accommodation of staff in the EIAR.

Between two and five digger loaders/ bulldozers would be required for land clearing and five to ten trucks with cranes would be required for the assembly of the facility. Approximately 450 truck deliveries conveying approximately 900 40-foot container loads would be required to construct the PV solar facility. These deliveries would be distributed over the 18 to 30 month construction period.

Mulilo would investigate options to obtain components either from local or international suppliers. Mulilo have indicated that preference would be given to local suppliers.

2.2.3 Operational phase

The project is expected to last the full period of the Power Purchase Agreement which is approximately 20 years.

To ensure that maximum quantities of sunrays can be captured by the PV panels it is important to undertake regular cleaning of the panels as dust, dirt, pollen, and bird excretions can reduce the efficiency of PV panels (Ibrahim, 2010). The frequency of panel cleaning would depend on the site conditions. Panels would be washed with water and a mild, organic, and non-abrasive detergent. Water for the cleaning of the panels would either be sourced from onsite boreholes or obtained from the closest municipal source.

2.2.4 Decommissioning phase

The PV site would be decommissioned at the end of the Power Purchase Agreement (20 years from the date of commissioning). The decommissioning is expected to take between 6 to 12 months. The module components would be removed and recycled as the silicon and aluminum could be re-used in the production of new modules.

2.2.5 Mulilo's commitments

Mulilo recognises that by constructing PV solar energy facilities near De Aar constitute a change in the predominant land-use andwouldresult in impacts (both positive and negative) to the biophysical and social environment. Furthermore, as this is a long-term project (the life of the facility is designed to be 20 years) Mulilo takes cognisance of the need to create a sustainable environment within the community.

In order to create a sustainable environment, Mulilo proposes to:

- Initiate a training strategy to enable employment from the local community.
- Give preference to local suppliers of components for the construction of the facility.
- Put in place a maintenance plan to ensure that broken panels or materials are recycled or are disposed of in an environmentally sound manner.
- Recycle the panels (the silicon and aluminium found within the panels can be reprocessed to make new modules) following the decommissioning of the site.
- Rehabilitate the site to its original state prior to the construction of the PV facility.

2.3 CONSIDERATION OF ALTERNATIVES

2.3.1 Introduction

NEMA requires that alternatives are considered during the EIA process. An important function of the Scoping Phase is to screen alternatives to derive a list of feasible alternatives that need to be assessed in further detail in the EIA Phase. An alternative can be defined as a possible course of action, in place of another, that would meet the same purpose and need (DEAT, 2004).

"alternatives", in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

(a) the property on which or **location** where it is proposed to undertake the activity;
(b) the type of **activity** to be undertaken;
(c) the design or **layout** of the activity;
d) the **technology** to be used in the activity;
(e) the **operational** aspects of the activity; and
(f) the option of not implementing the activity ("No-Go" alternative).

The alternatives most pertinent to the proposed project include the following:

- ***Site location alternatives*** -alternative site locations for the entire project proposal.
- ***Activity (type) alternatives***- also referred to as project alternatives. Requires a change in the nature of the proposed activity. This category of alternatives is most appropriate at a strategic decision-making level.
- ***Layout alternatives*** - site layout alternatives permit consideration of different spatial configurations of an activity on a particular site.
- ***Technology alternatives*** – technology alternatives permit consideration of different types of technology used in the project.

The above categories of alternatives are the ones most pertinent to this EIA process, and will be explored in detail below. The purpose of this section of the report is to identify (scope) and describe all potential alternatives and determine which alternatives should be carried through to the EIA Phase of the project for further assessment.

2.3.2 Location alternatives

Mulilo has considered the option to develop large scale PV power generation in South Africa over the last three years, given the good solar resource which is available over a large portion of the western part of the country. Mulilo identified PV power generation potential in the wide open plains of the Northern Cape, within Emthanjeni Local Municipality, surrounding the town of De Aar.

The Northern Cape, specifically De Aar, was selected as a suitable area for solar power generation based on the following criteria:

- Solar resource potential based on historic satellite data;
- Grid connectivity and close proximity to strong grid access;
- Flat, level, and open land; and
- Unpopulated and non-arable or low arable potential land.

Based on the above, the Mulilo is pursuing three locations for proposed solar energy generation through three separate environmental processes. Together, the three PV solar facilities would have a total capacity of 229 MW to 304 MW of electricity. The identified sites have been secured, with Mulilo entering into long term agreements with the land owners. Grid connectivity via De Aar and Hydra substation has been discussed with Eskom, who are supportive of this project. As Mulilo has considered alternatives sites, and selected Paarde Valley farm as one of the preferred sites, this EIA will assess the location alternative of Paarde Valley farm only[17]. Please see **Figure 1-1** for the proposed area for the PV facility for Paarde Valley farm.

2.3.3 Activity alternatives

As can be seen by the numerous policies and legislation described in **Section 1.2** the need for additional energy generation in South Africa is well documented. Furthermore, numerous policies and legislation have been promulgated indicating the mixture of renewable and non-renewable energy which South Africa wishes to pursue. These strategic documents provide the road map for the activity alternatives available to South Africa. The IRP2010 allows for an additional 20 409 MW of renewable energy in the electricity mix in South Africa by 2030 and based on this requirement for renewable energy Mulilo has identified a number of projects for solar- and wind energy generation.

2.3.3.1 Solar technology

Mulilo investigated both photovoltaic solar cells and concentrating solar thermal power (CSP) to generate electricity from light energy. CSP technology uses mirrors or lenses to concentrate the sunlight onto a small area. Electricity is then produced when the light is converted to heat which

[17] Please refer to *Proposed Photovoltaic Energy Facility on the Paarde Valley farm near De Aar in the Northern Cape (DEA Ref. No: 12/12/20/2500 / NEAS Ref. No: DEAT/EIA/0000607/2011)*, which is available on the Aurecon website (www.aurecongroup.com – indicate "Current Location" as "South Africa" and follow the Public Participation link) for comment.

drives a heat engine, usually a steam turbine. Solar power technology captures sunlight and converts it directly into electricity.

One of the determining factors in selecting solar (PV) technology is the requirement for water. CSP technology requires large volumes of water for cooling, which makes them less suitable for an arid water scarce environment, such as the Northern Cape. Solar (PV) technology has a lower requirement for water, which makes this technology more suitable for this area.

2.3.3.2 No-go alternative

The no-go alternative is the baseline against which all alternatives are assessed. It consists of the *status quo*, and as such will not be explicitly assessed.

2.3.4 Site layout alternatives

Two layouts have been developed for the proposed site (see **Figure 2.4**). The development of these layout alternatives were based on *inter alia* the following criteria:

- Technical constraints
  - Spatial orientation requirements of panels and associated infrastructure (e.g. roads); and
  - Layout relative to other existing infrastructure, such as power lines.
- Environmental constraints
  - Topographical constraints, including surface and groundwater; and
  - Aesthetics.

These site layouts will be updated during the EIA Phase, as required based on any environmental sensitivities or technical constraints identified, and will be presented and assessed in the Draft EIAR.

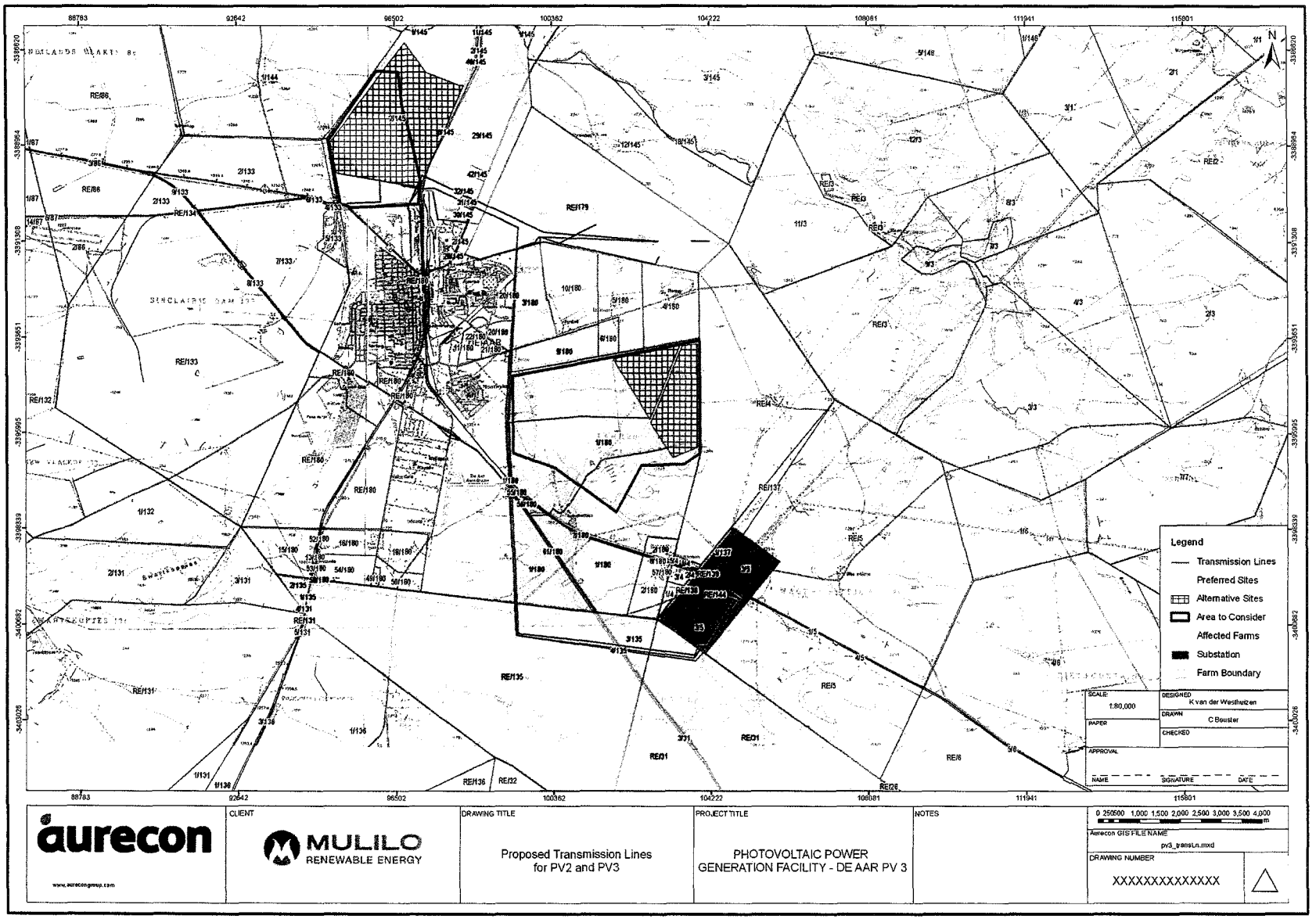


Figure 2-4: Site layout alternatives and proposed transmission line layout

2.3.5 Technology alternatives

2.3.5.1 Mounting of PV panels

There are various ways to mount the PV panels in order to maximise the area of the PV panel exposed to sunlight for the maximum amount of time. In a fixed axis system the PV panels are installed at a set tilt and cannot move, whereas in a one or two axes tracking system the panels follow the sun to ensure maximum exposure to sunlight.

Mulilo will investigate the following alternative mounting options for the PV solar panels:

- Fixed axis photovoltaic (**Figure 2-5** {a});
- Single axis tracking PV (**Figure 2-5** {b} and **Figure 2-6**); and
- Concentrated dual axis tracking (**Figure 2-5** {c}).

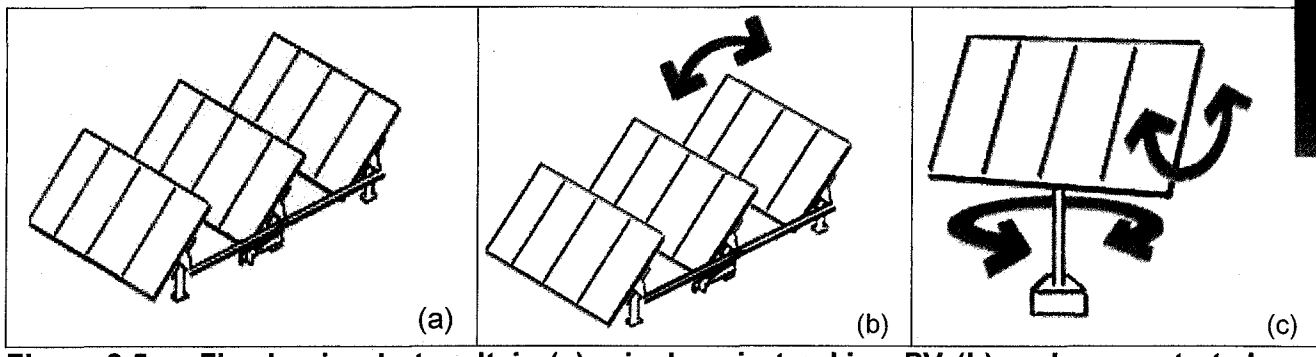


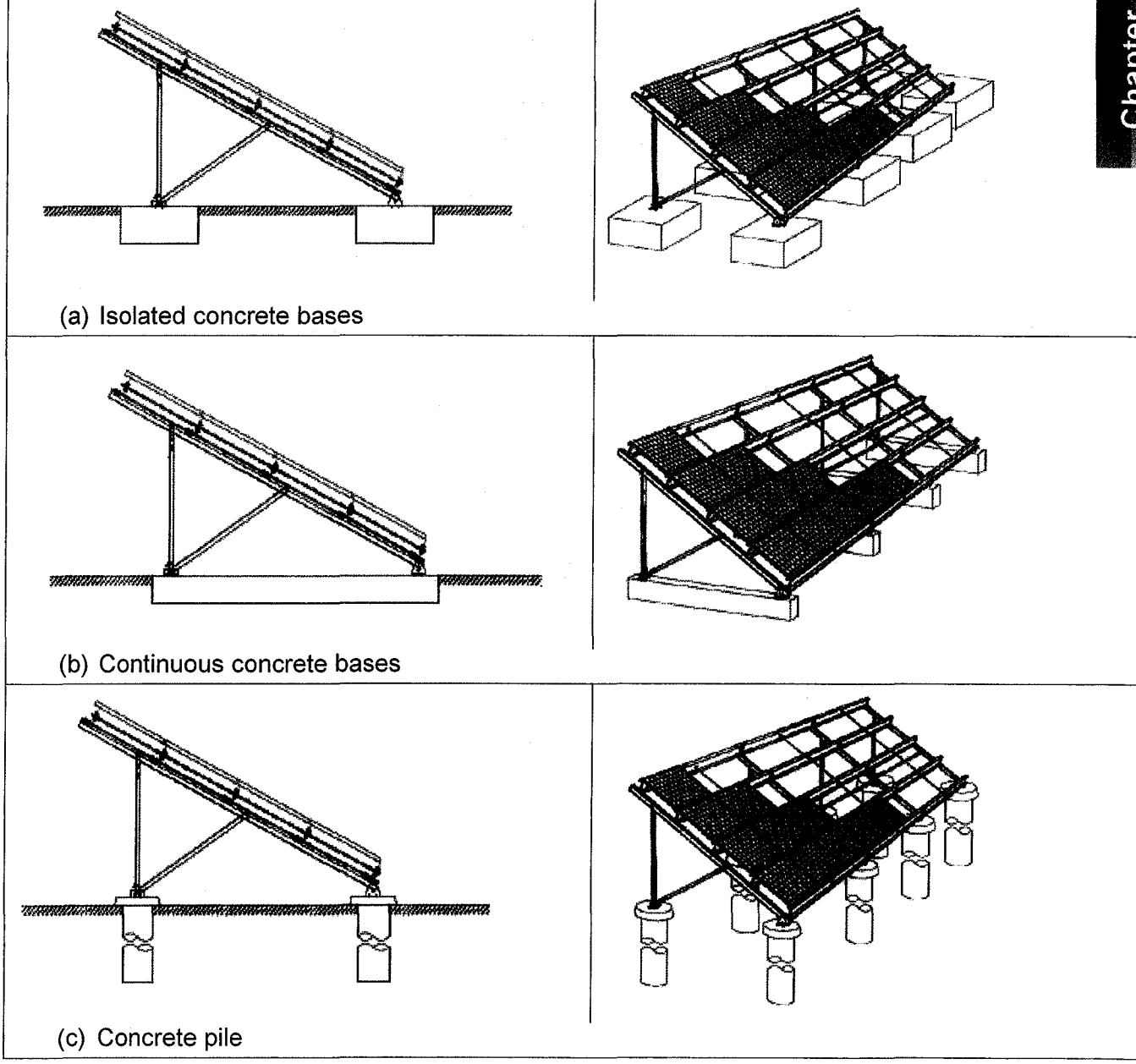
Figure 2-5: Fixed axis photovoltaic (a); single axis tracking PV (b) and concentrated dual axis tracking (c)

Figure 2-6: Example of an single axis tracking system with panels arrange in parallel (courtesy: Mulilo)

2.3.5.2 Foundation alternatives

There are various methods for anchoring PV arrays, but it is important to opt for the best option depending on the soil characteristics of the area. The anchoring structure would need to withstand climatic conditions in order to prolong the lifespan of the panels. A geotechnical assessment would however be required to determine the soil conditions and the type of anchoring required. As this study will only be completed during the EIA Phase, the following anchoring options will be considered (see **Figure 2-7**):

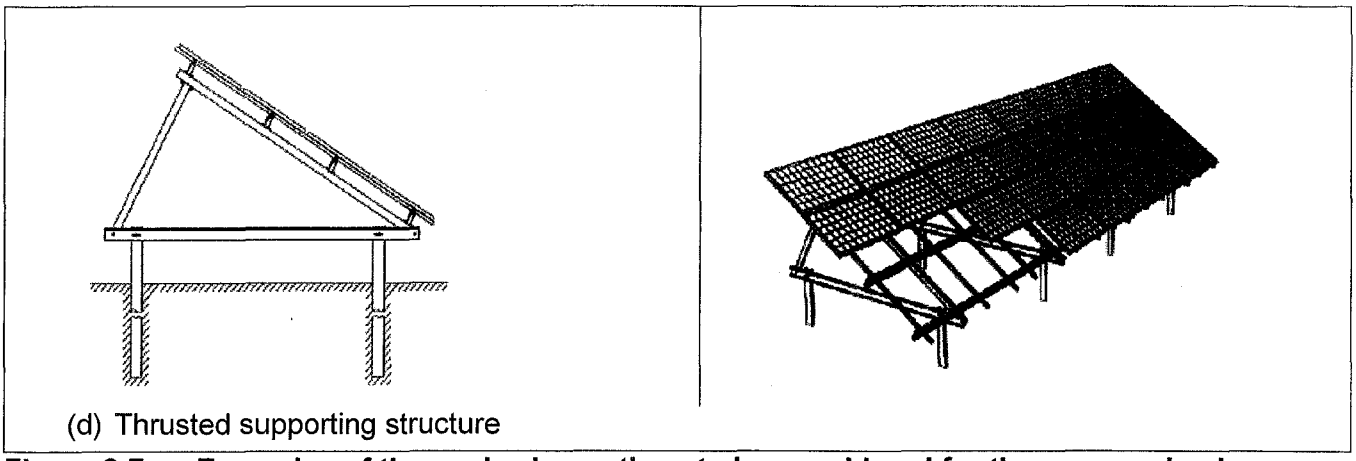
- Isolated concrete bases;
- Continuous concrete bases;
- Concrete pile; and
- Thrusted supporting structures.



(a) Isolated concrete bases

(b) Continuous concrete bases

(c) Concrete pile



(d) Thrusted supporting structure

Figure 2-7: Examples of the anchoring options to be considered for the proposed solar plant (courtesy: Mulilo)

2.3.6 Summary of alternatives

To summarise, the feasible alternatives which will be assessed in the EIAR include the following:

- Location alternatives:
  - One location alternative on Paarde Valley farm.
- Activity alternatives:
  - Solar energy generation via PVs; and
  - "No-go" alternative to PV solar energy production.
- Site layout alternatives:
  - Two layout alternatives.
- Technology alternatives:
  - Mounting of PV Panels:
    - Fixed axis photovoltaic;
    - Single axis tracking PV; and
    - Concentrated dual axis tracking.
  - Foundation alternative:
    - Isolated concrete bases;
    - Continuous concrete bases;
    - Concrete pile; and
    - Thrusted supporting structure.

3. THE PUBLIC PARTICIPATION PROCESS

The purpose of this Chapter is to provide an outline of the Public Participation Process, a summary of the process undertaken to date, and the way forward with respect to public participation as part of the EIA Phase of this project. This Chapter also provides a summary of the key issues that have been raised to date.

3.1 INTRODUCTION

Consultation with I&APs forms an integral component of an EIA process (see **Figure 1-3**) and enables *inter alia* directly affected landowners, neighbouring landowners, stakeholders, communities and interested parties to identify the issues and concerns relating to the proposed activity, which they feel should be addressed in the process. The approach to this public participation process, summarised in the Plan of Study for EIA (Chapter 5), has taken cognisance of the DEAT Guideline on Stakeholder Engagement (2002) and the Integrated Environmental Management Guideline Series, Guideline 4: Public Participation 2005, in support of the EIA Regulations.

Public participation, as required in terms of the EIA Regulations can, in general, be separated into the following phases:

Comment on Draft and Final Reports
During the Scoping and EIA Phases, potential I&APs are provided with an opportunity to register themselves as I&APs and comment on draft and final versions of the reports. This is enabled by the lodging of the reports at suitable locations and invitations to public meetings/open houses to discuss the content of the relevant report.

Decision and Appeal period
This is the final phase of the public participation process. Once the competent authority has made their decision and issued an Environmental Authorisation, the applicant and I&APs are notified of the decision and have the opportunity to appeal, within the stipulated timeframes.

Progress with respect to these various stages for the current project is discussed in more detail below. It should be noted that the public participation process developed for this investigation meets the minimum requirements of NEMA.

3.2 PUBLIC PARTICIPATION PROCESS DURING SCOPING

3.2.1 Initiation of the public participation process

The approach adopted for the current investigation was to identify as many I&APs as possible initially, through a suite of activities, as follows:

- Placing advertisements in local newspapers (*The Echo and Die Volksblad*);
- Placing a notice board at the site;
- Providing written notice to potential I&APs including surrounding landowners, organs of state and relevant authorities; and
- Requesting potential I&APs to recommend other potential I&APs to include on the database (chain referral process).

Thereafter, the remainder of the communications will be focused on registered I&APs. Consequently, the initial advertising campaign was broad and thorough and invited the members of the public to register as I&APs.

3.2.2 Compilation of I&AP database

The I&AP register compiled during the Environmental Process for the establishment of a 10 MW facility on Paarde Valley farm near De Aar served as the baseline I&AP register for this EIA process[18]. The initial database of I&APs was updated by adding the landowner, the adjacent landowners, relevant district and local municipal officials, relevant national and provincial government officials, and organisations in the area. This database will be augmented via chain referral during the EIA process, and will be continually updated as new I&APs are identified throughout the project lifecycle. The current list of potential I&APs is included in **Annexure B**. The sectors of society represented by I&APs on the database are listed below.

(i) Provincial government (Northern Cape);
(ii) Local government (Emthanjeni LM and Pixley ka Seme District Municipality);
(iii) Local landowners;
(iv) Industry; and
(v) Local communities in the project area.

3.2.3 Advertising in local newspapers

Advertisements for the EIA process appeared in the De Aar local newspaper, *The Echo* and in the provincial *Die Volksblad*, on 4 November 2011, in order to inform potential I&APs of the availability of the DSR. Potential I&APs were invited to register themselves as I&APs in order to receive further communication on the project later in the process. Copies of the advertisements are included in **Annexure B**.

[18] DJ Environmental Consultants 2010. Final Environmental Impact Assessment Report Proposed Photovoltaic Power Generation Facility, De Aar. \\AURECON.INFO\SHARES\ZACPT\PROJECTS_AFS_OLD\DATA\ENV\PROJECTS\107514~MULILO DE AAR PVS\BG INFO\OLD\DE AAR PV- FEIR

3.2.4 Site notices

A site notice was placed at the site entrance on 8 November 2011. The notice provided a description of the proposed activities and EIA process, and invited members of the public to register as I&APs, and raise any initial issues or concerns. The content of the site notice is included **Annexure B**.

3.3 ISSUES AND CONCERNS

I&APs are invited to submit comments or concerns on the Draft Scoping Report to the environmental consultants during the comment period from 4 November 2011 until 5 January 2012.Comments and concerns can be submitted via telephone, mail, fax, and e-mail during the comment period. Comments and concerns raised by I&APs (with regards to the proposed activities) will be incorporated into the FSR.

3.4 COMMENT ON DRAFT SCOPING REPORT

The initial stage of the public participation process involves the lodging of this DSR in De Aar Public Library, Emthanjeni municipal offices located in Voortrekker Street, and on the Aurecon website (www.aurecongroup.comchange "Current Location" to South African and follow the public participation link).

Executive summary, letters and adverts will be available in English and Afrikaans.

Potential I&APs were notified of the period available to submit their comments or concerns on the DSR by means of a letter sent by post, fax or e-mail by 5 January 2012.Copies of the notification letters are included in **Annexure B**.

I&APs have 40 days, until 5 January 2012, to submit their written comments on the DSR. Cognisance will be taken of all comments in compiling the final report, and the comments, together with the project team and proponent's responses thereto, will be included in the FSR.

Comments should be directed to:

Aurecon
Karen van der Westhuizen / Karen Versfeld
P O Box 494, Cape Town, 8000
Tel: 021 526 6044/5737
Fax: 086 535 9856
Email: karen.vanderwesthuizen@aurecongroup.com / karen.versfeld@aurecongroup.com

A focus group meeting will be held on **Wednesday, 30 November 2011** to present and discuss the findings of the DSR at the following venue:

Date	Venue	Time
30 November 2011	Emthanjeni Municipal Civic Centre	16h00- 18h00

The purpose of the meeting will be to present the findings of the DSR and provide the landowners, municipal officials, and adjacent landowners with an opportunity to comment on the DSR and to raise any questions or uncertainties. Notification letters of the focus group meeting have been included in **Annexure B**.

3.5 COMMENT ON THE FINAL SCOPING REPORT

In accordance with the NEMA EIA Regulations, I&APs must be given the opportunity to comment on all final reports. Consequently, the FSR will be available for a 21 day comment period. All comments received on the FSR will not be collated into a CRR, but will be appended to the FSR for the perusal by Authorities.

Executive summary, letters and adverts would be in English and Afrikaans. Any written submissions can be in English, Afrikaans or Xhosa (three of the four languages of the Northern Cape).

3.6 REVIEW AND DECISION PERIOD

On completion of the public comment period, the FSR will be submitted to DEA for their review and decision regarding acceptance of the report and related Plan of Study for EIA. DEA have a 30 day comment period and thereafter they may either issue a letter accepting the Scoping Report and Plan of Study for EIA or reject it.

4. DESCRIPTION OF THE AFFECTED ENVIRONMENT AND POTENTIAL IMPACTS

The purpose of this Chapter is to provide a brief description of the affected environment and the potential impacts that could result from the proposed project. Where additional information is required for detailed assessment in the EIAR, the Terms of Reference for specialist studies are given.

4.1 INTRODUCTION

The description of the affected environment provided below draws on existing knowledge from published data, previous studies, site visits to the area and discussions with various role-players. The identification of potential impacts which may occur as a result of the proposed activities described in **Chapter 2** of this report is broad, to cover the operational phase as well as the construction phase of the project. In cases where there is currently inadequate information to facilitate assessment of the potential impact, a draft ToR and proposed specialist consultant is provided. Impacts of lesser importance are also screened out, with reasons provided, to ensure that the EIAR is focused on the potentially significant impacts.

4.1.1 Location of the proposed project

The proposed project is located close to the town of De Aar, which falls within the Northern Cape Province approximately 300 km southwest of Kimberley at 1 280 m above sea level (see **Figure 4-1**). De Aar, meaning "artery" in Dutch, was established in 1903. The name refers to the water-bearing arteries that occur underground. Approximately 50 to 70 boreholes supply the town with water.

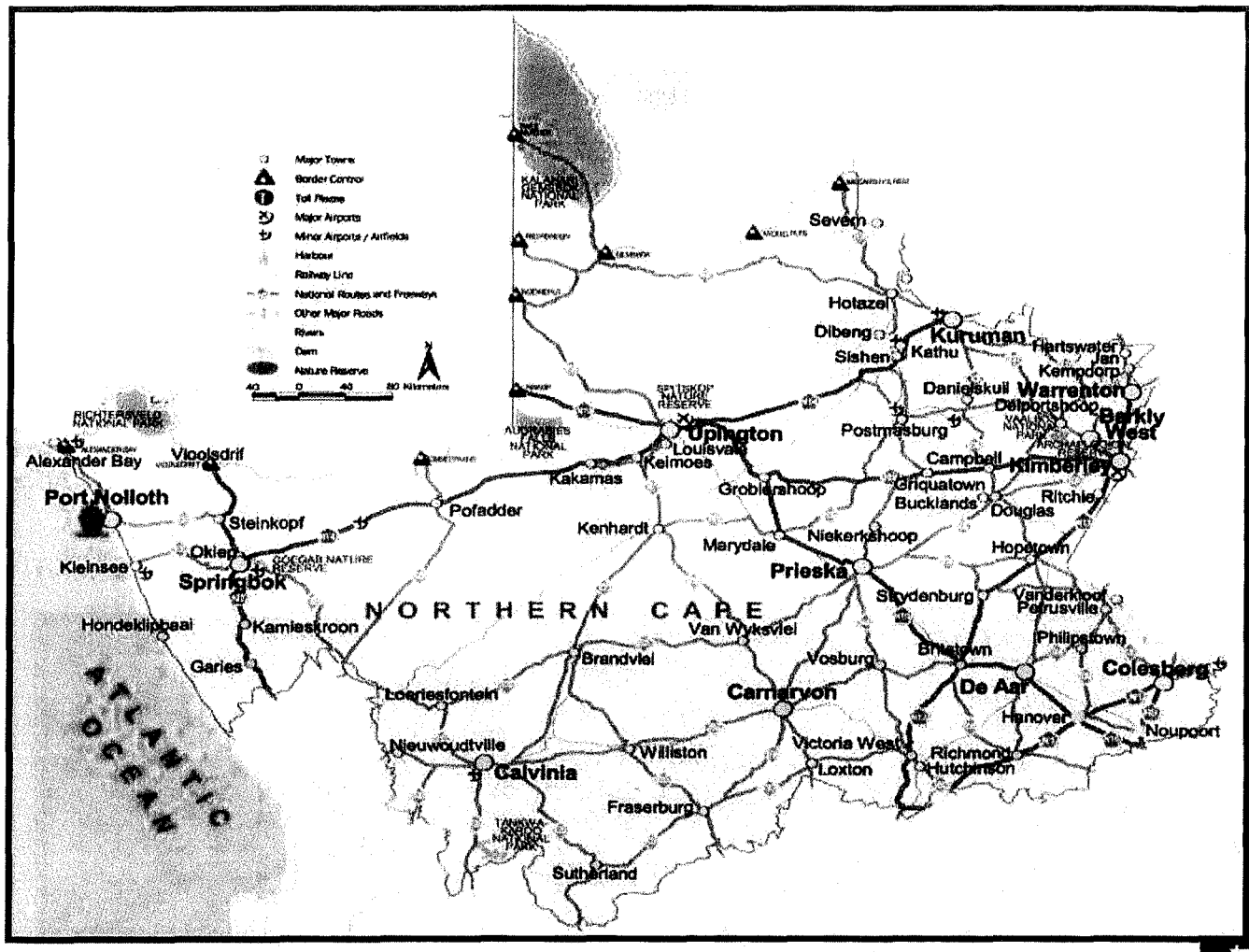


Figure 4-1: Locality map of De Aar indicating the major roads and railway lines linking De Aar with the rest of the country[19]

4.2 BRIEF DESCRIPTION OF THE AFFECTED BIOPHYSICAL AND SOCIO-ECONOMIC ENVIRONMENT

4.2.1 Description of site

The proposed site for the construction of the photovoltaic facility is the Paarde Valley farm (Farm No. 145 Portion 2). Paarde Valley farm is located approximately 4.5 km from the Nonzwakazi informal settlement and approximately 2 km North of De Aar. The portion is owned by Marais Louis Charles-Trusteeswith which Mulilo has entered into a long term agreement with for the proposed project. The corner point co-ordinates of the proposed area, moving in a clockwise manner, starting at the bottom left corner, are given in **Table 4-1**(See **Figure 4-2**).

[19]http://www.google.co.za/imgres?q=major+roads+de+aar&um=1&hl=en&safe=active&sa=N&biw=1024&bih=632&tbm=isch&tbnid=gOqe4Sg4tFKDYM:&imgrefurl=http://www.southafricaholiday.org.uk/places/c_nc_deaar.htm&docid=XfJpMP7Wz2IEdM&imgurl=http://www.southafricaholiday.org.uk/images/mapdetail_northerncape.jpg&w=800&h=600&ei=pYGvTs7VAoP38QP1nIy0AQ&zoom=1

Table 4-1: Co-ordinates of corner points of the site

	Latitude	Longitude
A	30°37'53.96"S	24°00'45.57"E
B	30°37'50.19"S	24°00'35.39"E
C	30°37'51.65"S	23°59'31.57"E
D	30°36'57.96"S	23°59'20.41"E
E	30°35'30.72"S	24°00'30.66"E
F	30°35'31.62"S	24°00'46.80"E
G	30°35'17.16"S	24°01'17.62"E
H	30°35'14.54"S	24°01'31.14"E
I	30°35'23.41"S	24°01'37.62"E
J	30°36'23.41"S	24°01'37.62"E
K	30°36'01.72"S	24°01'38.44"E
L	30°37'23.62"S	24°00'52.51"E

Figure 4-2: Corner points of the area to be investigated during the EIA phase (source: Google Earth Pro)

4.2.2 Climate

The Northern Cape experiences typical semi-desert and desert climatic conditions. De Aar is located within the low rainfall area of the Northern Cape and typically receives about 196 mm of rainfall per annum. Approximately 45 mm are received during March. Mean temperatures range between 30°C and 40°C during summer months and the temperature can drop to -10°C during winter nights[20].

4.2.3 Topography

The Northern Cape is characterised by wide open plains, sparse settlements and open spaces. The topography of the area is relatively flat, although a few ridge shaped hills and larger flatter plateaus do emerge as can be seen in **Figure 4-3**. The site for the proposed PV facility is located on the open plains.

4.2.4 Flora

The study area lies near the eastern edge of the Nama Karoo biome, and has a single mapped vegetation type namely the Northern Upper Karoo. The characteristics of vegetation in the area are mainly influenced by soil type and habitat rockiness. Shrubs that rarely exceed 70 cm in height dominate the plains and the hills and mountains tend to be grassy (BirdLife International, 2011) (please see **Figure 4-3**and **Figure 4-4**).

After good rains the flat country becomes grassy with *Aristida adscensionis* (also known as steekgras and six weeks threeawn) and *A. congesta* (also known as Aristida) dominating. During rainy periods, however, many patches of climax grasses, including *Themeda triandra* (Afrikaans common name: rooigras), sprout on the rocky mountain slopes (BirdLife International, 2011).

[20] http://www.deaar.co.za/ [Accessed on 19 October, 2011]

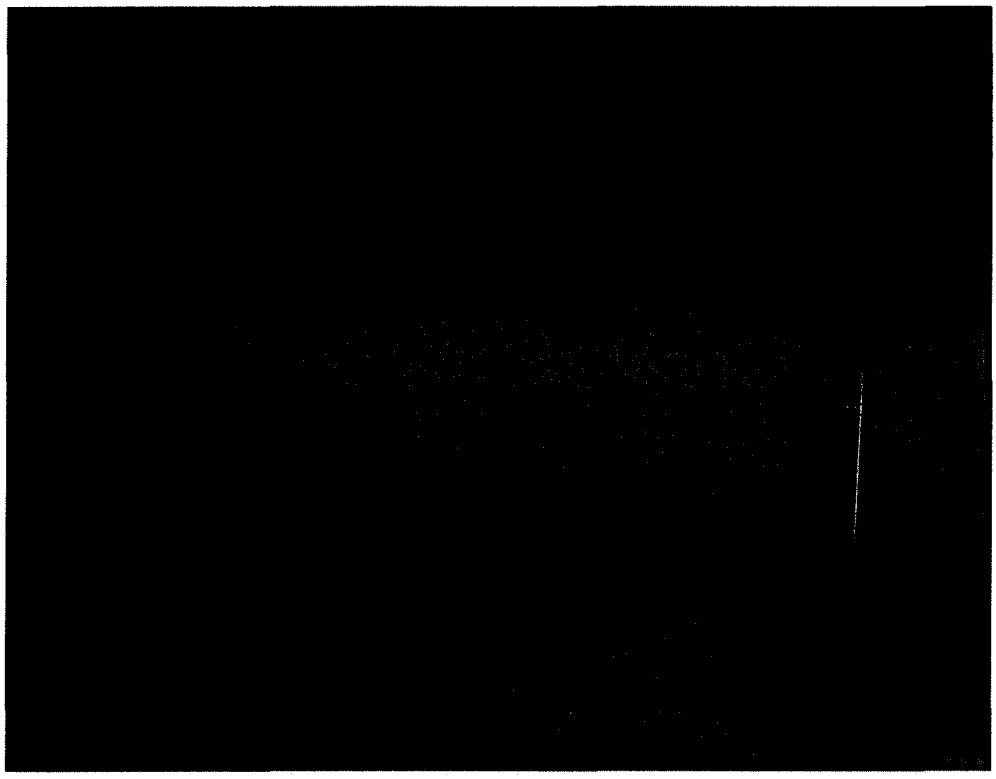


Figure 4-3: Photograph of the open plains and hills taken 06/10/11 from the public road bordering the property (site in foreground)

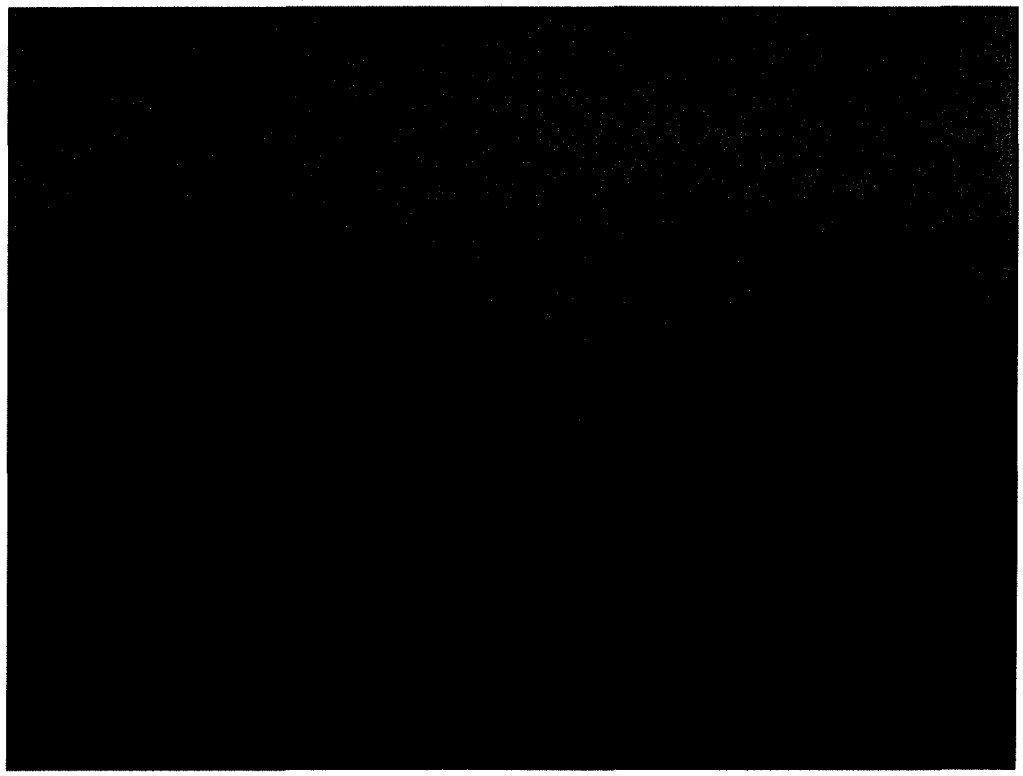


Figure 4-4: Typical vegetation of the site (taken 06/10/11 from the public road bordering the property)

4.2.5 Fauna (including avifauna)

De Aar falls within the Platberg-Karoo Conservancy Important Bird Area[21] which covers the entire districts of De Aar, Philipstown, and Hanover in the south-eastern portion of the Northern Cape Province (BirdLife International, 2011). This area also holds suitable habitats for Sloggett's Rat, Grant's Rock Mouse, Sclater's Golden, Karoo Dwarf Chameleon, Tent Tortoise, Spotted House Snake, Karoo Sandveld Lizard, Burchell's Sand Lizard, Cape Crag Lizard, Cape Thicktoed Gecko, Bibron's Thicktoed Gecko, Spotted Thicktoed Gecko, Golden Spotted Thicktoed Gecko, and Marico Thicktoed Gecko, all of which are expected to occur within the conservancy (DJ Environmental Consultants, 2010). Please see **Table 4-2** for the red listed bird species that might occur within the vicinity of the site.

Various faunal species were observed during a site visit on 6 October 2011 including meerkats and springboks.

Birds that could potentially become active around the facility could include the Speckled Pigeon, Greater Kestrel, Pale Chanting Goshawk, Cape Crow, Pied Crow, Common Starling, Cape Sparrow, and House Sparrow (DJEC, 2010).

Table 4-2: Red-listed bird species which could occur on site (endemic species are highlighted in grey)

Common name	Conservation status	Regional endemic species	Relative importance of local population*
Ludwig's Bustard	Vulnerable	Near- endemic	High
Kori Bustard	Vulnerable	-	Moderate
Blue Korhaan	Near Threatened	Endemic	Moderate
Blue Crane	Vulnerable	Endemic	Low
Black Harrier	Near- threatened	Endemic	Low
Tawny Eagle	Vulnerable	-	High
Martial Eagle	Vulnerable	-	High
Secretarybird	Near- threatened	-	High
Lesser Kestrel	Vulnerable	-	High
Lanner Falcon	Near- threatened	-	Low
Greater Flamingo	Near- threatened	-	Low

*Relative to the national/global population

4.2.6 Surface and groundwater resources

The study area falls within the arid region of South Africa and within the Lower Orange Water Management Area (LOWMA), which is managed by the Department of Water Affairs. The LOWMA has very little useable surface runoff due to the low rainfall in the area. Two perennial rivers are located near De Aar with the Elandsfontein running west of De Aar and the Brak Rivier passing De Aar to the north (Orange-Senqu River Awareness Kit, 2011).

[21] http://www.birdlife.org/datazone/sitefactsheet.php?id=7103

De Aar's requirement for water is entirely met from groundwater resources (Emthanjeni Local Municipality, 2009). Not only is groundwater extremely crucial in this area, but it also constitutes the main source of water for many towns within the Lower Orange River Water Management Area. The recharge is limited by the low rainfall which is why the abstraction thereof must be regulated to ensure sustainability of the resource (Orange-Senqu River Awareness Kit, 2011).

4.2.7 Geology and soils

The Northern Province is dominated by the Karoo Basin and consists mostly of sedimentary rocks and some Dolerite intrusions[22].

4.2.8 Heritage and cultural material

Due to De Aar's central location, government chose the location as a junction for the first railway line from Cape Town to Kimberley in 1881[23]. The junction was of very strategic importance for the English during the Second Boer War. The town was established in 1903 after the war. Based on the history of De Aar, it is possible that heritage and cultural material relating to the Angle Boer War, *trekboere,* or farming heritage could be found on the sites.

4.2.9 Population demographics

De Aar falls within the jurisdiction of the Pixley ka Seme District Municipality and the Emthanjeni Local Municipality. De Aar is a rural area with very low population density. The Emthanjeni local municipality has a total population of 38 612 in 2010 and an average annual population growth rate of -0.7 % (1996-2008) (Urban-Econ, 2010 in DJ Environmental Consultants, 2010). Although the unemployment rate is only 26 %, the not economically active population amounts to 46.9 %. The skills levels in the municipality is generally low (32 % of labour force are unskilled workers) as is annual household income (79.8 % of households earn low-income annual salaries). The four main languages spoken in the Northern Cape is Afrikaans, English, IsiXhosa and Tswana.

According to a Socio-economic Impact Assessment (Urban-Econ, 2010 in DJEC, 2010), the local area has a diverse economy, while the main sectors contributing to the Gross Geographic Product (GGP) in 2008 included the financial and business services sector(21.6%), the general government sector (21.1%) and the trade sector (15.5%). The general government sector employs more than 24% of the share of total labour, while the agricultural sector employs 21.5% of the labour and a total of 19% of the labour is employed in the trade sector.

De Aar has the largest abattoir in the southern hemisphere which supplies all the major centres throughout the country with the famous "Karoo" lamb and mutton. Sheep farms around De Aar are also major suppliers of wool (Emthanjeni Local Municipality, 2009).

[22] http://en.wikipedia.org/wiki/Northern_Cape

De Aar is a declared industrial growth point and is trying to position itself as an attractive location for industry in the Northern Cape[24]. Industrial sites are reasonably priced and De Aar is centrally located with excellent rail and road links. De Aar is the second most important railway junction in the country as its central to Gauteng, Cape Town, Port Elizabeth and Namibia (Macroplan, 2007).

4.2.10 Surrounding land uses

The surrounding land use is dominated by agricultural activities, consisting mostly of sheep and cattle grazing. The project site is currently also used for agriculture (grazing). The informal settlement of Nonzwakazi is located approximately 4.5 km, from the farm boundary.

It should be noted that there are a number of environmental applications for renewable energy generation are being undertaken within the De Aar area. The face of De Aar will potentially change in the future if these projects come to fruition.

4.3 CONSTRUCTION PHASE IMPACTS ON THE BIOPHYSICAL AND SOCIO-ECONOMIC ENVIRONMENTS

The construction phase is likely to result in a number of negative impacts on the biophysical and the social environment. These could potentially include:

- Disturbance of flora and fauna in particular avifauna;
- Sedimentation and erosion;
- Increased traffic;
- Storage of hazardous substances on site;
- Noise pollution; and
- Dust.

The significance of construction phase impacts is likely to be limited by their relatively short duration, since the construction phase will last approximately 18 to 30months. Many of the construction phase impacts could be mitigated through the implementation of an appropriate Environmental Management Plan (EMP). During the EIA Phase, the construction phase impacts on the biophysical and socio-economic environment will be assessed, in terms of the methodology outlined in the Plan of Study for EIA (see **Chapter 5**).The construction phase impacts and the mitigation measures proposed to reduce the significance of the impacts will be incorporated into the EMP which will be compiled as part of the EIA process, and submitted as part of the EIAR, to provide mitigation and ascribe responsibilities for many of the construction phase impacts.

[24] http://www.deaar.co.za/, accessed 29/10/11

4.3.1 Disturbance of flora and fauna in particular avifauna

This impact considers impacts beyond the permanent footprint impacts of the proposed wind energy facility. During the construction phase the vegetation within the footprint of the activity will be cleared in order to construct the PV solar facility. This might result in a loss of habitat and or habitat fragmentation. It should be borne in mind that the site is currently being used for grazing which would over time have had an impact on the biodiversity.

The proposed project could disturb animals through physical barriers, which may cause animals to leave the area. It is expected that any affected fauna or avifauna would generally be mobile and would relocate during the construction phase and are likely to recolonise the area, once the construction phase has been completed and the disturbed areas rehabilitated. The significance of this impact must nonetheless be considered beyond the permanent footprint of the proposed PV solar energy facility.

It is proposed that an avifauna impact assessment and an ecology impact assessment be undertaken.

4.3.2 Sedimentation and erosion

The sediment loads of any drainage channels or pans may increase due to the excavations on the site, the laying of infrastructure across drainage lines and other construction related activities. Due to the arid conditions, dust might contribute to sedimentation loads.

4.3.3 Impact on traffic

Approximately 450 truckloads transporting in total 900 40-foot containers would be required during the construction period. Construction vehicles are likely to make use of the existing roads, including the N10, to transport equipment and material to the construction site.

The impact on traffic is however not expected to be significant as these truckloads would be distributed throughout the construction period (18 to 30 months).

4.3.4 Storage of hazardous substances on site

Various hazardous substances are likely to be used and stored on site during the construction phase. These substances may include amongst other things, hydrocarbons (i.e. fuel), curing compounds, shutter oil, and cement.

Use of hazardous substances at a construction site is controlled by various pieces of legislation. The management and protection of the environment would however be achieved through the implementation of an EMP, which would *inter alia* specify the storage details of hazardous compounds and the emergency procedures to follow in the event of a spillage.

4.3.5 Noise pollution

An increase in noise pollution would be expected from the operation of heavy machinery during the construction period, as well as due to the increased traffic. The severity of this impact is likely to be reduced due to the low numbers of people in close proximity to the site.

4.3.6 Dust impacts

Construction vehicles are likely to make use of the existing gravel farm roads to transport equipment and material to the construction site. Earthworks would also be undertaken including the clearance of vegetation. These activities would most likely exacerbate dust, especially in the dry winter months and hot summer months. The dust impact would be managed through the EMP, which would include procedures for dealing with dust pollution events including watering of roads, etc.

4.4 OPERATIONAL PHASE IMPACTS ON THE BIOPHYSICAL ENVIRONMENT

This section of the report describes the biophysical environment and considers the long-term or operational phase impacts on the biophysical environment that may be associated with the proposed activities, including the following:

- Impact on the flora;
- Impact on fauna (avifauna); and
- Impact on water resources.

4.4.1 Impact on flora

Vegetation adjacent to the facility might be impacted by the PV panels shading over vegetation. The site would be cleared during the construction phase and sections would be left barren. Alien invasive plant species could establish within these areas. It is recommended that a specialist ecology assessment be undertaken, due to the possible extent of potential impact.

4.4.2 Impact on avifauna

A number of red listed bird species may be found in the vicinity of the proposed site (See **Table 4-2**). These birds might endeavour to nest in or on the proposed facility. As mentioned previously bird droppings on the PV panels can reduce the efficiency of the panels which is why nesting within the boundaries of the facility is not preferred. It is recommended that a specialist avifaunal assessment be undertaken, to ascertain the potential impact on birds and the potential impact of birds on the proposed facility.

4.4.3 Impact on surface and groundwater resources

De Aar relies entirely on groundwater abstraction to meet the town's potable water needs. Potable water would be required during the operational phase for the cleaning of solar panels to maintain the efficiency of the panels. The use of water and the selection of appropriate cleaning products need to be managed appropriately to prevent any contamination to groundwater. Water would either be sourced from the municipality or obtained from onsite boreholes.

The site that has been identified for the proposed PV facility is relatively flat. While this may be beneficial from a site layout perspective, it does create an increased risk of flooding. In the past two years, De Aar has experienced severe flooding with devastating effects twice (**Figure 4-5**). It is recommended that a specialist hydrology assessment be undertaken, to ascertain the potential impact on stormwater runoff and the potential impact of flooding on the proposed facility.

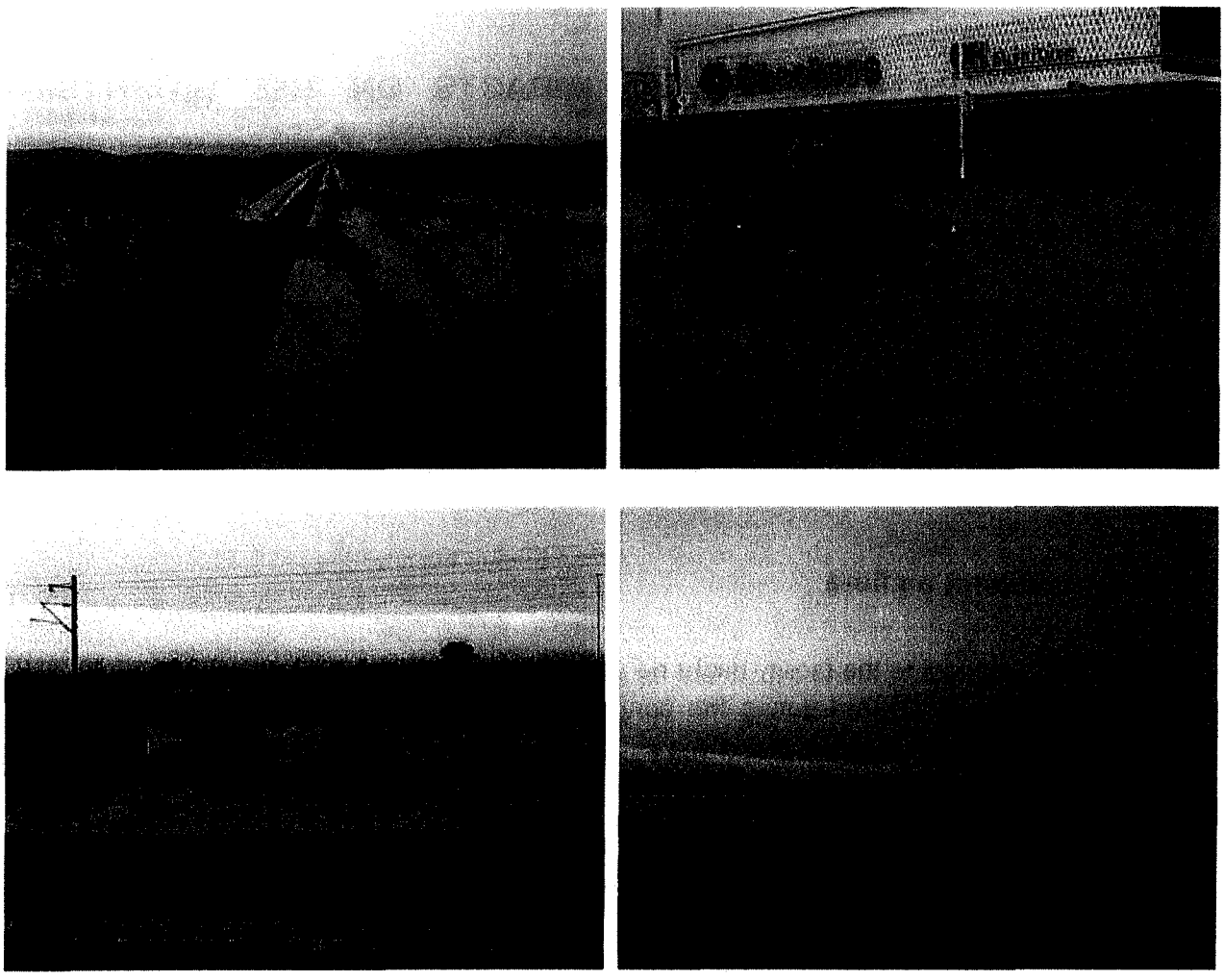


Figure 4-5: Photographs of a flood in De Aar on 25 January 2010[25]

[25] http://www.deaarenvirons.co.za/html/de_aar_flood_25012010.html (accessed 27/10/2011)

4.5 OPERATIONAL PHASE IMPACTS ON THE SOCIO-ECONOMIC ENVIRONMENT

This section of the report describes and considers the long-term or operational phase impacts on the socio-economic environment that may be associated with the proposed activities, including the following:

- Impact on heritage resources (including palaeontology);
- Visual impacts;
- Impact on energy production;
- Impact on local economy (employment) and social conditions; and
- Impact on agricultural land.

4.5.1 Impact on heritage resources (Including paleontological resources)

As mentioned in **Section 1.1**, this proposed PV facility is one of three PV facilities which Mulilo proposes to construction near De Aar. In addition to these proposed PV facilities, there are multiple renewable energy (solar and wind) projects being proposed by various stakeholders in this area. This would result in a shift in land use towards renewable energy generation in the form of wind and solar energy facilities with the establishment of De Aar as a renewable energy hub. The cumulative impacts of the combined PV facilities together with the perceived change in landscape character and sense of place would need to be assessed.

Heritage resources include archaeological material (e.g. rock paintings, stone tools), paleontological material (e.g. fossilised materials) and cultural heritage material (e.g. old graveyards, fences or ruins of buildings). Since some potential heritage material is buried, heritage resources are often only found during the construction phase of a project.

Due to the relatively undisturbed nature of the site, it is likely archaeological or cultural material would be found on site. A large scale development, such as the proposed project, could have a negative impact on the archaeological and cultural heritage resources (including visual, landscape, and sense of place impacts) by damaging or destroying such material or by requiring the material to be removed and stored *in situ*. It is therefore necessary to assess the potential impacts of the proposed development at an early stage in order to best determine the course of action for heritage resources on site. It is therefore recommended that a HIA and a paleontological study be undertaken.

Furthermore, due to the underlying geology of the area, as noted in **Section 4.2.7**Error! Reference source not found., there is a possibility of finding paleontological material. A large scale development such as the proposed project could have a negative impact on the archaeological and cultural heritage resources (including visual, landscape and sense of place impacts) by damaging or destroying such material or by requiring the material to be removed and stored *in situ*. It is therefore necessary to assess the potential impacts of the proposed development at an early stage in order to best determine the course of action for heritage resources on site. It is therefore recommended that an HIA, including input on archaeological, heritage and visual considerations be undertaken. Furthermore, as noted in **Section 2.1.4** "*any*

development ... which will change the character of a site exceeding 5 000 m^2 in extent", "the construction of a road...powerline, pipeline...exceeding 300 m in length" or *"the rezoning of site larger than 10 000 m^2 in extent..."* must be subjected to a heritage study in terms of NHRA, and be approved prior to the commencement of the construction process.It is furthermore recommended that a palaeontology study is also undertaken.

4.5.2 Visual impacts

The flat plains which characterise the project area are covered by low-lying shrubs and grass. Therefore, any tall structures, such as existing power lines, are visible for many kilometres. The potential therefore exists that the proposed solar panels or associated infrastructure would be visible from great distances. As such it is recommended that a specialist Visual Impact Assessment (VIA) be undertaken to ascertain potential impacts on visual aesthetics.

4.5.3 Impact on energy production

Historical trends in electricity demand in South Africa have shown a consistent increase in demand. There have been some years where the demand levels off or decreases, but over the long term there has been an increasing trend on electricity demand. Such a decrease in electricity demand was seen in 2009 during the global recession, however, the electricity demand has since resumed. As a result, the reserve margin remains low and the supply capacity is still limited. This situation that is expected to continue until new base load capacity can be brought online from 2012 onwards. The reserve margin will again be constrained after 2018 should no new base load power stations be constructed. The proposed PV solar energy facility would be able to provide power to assist in meeting the energy demand within South Africa.

Given that there is a large body of literature with regards to energy demand in South Africa, as described in **Chapter 1**, it is proposed that the EAP assess the potential impact of the proposed project on energy production in South Africa.

4.5.4 Impact on local economy (employment) and social conditions

The site is located in a rural area and as such the population density is very low, with neighbouring farms located great distances from each other. The De Aar area has large areas of land which are very dry and the farmers struggle to earn a living from the land. Employment opportunities in the immediate area predominately stem from farming.

It is expected that the proposed project would contribute directly to the upliftment of the individuals and the societies in which they live which is critical in South Africa. During project development by Mulilo, skills development and transfer would be one of the priorities and local community involvement would be enhanced.

The establishment of the proposed PV energy facility would create a number of direct and indirect employment opportunities. Indirect employment opportunities include jobs within the tourism / catering industry which will benefit from the increased number of people seeking accommodation as a result of these proposed projects. Direct jobs would be created during manufacturing, construction and installation, operation and maintenance of the proposed solar PV facilities. Numerous studies and reports have attempted to quantify the employment creation potential of renewable energy per unit of power installed or generated. AGAMA Energy (2003) established that solar PV has the largest creation potential over all the renewable technologies.

Table 4-3: Renewable energy employment potential in terms of the gross direct jobs created per GWh for the various technologies (Agama Energy, 2003)

	Employees per:					
RE Technology	Fuel /GWh	Manufacture /GWh	Installation /GWh	O&M /GWh	Other /GWh	Total /GWh
Solar thermal	0	3	7	0.4	0	10.4
Solar PV	0	32.9	21.2	4.4	3.5	62
Wind	0	8.4	1.3	2.6	0.3	12.6
Bio-energy	0	3.55	3.55	7.2	0	14.3
Hydro	0	8.4	1.3	2.6	0.3	12.6

The establishment of the proposed PV solar energy facility would provide a number of direct and indirect jobs. There would be a wide level of skills required during the construction and operation of the facility. As noted previously, between 200 and 900 individuals would be employed during the construction phase (18 to 30 months). Increased employment opportunities would allow for an improvement in social conditions for those who obtain employment.

Given that there is a large body of information available regarding the potential socio-economic impacts of PV facilities, it is proposed that the EAP assess the potential impact of the proposed project on the local socio-economic environment.

4.5.5 Impact on agricultural land

The site is currently used for agricultural purposes, more specifically as grazing for sheep and cattle. The proposed facility would cover between 225 ha and 250 ha, depending on the alternatives selected. The portion of the farm being leased in relation to the entire farm is relatively small and should not hinder current agricultural practices. It is however still proposed that an Agricultural Impact Assessment be undertaken.

5. PLAN OF STUDY FOR EIA

The purpose of this Chapter is to detail the Plan of Study for the EIA Phase to ensure that this EIA process satisfies the requirements of NEMA.

5.1 PURPOSE OF THIS PLAN OF STUDY FOR EIA

The Scoping process has been documented in this Scoping Report, which has identified various potential environmental impacts and project alternatives that require detailed investigation. This Plan of Study is the culmination of the Scoping Phase and its purpose is to ensure that the EIA Phase of this EIA process satisfies the requirements of NEMA. Accordingly, this Plan of Study for EIA outlines the anticipated process and products for the EIA Phase.

This Plan of Study for EIA has been compiled in terms of GN No R.33306 of 18 June 2010 of NEMA and will be submitted to DEA for their consideration.

Accordingly, this Plan of Study for EIA outlines the anticipated process and products for the EIA reporting phase of the EIA process.

5.2 DESCRIPTION OF THE ACTIVITY

The nature of the activity is described in detail in **Chapter 2**, but in brief includes the following:

- Construction of a PV solar energy facility with an approximate footprint of 225 ha to 250 ha to generate approximately 75-150 MW of electricity;
- Associated infrastructure including:
  - Upgrade of the access roads;
  - Fences to secure the site;
  - Transmission lines in order to feed the electricity generated into Eskom's grid; and
  - Water supply infrastructure (which will be determined by the source of the water supply):
    - Municipal supply; and
    - Groundwater.

5.3 DESCRIPTION OF TASKS TO BE PERFORMED

5.3.1 Potential environmental impacts identified during Scoping

Chapter 4 has identified the range of potential environmental impacts associated with the proposed project. During this scoping exercise a shortlist of potentially significant environmental impacts was identified for further, more detailed investigation during the EIA Phase. Specifically the following potential environmental impacts have been identified:

- ***Construction phase impacts on the biophysical and socio-economic environments:***
    - Disturbance of flora and fauna;
    - Sedimentation and erosion of water ways;
    - Impact on traffic;
    - Storage of hazardous substances on site;
    - Dust impacts;
    - Noise pollution;
    - Impact on local economy (employment) and social conditions;
    - Skills development; and
    - Tourism.

- ***Operational phase impacts on the biophysical environment:***
    - Impact on flora;
    - Impact on fauna (avifauna); and
    - Impact on water resources.

- ***Operational phase impacts on the social environment:***
    - Impact on heritage resources (including palaeontology);
    - Visual impacts;
    - Impact on energy production;
    - Impact on local economy (employment) and social conditions; and
    - Impact on agricultural land.

5.3.2 Method of assessing the significance of potential environmental impacts

This section outlines the proposed method for assessing the significance of the potential environmental impacts outlined above. As indicated, these include both operational and construction phase impacts.

For each impact, the EXTENT (spatial scale), MAGNITUDE and DURATION (time scale) would be described. These criteria would be used to ascertain the SIGNIFICANCE of the impact, firstly in the case of no mitigation and then with the most effective mitigation measure(s) in place. The mitigation described in the EIAR would represent the full range of plausible and pragmatic measures but does not necessarily imply that they would be implemented.[26]

The tables on the following pages show the scale used to assess these variables, and defines each of the rating categories.

[26] The applicant will be requested to indicate at the Draft EIAR stage which alternative and mitigation measures they are prepared to implement.

Table 5-1: Assessment criteria for the evaluation of impacts

CRITERIA	CATEGORY	DESCRIPTION
Extent or spatial influence of impact	**Regional**	Beyond a 10km radius of the candidate site.
	Local	Within a 10km radius of the candidate site.
	Site specific	On site or within 100m of the candidate site.
Magnitude of impact (at the indicated spatial scale)	**High**	Natural and/ or social functions and/ or processes are *severely* altered
	Medium	Natural and/ or social functions and/ or processes are *notably* altered
	Low	Natural and/ or social functions and/ or processes are *slightly* altered
	Very Low	Natural and/ or social functions and/ or processes are *negligibly* altered
	Zero	Natural and/ or social functions and/ or processes remain *unaltered*

CRITERIA	CATEGORY	DESCRIPTION
Duration of impact	**Construction period**	Up to 30 months
	Short Term	Up to 5 years after construction
	Medium Term	5-15 years after construction
	Long Term	More than 15 years after construction

The SIGNIFICANCE of an impact is derived by taking into account the temporal and spatial scales and magnitude. The means of arriving at the different significance ratings is explained in **Table 5-2**.

Table 5-2: Definition of significance ratings

SIGNIFICANCE RATINGS	LEVEL OF CRITERIA REQUIRED
High	• High magnitude with a regional extent and long term duration • High magnitude with either a regional extent and medium term duration or a local extent and long term duration • Medium magnitude with a regional extent and long term duration
Medium	• High magnitude with a local extent and medium term duration • High magnitude with a regional extent and construction period or a site specific extent and long term duration • High magnitude with either a local extent and construction period duration or a site specific extent and medium term duration • Medium magnitude with any combination of extent and duration except site specific and construction period or regional and long term • Low magnitude with a regional extent and long term duration
Low	• High magnitude with a site specific extent and construction period duration • Medium magnitude with a site specific extent and construction period duration • Low magnitude with any combination of extent and duration except site specific and construction period or regional and long term • Very low magnitude with a regional extent and long term duration
Very low	• Low magnitude with a site specific extent and construction period duration • Very low magnitude with any combination of extent and duration except regional and long term
Neutral	• Zero magnitude with any combination of extent and duration

Once the significance of an impact has been determined, the PROBABILITY of this impact occurring as well as the CONFIDENCE in the assessment of the impact would be determined using the rating systems outlined in **Table 5-3** and **Table 5-4**and respectively. It is important to note that the significance of an impact should always be considered in concert with the probability of that impact occurring. Lastly, the REVERSIBILITY of the impact is estimated using the rating system outlined in **Table 5-5**.

Table 5-3: Definition of probability ratings

PROBABILITY RATINGS	CRITERIA
Definite	Estimated greater than 95 % chance of the impact occurring.
Probable	Estimated 5 to 95 % chance of the impact occurring.
Unlikely	Estimated less than 5 % chance of the impact occurring.

Table 5-4: Definition of confidence ratings

CONFIDENCE RATINGS	CRITERIA
Certain	Wealth of information on and sound understanding of the environmental factors potentially influencing the impact.
Sure	Reasonable amount of useful information on and relatively sound understanding of the environmental factors potentially influencing the impact.
Unsure	Limited useful information on and understanding of the environmental factors potentially influencing this impact.

Table 5-5: Definition of reversibility ratings

REVERSIBILITY RATINGS	CRITERIA
Irreversible	The activity will lead to an impact that is in all practical terms permanent.
Reversible	The impact is reversible within 2 years after the cause or stress is removed.

5.4 NEED FOR ADDITIONAL INFORMATION: SPECIALIST STUDIES

In reviewing the potential environmental impacts, all impacts initially identified during the Scoping Phase have been identified as key issues requiring further investigation. Accordingly, we propose to undertake the following specialist studies, in order to address a suite of potential environmental impacts.

Table 5-6: Specialist studies to be undertaken

Assessment	Company	Contact
Visual Impact Assessment	Private consulting	Karen Hansen
Palaeontological Impact Assessments	Natura Viva	Dr John E. Almond
Ecological Impact Assessment	David Hoare Consulting cc	David Hoare
Avian Impact Assessment	Private consultant	Doug Harebottle
Agricultural Assessment	SiVEST	Kurt Barichievy
Heritage Impact Assessment	ACO Associates	Tim Hart
Aquatic Ecology	Private consultant	Toni Belcher
Hydrology	Aurecon South Africa	Nicholas Walker

The ToR for these investigations as well as the identified specialists is outlined below. A short summary of the various specialist consultants is given below the ToR. CVs for the various specialist consultants are available upon request.

5.4.1 Proposed ToR for Ecology Impact Assessment

The proposed ToR for the ecology specialist study is as follows:

Undertake the requisite field work and compile a report which includes the following aspects:

- A broad description of the ecological characteristics of the site and surrounds;
- Identification and description of biodiversity patterns at community and ecosystem level (main vegetation type, plant communities in vicinity and threatened/ vulnerable ecosystems species), at species level (Red Data Book species, presence of exotic species) and in terms of significant landscape features;
- An assessment of the potential direct and indirect and cumulative impacts resulting from the proposed development (including the photovoltaic solar panels and associated

infrastructure), both on the footprint and the immediate surrounding area during the construction, operation and decommission phases;
- Comment on whether or not ecological processes would be affected by the proposed project, and if so, how these would be affected;
- A detailed description of appropriate mitigation measures that can be adopted to reduce negative impacts and improve positive impacts for each phase of the project, where required; and
- Cognisance must be taken of the Department of Environmental Affairs and Development Planning guideline: "Guideline for involving biodiversity specialists in EIA processes" (Brownlie, 2005) as well as the requirements of the Botanical Society of South Africa (BotSoc) and CapeNature in developing an approach to the botanical investigation.

Dr David Hoare of David Hoare Consulting cc will undertake the requisite Ecological assessment. David Hoare Consulting cc has undertaken over 300 ecological specialist consulting projects over the past 5 years and has 14 years of experience as a specialist environmental consultancy. Dr David Hoare is a registered professional member of the South African Council for Natural Scientific Professions (reg. no. 400221/05) and is subject to a Code of Conduct administered by the Council to ensure professional conduct.

5.4.2 Proposed ToR for the Avian Impact Assessment

The proposed ToR for this specialist study is as follows:

- Undertake the requisite field work to directly assess the habitats present within the inclusive impact zone, and to determine the *in situ* avifauna and identify any significant bird flight corridors present in the area;
- Integrate the-site information with bird atlas (SABAP 1 & 2) and any other relevant bird data available for the general area to develop an inclusive, annotated list of the avifauna expected to occur on the site;
- Highlight Red Data species, endemic, restricted-range or other species of particular concern which may be present in the study area;
- Identify, describe and assess potential direct and indirect and cumulative impacts resulting from the proposed development both on the footprint and the immediate surrounding area during construction and operation; and
- Recommend mitigation measures to reduce or eliminate potential negative impacts on avifauna and improve positive impacts.

Doug Harebottle will undertake the requisite assessment. He is an avifaunal specialist. He is an avifaunal specialist with a Masters in conservation biology. Mr Harebottle has been involved in co-ordinating and managing various national bird programmes and is currently responsible for co-ordinating the Waterbirds Ringing Programme in Africa.

5.4.3 Proposed ToR for the Aquatic Impact Assessment

The proposed ToR for the aquatic specialist studies are as follows:

- Summary of available information pertaining to surface water (streams, dams and wetlands) in close vicinity to the sites;
- Undertake water quality and biotic assessments/ sampling for stream, wetland and dam condition assessments;
- Describe and determine importance, functionality and trophic state of the water resources;
- Assess the potential impact of the change in site hydrology (quantity) and water chemistry (quality) on any streams, dams and wetlands during the construction and operational phases;
- Evaluate (a) magnitude, frequency of occurrence, duration and probability of impacts, (b) the local, regional, and national significance of predicted impacts, (c) the level of confidence in findings relating to potential impacts, (d) the degree to which the impact can be reversed, and (e) cumulative impacts that may occur as a result of the activities which include mining and associated overburden dumping;
- Recommend mitigation measures aimed at minimising the potential negative impacts and enhancing potential positive impacts while retaining reasonable operational efficiencies;
- List additional or required permitting and/or licensing requirements; and
- Take cognisance of the Wetland Delineation Guideline Document of the Department of Water, and if applicable the DEA&DP draft guideline: "Guideline for involving biodiversity specialists in EIA processes"[27].

An aquatic impact assessment will be undertaken by Toni Belcher to determine the risk of flooding of the site. Toni Belcher is an Aquatic scientist (*Pr.Sc.Nat.* 400040/10) and holds a M.Sc. in Environmental Management. She has extensive knowledge and experience in water education; aquatic ecosystem monitoring and assessments; Environmental Impact Assessments; river classification and environmental water requirements; Integrated Water Resource Management; river, wetlands and estuary management; water resource legislation; and water resource institutions.

5.4.4 Proposed ToR for the Hydrology Impact Assessment

The proposed ToR for the Hydrology specialist studies are as follows:

- Determine the floodline through a detailed hydrological (design flood) analysis, and a detailed hydraulic (floodline) analysis to determine the extent and impact of the design floods.
- Use a combination of deterministic and empirical techniques to determine design flood peaks for the 1:100 year recurrence interval.

[27]Brownlie, S. 2005. Guideline for involving biodiversity specialists in EIA processes: Edition 1. CSIR Report No ENV-S-C 053 F. Republic of South Africa, Provincial Government of the Western Cape, Department of Environmental Affairs and Development Planning.

- Us the HEC-RAS flood routing model (U.S. Army Corps of Engineers) to route the flood peaks through the specified reaches for the determination of flood levels and floodline positions for the 1:100 year recurrence interval floods.
- Exporting the flood analysis results (using HEC-GeoRAS) to GIS where floodlines will be edited and plotted. Prepare drawings in GIS showing the 1:100 year floodlines, baseline information, cross-section positions as well as relevant hydraulic data.

Dr Nicholas Walker will undertake the hydrology study. Dr Walker holds a PhD in Hydrology and is a registered Professional Natural Scientist with the South African Council for Natural Scientific Professionals. He has 11 years' research and consulting experience. He is currently working as a Hydrologist for Aurecon and is involved in water resource projects including flood hydrology, hydraulic modelling and bulk water supply planning.

5.4.5 Proposed ToR for the Heritage Impact Assessment

Undertake a Heritage and Archaeological Impact assessment of the site in accordance with the requirements of Section 38(3) of the NHRA which would include:

- Conducting a detailed desk-top level investigation to identify all archaeological, cultural and historic sites in the proposed development areas;
- Undertaking field work to verify results of desktop investigation;
- Document (GPS coordinates and map) all sites, objects and structures identified on the candidate sites;
- Submit the relevant application form, as required by South African Heritage Resources Agency and Northern Cape Provincial Heritage (Boswa ya Kapa Bokone);
- Compile a report which would include: Identification of archaeological, cultural and historic sites within the proposed development areas;
- Assess the sensitivity and significance of archaeological remains in the site;
- Evaluation of the potential impacts of construction, operation and maintenance of the proposed development on archaeological, cultural and historical resources, in terms of the scale of impact (local, regional, national), magnitude of impact (low, medium or high) and the duration of the impact (construction, up to 10 years after construction (medium term), more than 10 years after construction (long term));
- Recommendation of mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural or historical importance;
- The preparation of a heritage resources management plan which includes recommendations on the management of the objects, sites or features, and also guidelines on procedures to be implemented if previously unidentified cultural resources are uncovered during later developments in the area. Please note this will only be required if heritage resources are discovered;
- Consideration of relevant guidelines; and
- Cognisance must be taken of the Department of Environmental Affairs and Development Planning guideline: "Guideline for involving heritage specialists in EIA processes[28].

[28]Winter, S. & Baumann, N. 2005. Guideline for involving heritage specialists in EIA processes: Edition 1. CSIR Report No ENV-S-C 053 E. Republic of South Africa, Provincial Government of the Western Cape, DEA&DP.

The HIA will be undertaken by ACO Associates which was established in late 2008 as an allied operation to the Archaeology Contracts Office at the University of Cape Town. With 22 years of accumulated experience, and having completed over 800 projects, members of ACO Associates cc are equipped to handle assignments ranging from detailed, sensitive excavations, to large-scale field surveys and assessments of historic places.

Undertake a Palaeontology Impact Assessment of the site in accordance with the requirements of Section 38(3) of the NHRA which would include:

- Conducting a detailed desk-top level investigation to identify all palaeontological significant geological units in the proposed development areas;
- Undertaking field work, if necessary, to verify results of desktop investigation;
- Document (GPS coordinates and map) all sites, objects and structures identified on the candidate sites;
- Submit the relevant application form, as required by South African Heritage Resources Agency and Northern Cape Provincial Heritage (Boswa ya Kapa Bokone);
- Compile a report which would include:
- Identification of palaeontologically significant sites within the proposed development areas;
- Assess the sensitivity and significance of palaeontological resource of the site;
- Evaluation of the potential impacts of construction, operation and maintenance of the proposed development on palaeontological resources, in terms of the scale of impact (local, regional, national), magnitude of impact (low, medium or high) and the duration of the impact (construction, up to 10 years after construction (medium term), more than 10 years after construction (long term));
- Recommendation of mitigation measures to ameliorate any negative impacts on areas of palaeontological importance;
- The preparation of a heritage resources management plan which includes recommendations on the management of the objects, sites or features, and also guidelines on procedures to be implemented if previously unidentified palaeontological resources are uncovered during later developments in the area;
- Consideration of relevant guidelines; and
- Cognisance must be taken of the Department of Environmental Affairs and Development Planning guideline: "Guideline for involving heritage specialists in EIA processes"[29].

Dr John Almond of Natura Viva cc will be appointed to undertake a palaeontology desktop study. Dr Almond has a doctorate in Earth Sciences (Palaeontology) and over 25 years' experience in the palaeontology

[29] Winter, S. & Baumann, N. 2005. Guideline for involving heritage specialists in EIA processes: Edition 1. CSIR Report No ENV-S-C 053 E. Republic of South Africa, Provincial Government of the Western Cape, DEA&DP.

5.4.6 Proposed ToR for the Visual Impact Assessment

The proposed ToR for this Visual Impact Assessment (VIA) is as follows:

- Source and review baseline information.
- Undertake a level 3 impact assessment to include the following areas of study for the preferred layout, Alternatives, and the 'No-go' Alternative in a Visual Impact Assessment report:
    - Identify issues raised relating to visual, aesthetic and scenic resources through any existing reports, baseline studies and framework plans, any public scoping phase, and site visits. The study must take into account the expected community response as well as the applicable South African standards.
    - Describe of the receiving environment and the proposed project in terms of landscape types, landscape character and land use patterns.
    - Describe the sense of place and contributing factors, (spatial and non-spatial).
    - Establish the view catchment area, view corridors, viewpoints and receptors
    - Determine the relative visibility or visual intrusion of the proposed project
    - Determine the relative compatibility or conflict of the project with the surrounding land uses in terms of visibility.
    - Determine significant/sensitive receptors.
    - Indicate potential visual impacts using established criteria and including:
        - Potential lighting impacts at night
        - Consideration of impacts at the construction phase
        - Consideration of the implications of the phased development
    - Describe alternatives, mitigation measures and monitoring programs
    - Describe the opportunities and constraints of the alternatives
    - Use mapping and photo-montage techniques as appropriate.
    - In terms of evaluation criteria, use the criteria specific for Visual Impact Assessments listed in the Department of Environmental Affairs and Development Planning guideline document "Guideline for involving visual and aesthetic specialists in EIA processes".

The VIA will be undertaken by Mrs Karen Hansen of Viridian Consulting. Mrs Hansen has over 19 years' experience undertaking VIA's for various developments, including a VIA done for a PV site in De Aar. Mrs Hansen has recently completed Level 3 Visual Impact Assessments for Proposed PV Facilities, in various locations in both the Western and the Northern Cape and is therefore familiar with the issues relating to this infrastructure.

5.4.7 Proposed ToR for the Agricultural Impact Assessment

The ToR for the proposed Agricultural Impact Assessment study is as follows:

- Compile a detailed desktop assessment for the proposed development areas. Broadly assess the soil and agricultural potential of the sites and receiving environment by interrogating relevant spatial and numeric datasets. The soil assessment must include the following as per DEAs requirements:

- Identification of the soil forms present on site;
- The size of the area where a particular soil form is found;
- GPS reading of soil survey points;
- The depth of the soil at each survey point;
- Soil colour;
- Limiting factors;
- Clay content; and
- Slope of the site.

Provided a shape file containing the soil forms and relevant attribute data as depicted on the map

- Undertake field verification which includes a soil survey. During this survey each soil sample point will be described to form and family level according to "Soil Classification - A Taxonomic System for South Africa" as well as noting relevant soil characteristics such as clay content, depth and limiting layers. In terms of area under assessment, the following information has been provided to us.
- Combine the information gained during the soil survey with verified climate, water resource, topographic, local agricultural practices and crop data in order to provide a spatial classification of the sites based on its soil characteristics and associated agricultural potential.
- Compile a detailed soil and land use impact assessment based on the predicted impacts resulting from the proposed activities. The detailed soil assessment of the site in question must incorporated a radius of 50m surrounding the site, on a scale of 1:10 000 of finer.
- Investigate direct and indirect impacts, ecosystem functionality impacts as well as the effect of cumulative impacts on the receiving environment. Detailed mitigation measures will, where necessary, be described in order to reduce / ameliorate the soil and land use impacts identified during the impact assessment. Aurecon's impact method statement will be used to assess the significance of the potential impacts.
- Compile an agricultural potential report to meet the Department of Agriculture's requirements and to encompass the findings of the desktop assessment, soil survey, agricultural evaluation and impact assessment.

The Agricultural Impact Assessment will be undertaken by Mr Kurt Barichievy of Sivest. Mr Barichievy is a registered Professional Natural Scientist (Registration No. 400129/11) and holds a MSc. Degree in Hydrology.

5.5 REASONABLE PROJECT ALTERNATIVES IDENTIFIED DURING SCOPING

Chapter 2 reviewed a range of project alternatives associated with the proposed activities. Pursuant to this Scoping exercise, which was based on input from the authorities, I&APs and various specialists, a shortlist of reasonable project alternatives has been identified for further, more detail investigation during the EIA Phase, namely:

- Location alternatives:
  - One location alternative on Paardevalley Dam Farm.
- Activity alternatives:
  - Solar energy generation via PVs; and

- "No-go" alternative to PV solar energy production.

- Site layout alternatives:
  - Two layout alternatives.
- Technology alternatives:
  - Mounting of PV Panels:
    - Fixed axis photovoltaic;
    - Single axis tracking PV; and
    - Concentrated dual axis tracking.
  - Foundation alternative:
    - Isolated concrete bases;
    - Continuous concrete bases;
    - Concrete pile; and
    - Thrusted supporting structure.

Other potential alternatives were considered and screened out in **Chapter 2**. These are documented in **Section 3**Error! Reference source not found..

5.6 THE ENVIRONMENTAL IMPACT ASSESSMENT REPORT

The purpose of the EIAR would be to undertake a comparative assessment of the relative significance of the potential environmental impacts for the proposed PV energy facility location and activity alternatives. The EIAR would thus include the following:

- A brief overview of the potential environmental impacts and reasonable alternatives identified during the Scoping investigation.
- A summary of the key findings of the various specialist studies as they pertain to the affected environment.
- An overview of the public participation process conducted during the compilation of the EIAR.
- A detailed assessment of the significance of the potential environmental impacts for the various project alternatives. This assessment, which would use the methodology outlined in **Section 5.3.2**, would be informed by the findings of the specialist studies, and professional judgement.
- An overview of the full range of mitigation measures including an indication of how these would influence the significance of any potential environmental impacts, together with a lifecycle EMP. The mitigation measures would be informed by the specialist studies, professional experience and comment received from the I&APs.
- A set of recommendations regarding the way forward would be provided, should any of the proposed alternatives be authorised in terms of NEMA.

5.7 PUBLIC PARTICIPATION PROCESS DURING THE EIA PHASE

The purpose of the Public Participation Process (PPP) is to provide I&APs with adequate opportunity to provide input into the EIA process. Consultation with I&APs therefore forms an

integral component of an EIA process and enables *inter alia* directly affected and neighbouring landowners, authorities, civic groups, stakeholders, and the general community to raise and/or identify issues and concerns relating to the proposed activity, which they feel should be addressed in the EIA process. The approach to this PPP has taken cognisance of the DEA&DP Guideline on Public Participation (2005) and DEA's Integrated Environmental Management Guideline Series 7[30]: June 2010 which complies with sections 54 to 58 of R. 543 of the NEMA EIA Regulations.

The PPP that would be undertaken during the EIA phase will include the following:

Following the completion of the Draft EIR (refer to **Section 5.6**above), it will be lodged at the De Aar Public Library, at the Emthanjeni Local Municipal offices and on Aurecon's website (www.aurecongroup.com[31]). I&APs will be notified of the lodging of the reports by means of letters, and given 21 days in which to comment on the report.

Executive summary, letters and adverts would be in English and Afrikaans.

The public comments would be consolidated into an annexure of the EIAR. This would take the form of a CRR, which would summarise the issues raised and provide the project team's responses thereto. The draft report would also be revised in light of feedback from the public, where necessary.

I&APs will be notified of the availability of the Final EIAR in writing. Any comments received will not be included in a CRR, but will instead be collated and forwarded directly to DEA.

All registered I&APs would be notified in writing of the release of the Environmental Authorisation. I&APs would be reminded of their right to appeal against DEA's decision to the Minister of Environmental Affairs in terms of NEMA.

5.7.1 Stages at which Authorities are consulted

In terms of Sections 24 O (2) and (3) of the NEMA (as amended), the following state departments will be sent hard and/ or electronic copies of all reports. Hard copies were made of the relevant section/s for each respective State Department. As with I&APs, State departments will be given 40 days to comment on draft reports and 21 days to comment on final reports. The competent authority (DEANC) will be notified of the State departments who were sent copies of the reporting.

[30]Public Participation in the EIA Process
[31]Follow the public participation links.

5.8 PROPOSED PROGRAMME

A summary of the proposed programme is given in the table below.

Table 5-7: Proposed EIA programme

Activity	Proposed date	Deliverable
1st round of public engagement:		
Letter to I&APs	07/11/2011	Informed I&APs
Lodge draft SR in public venues and with Authorities	07/11/2011	DSR in libraries, websites etc.
Focus group meeting	30/11/2011	Public engagement
Public comment period ends	05/01/2012	Updated CRR
Submit final SR (incl. Plan of Study for EIA) to environmental authority	09/01/2012	Approved SR & Plan of Study EIA
Specialist studies	11/2012 – 02/2012	Specialist reports
2nd round of public engagement:		
Letter to I&APs & adverts	02/2012	Informed I&APs
Lodge draft EIAR in public venues	02/2012	Draft EIAR in libraries, website etc.
Focus group meeting, if necessary	03/2012	Public engagement
Public comment period ends	04/2012	Updated CRR
Submit final EIAR to environmental authority	04/2012	Environmental Authorisation

5.9 PERSONNEL

As for the Scoping phase, Aurecon's Mr Brett Lawson would provide strategic guidance to the EIA process and Louise Corbett would undertake the management of the EIA process and, together with Karen Versfeld and Karen van der Westhuizen, the requisite reporting. Mr Lawson is a certified Environmental Assessment Practitioners of South Africa (EAPSA), and both Mr Lawson and Miss Corbett are registered as Professional Natural Scientists with the South African Council for Natural Scientific Professions (SACNSP). Miss Karen Versfeld is registered as a Candidate Natural Scientist, and Miss Karen van der Westhuizen is registered and a Certified Natural Scientist.A short summary of these consultants is given below. CVs are available upon request.

As a SeniorProject Manager, Miss Corbett has been involved in the management and undertaking of EIAs, the development and implementation of EMPs, and the development and implementation of Environmental Management Systems.Ms Corbett has over five years experience in the environmental field and has been involved with a variety of industries such as the petrochemical, energy, housing, service supply and transport industries amongst others.

Miss Versfeld has been working in the water and environmental sectors for over six years and has gained wide-ranging experience in water resource management and environmental management. In the water sector, she has specific experience in Water Use Authorisation in terms of the National Water Act (Act 36 of 1998) for large scale projects requiring an Integrated Water Use Licence and small scale projects which fall within the ambit of the General Authorisations. In the environmental sector, she has experience in EIAs and the compilation and auditing of EMPs.

Miss Karen van der Westhuizen has been working in the environmental sector for two years and has assisted with a number of Basic Assessment Reports, EIAs and EMPs. Her previous work experience includes solid waste management and renewable energy.

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6. CONCLUSIONS AND WAY FORWARD

The purpose of this Chapter is to briefly summarise and conclude the Scoping Report and describe the way forward.

6.1 CONCLUSIONS

As per the requirements of NEMA, this Scoping investigation has reviewed a range of project alternatives and contemplated the array of potential environmental impacts associated with the following proposed activity in De Aar:

- Construction of a PV solar energy facility with a footprint ranging from 225 ha to 450 ha to generate 75-150 MW of energy;
- Associated infrastructure including:
  - Upgrade of the access roads;
  - Fences to secure the site;
  - Transmission lines in order to feed the electricity generated into Eskom's grid; and
- Water supply infrastructure (which will be determined by the source of the water supply):
  - Municipal supply; and
  - Groundwater.

The following feasible alternatives have been identified for further consideration in the EIAR:

- Location alternatives:
  - One location alternative on Paarde Valley farm.
- Activity alternatives:
  - Solar energy generation via PVs; and
  - "No-go" alternative to PV solar energy production.
- Site layout alternatives:
  - Two layout alternatives.
- Technology alternatives:
  - Mounting of PV Panels:
    - Fixed axis photovoltaic;
    - Single axis tracking PV; and
    - Concentrated dual axis tracking.
  - Foundation alternative:
    - Isolated concrete bases;
    - Continuous concrete bases;
    - Concrete pile; and
    - Thrusted supporting structure.

Specifically the following potential environmental impacts have been identified for further consideration in the EIAR:

- ***Construction phase impacts on the biophysical and socio-economic environment:***
  - Disturbance of flora and fauna in particular avifauna;
  - Sedimentation and erosion;
  - Impact on traffic;
  - Storage of hazardous substances on site;
  - Noise pollution; and
  - Dust impact.

- ***Operational on biophysical***
  - Impact on the flora;
  - Impact on fauna (avifauna); and
  - Impact on water resources.

- ***Operational phase impacts on the social; environment:***
  - Impact on heritage resources (including palaeontology);
  - Visual impacts;
  - Impact on energy production;
  - Impact on local economy (employment) and social conditions;
  - Impact on agricultural land; and
  - Impact on surrounding land use.

The following specialist studies and specialists will be commissioned to provide more detailed information on those environmental impacts which have been identified as potentially being of most concern, and/or where insufficient information is available, namely:

Table 6-1: List of specialist appointed to undertake the specialist's studies

Specialist study	Specialist appointed
Visual Impact Assessment	Karen Hansen
Palaeontological Impact Assessments	Dr John Almond- Natura Viva
Ecological Impact Assessment	David Hoare - David Hoare Consulting cc
Avian Impact Assessment	Doug Harebottle
Agricultural Assessment	Kurt Barichievy - SiVEST
Heritage Impact Assessment	Tim Hart–ACO Associates
Aquatic Ecology	Toni Belcher
Hydrology	Nicholas Walker- Aurecon South Africa

The rationale for these specialist investigations and the ToR has been outlined in **Chapter 5** of this report.

The approach to the EIA Phase should be conducted in terms of the guidelines outlined in the Plan of Study for EIA in **Chapter 5**.

6.2 THE WAY FORWARD

This stage of the public participation process involved the lodging of this the Draft Scoping Report (DSR) in the De Aar Public Library, Emthanjeni Municipal buildings and on the Aurecon website on 08 November 2011.Potential I&AP's were notified of the availability of the report via:

- Adverts placed in *Die Volksblad* and *The Echo*;
- Site notice; and
- Letters, emails and or fax.

A focus group meeting will be held on **30 November 2011** with landowners, neighbouring landowners and relevant authorities to present and discuss the findings of the DSR at the following venue:

Date	Venue	Time
30 November 2011	Emthanjeni municipal civic centre	16h00-18h00

Should you wish to attend, please RSVP for further details.

I&APs have 40 days, until **5 January 2012**, to submit their written comments on the DSR. Cognisance will be taken of all comments in compiling the final report, and the comments, together with the project team and proponent's responses thereto, will be included in the final report. Where appropriate, the report will be updated.

Once the FSR has been completed and all I&AP comments have been incorporated into the report, as necessary, and the client has approved the report, it will be submitted to DEA and the Northern Cape DEANC for their review and comment, respectively. DEA will either reject the application or instruct the applicant to proceed to the EIA Phase, either as proposed in the Plan of Study for EIAR, or direct that amendments are made before continuing.

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South African National Botanical Institute BGIS: BGIS.co.za

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REPORT TRANSMITTAL NOTE

CLIENT : Mulilo Renewable Energy (Pty) Ltd

PROJECT NUMBER : 107514

REPORT TITLE : Draft Scoping Report: Proposed Photovoltaic (Solar) Energy Facility on Paarde Valley farm near De Aar, Northern Cape.

REPORT NUMBER : 5759

COMMENTS : .....

.....

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	1	Nyiko Ngoveni (enquiries)	DEA: Environmental Impact Evaluation	Draft	2	
	1	Thato Molese	Northern Cape Department of Environmental Affairs and Nature Conservation	Draft	3	
	1	Ntombi Yende	Department of Agriculture	Draft	4	
	1	Dr Mariagrazia Galimberti	South African Heritage Resources Agency	Draft	5	
	1		Northern Cape Heritage Authorities	Draft	6	
	1	Mrs Anneliza Collet	National Department of Agriculture, Forestry and Fisheries: Directorate: Land Use and Soil Management	Draft	7	
	1	Kevin Leask	Eskom	Draft	8	
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REPORT TRANSMITTAL NOTE

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	1 CD	Ernest Kubayi	Department of Water Affairs (DWA): Deputy Director Lower Orange WMA	Draft	3	
	1 CD	Thato Molese	Northern Cape Department of Environmental Affairs and Nature Conservation	Draft	4	
	2 CD	Kevin Leask	Eskom	Draft	5	
	1 CD	Ntombi Yende	Department of Agriculture	Draft	6	
	1 CD	Ms L Jordan	Pixley ka Seme District Municipality	Draft	7	
	1 CD	Mev. C. Kloppers	Emthanjeni Local Municipality	Draft	8	
	1 CD	Records Manager	Corporate Support Services, Tshwane	Draft	9	
	1 CD		Information Centre: Aurecon	Draft	10	

Distributed by: **Karen vd Westhuizen .....** **.....**
(Full name) **(Signature)**

Unit/Office : Cape Town Environmental and Advisory **Date:.....**

Received by : **.....** **.....**
(Full name) **(Signature)**

Organisation : **.....** **Date:.....**

Note: Complete the details of all recipients and then make a copy of the Report Transmittal Note for each recipient and insert a tick next to the name of the respective recipient on the individual copies.

Annexure A

- Application form
- DEA Acknowledgement Letter

environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

APPLICATION FORM FOR ENVIRONMENTAL AUTHORISATION

	(For official use only)
File Reference Number:	12/12/20/
NEAS Reference Number:	DEAT/EIA/
Date Received:	

Application for authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2010

PROJECT TITLE

Proposed Photovoltaic (Solar) Energy Plant on Paarde Valley Farm near De Aar, Northern Cape

Kindly note that:

1. This application form is current as of 2 August 2010. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority.
2. The application must be typed within the spaces provided in the form. The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided. Spaces are provided in tabular format and will extend automatically when each space is filled with typing.
3. Where applicable black out the boxes that are not applicable in the form.
4. Incomplete applications may be returned to the applicant for revision.
5. The use of the phrase "not applicable" in the form must be done with circumspection. Should it be done in respect of material information required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the Regulations.
6. This application must be handed in at the offices of the relevant competent authority as determined by the Act and regulations.
7. No faxed or e-mailed applications will be accepted.
8. Unless protected by law, all information filled in on this application will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this application on request, during any stage of the application process.
9. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.

Queries must be addressed to the contact hereunder:

Departmental Details

Postal address:
Department of Environmental Affairs
Attention: Director: Environmental Impact Evaluation
Private Bag X447
Pretoria
0001

Physical address:
Department of Environmental Affairs
Fedsure Forum Building (corner of Pretorius and Van der Walt Streets)
2nd Floor North Tower
315 Pretorius Street
Pretoria
0002

Queries should be directed to the Directorate: Environmental Impact Evaluation at:

Tel: 012-310-3268
Fax: 012-320-7539

Please note that this form must be copied to the relevant provincial environmental department/s.

View the Department's website at http://www.deat.gov.za/ for the latest version of the documents.

SITE IDENTIFICATION AND LINKAGE

Please indicate all the Surveyor-general 21 digit site (erf/farm/portion) reference numbers for all sites (including portions of sites) that are part of the application.

Solar plant site:																				
C	0	5	7	0	0	0	0	0	0	0	0	0	1	4	5	0	0	0	0	2
Offsite transmission line:																				
C	0	5	7	0	0	0	0	0	0	0	0	0	1	4	5	0	0	0	2	9
C	0	5	7	0	0	0	0	0	0	0	0	0	1	7	9	0	0	0	0	0
C	0	5	7	0	0	0	0	0	0	0	0	0	1	8	0	0	0	0	0	0
C	0	5	7	0	0	0	0	0	0	0	0	0	1	8	0	0	0	0	0	3
C	0	5	7	0	0	0	0	0	0	0	0	0	1	8	0	0	0	0	0	9
C	0	5	7	0	0	0	0	0	0	0	0	0	1	8	0	0	0	0	0	1
C	0	1	2	0	0	0	0	0	0	0	0	0	1	3	5	0	0	0	0	0
C	0	1	2	0	0	0	0	0	0	0	0	0	1	3	5	0	0	0	0	3
C	0	3	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0
C	0	3	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	3

(if there are more that 6, please attach a list with the rest of the numbers)
(These numbers will be used to link various different applications, authorisations, permits etc. that may be connected to a specific site)

PROJECT TITLE

Proposed Photovoltaic (Solar) Energy Plant on Paarde Valley Farm near De Aar, Northern Cape

1. BACKGROUND INFORMATION

Project applicant:	Mulilo Renewable Energy (Pty) Ltd		
Trading name (if any):	-		
Contact person:	Warren Morse		
Physical address:	Office 301 Execujet Business Centre, Tower Road, Cape Town International Airport		
Postal address:	PO Box 50, Cape Town International Airport		
Postal code:	7525	Cell:	083 760 9586
Telephone:	021 934 5278	Fax:	021 935 0505
E-mail:	warren@mulilo.com		

Provincial Authority:	Northern Cape Department of Environmental Affairs and Nature Conservation		
Contact person:	Ms Anga Yaphi		
Postal address:	Private Bag X6102, Kimberley		
Postal code:	8300	Cell:	079 695 0267
Telephone:	054 332 2885	Fax:	054 331 1155
E-mail:	ayaphi@upprov.ncape.gov.za		

Landowner:	**See Annexure A for landowner details**		
Contact person:			
Postal address:			
Postal code:		Cell:	
Telephone:		Fax:	
E-mail:			

Local authority in whose jurisdiction the proposed activity will fall:	Emthanjeni Local Municipality		
Nearest town or districts:	De Aar, Northern Cape.		
Contact person:	The Municipal Manager		
Postal address:	45 Voortrekker street		
Postal code:	7000	Cell:	-
Telephone:	053 632 9100	Fax:	053 631 0105
E-mail:	deaar@emthanjeni.co.za		

2. ACTIVITIES APPLIED FOR TO BE AUTHORISED

2.1 For an application for authorisation that involves more than one listed or specified activity that, together, make up one development proposal, all the listed activities pertaining to this application must be indicated.

Indicate the number and date of the relevant notice:	Activity No (s) (in terms of the relevant notice) :	Describe each listed activity as per project description[1]:
545, 2 August 2010	1	Construction of a 75-150MW photovoltaic solar energy plant on a site of approximately 780 ha, Paarde Valley Farm (Portion 1 of Farm 145) near De Aar in the Northern Cape.
544, 2 August 2010	10	A 132 kv distribution line would be required to connect into Eskom's Hydra substation.

Please note that any authorisation that may result from this application will only cover activities specifically applied for.

2.2 A project schedule, indicating the different phases and timelines of the project, must be attached to this application form.

See Annexure B

3. OTHER AUTHORISATIONS REQUIRED

3.1 DO YOU NEED ANY AUTHORISATIONS IN TERMS OF ANY OF THE FOLLOWING LAWS?

3.1.1 National Environmental Management: Waste Act	No
3.1.2 National Environmental Management: Air Quality Act	No
3.1.3 National Environmental Management: Protected Areas Act	No
3.1.4 National Environmental Management: Biodiversity Act	No
3.1.5 Mineral Petroleum Development Resources Act	No
3.1.6 National Water Act	No
3.1.7 National Heritage Resources Act	Yes
3.1.8 Other (please specify)	No

3.2 Have such applications been lodged already? No

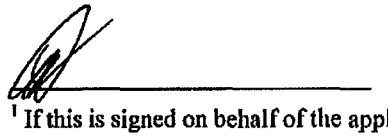
[1] Please note that this description should not be a verbatim repetition of the listed activity as contained in the relevant Government Notice, but should be a brief description of activities to be undertaken as per the project description

4. DECLARATIONS

4.1 The Applicant

I, **Warren Morse of Mulilo Renewable Energy (Pty) Ltd** ,declare that I -

- am, or represent[1], the applicant in this application;
- have appointed / will appoint (delete that which is not applicable) an environmental assessment practitioner to act as the independent environmental assessment practitioner for this application / will obtain exemption from the requirement to obtain an environmental assessment practitioner[2];
- will provide the environmental assessment practitioner and the competent authority with access to all information at my disposal that is relevant to the application;
- will be responsible for the costs incurred in complying with the Environmental Impact Assessment Regulations, 2010, including but not limited to –
  - costs incurred in connection with the appointment of the environmental assessment practitioner or any person contracted by the environmental assessment practitioner;
  - costs incurred in respect of the undertaking of any process required in terms of the Regulations;
  - costs in respect of any fee prescribed by the Minister or MEC in respect of the Regulations;
  - costs in respect of specialist reviews, if the competent authority decides to recover costs; and
  - the provision of security to ensure compliance with conditions attached to an environmental authorisation, should it be required by the competent authority;
- will ensure that the environmental assessment practitioner is competent to comply with the requirements of these Regulations and will take reasonable steps to verify whether the EAP complies with the Regulations;
- will inform all registered interested and affected parties of any suspension of the application as well as of any decisions taken by the competent authority in this regard;
- am responsible for complying with the conditions of any environmental authorisation issued by the competent authority;
- hereby indemnify the Government of the Republic, the competent authority and all its officers, agents and employees, from any liability arising out of the content of any report, any procedure or any action which the applicant or environmental assessment practitioner is responsible for in terms of these Regulations;
- will not hold the competent authority responsible for any costs that may be incurred by the applicant in proceeding with an activity prior to obtaining an environmental authorisation or prior to an appeal being decided in terms of these Regulations;
- will perform all other obligations as expected from an applicant in terms of the Regulations;



[1] If this is signed on behalf of the applicant, proof of such authority from the applicant must be attached.

[2] If exemption is obtained from appointing an EAP, the responsibilities of an EAP will automatically apply to the person conducting the environmental impact assessment in terms of the Regulations.

- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 71 and is punishable in terms of section 24F of the Act.

Signature of the applicant[3]/ Signature on behalf of the applicant:

Mulilo Renewable Energy (Pty) Ltd

Name of company (if applicable):

26·09·2011

Date:

[3] If the applicant is a juristic person, a signature on behalf of the applicant is required as well as proof of such authority. An EAP may not sign on behalf of an applicant.

ANNEXURE A
Landowner details

SOLAR PLANT SITE

	Paarde Valley Farm (No. 145 Portion 2)		
Landowner:	Marais Louis Charles-Trustees		
Contact person:	Mrs Davies		
Postal address:	PO Box 1174, Groot-Brakriver		
Postal code:	6525	Cell:	082 8224 557
Telephone:	044 620 3883	Fax:	
E-mail:			

OFFSITE TRANMISSION LINES

	Farm No. 145 Portion 29 and Farm No. 180 Portion 0 and 9		
Landowner:	Emthanjeni Municipality		
Contact person:	Ms C Klopper		
Postal address:	45 Voortrekker St, De Aar		
Postal code:	7000	Cell:	
Telephone:	053 632 9100	Fax:	
E-mail:	cklopper@emthanjeni.co.za		

	Du Plessis Dam Farm (Farm No. 179 Remainder)		
Landowner:	Roelof Stephanus Du Plessis		
Contact person:	Roelof Stephanus Du Plessis		
Postal address:	PO Box 213, De Aar		
Postal code:	7000	Cell:	082 574 6371
Telephone:	053 631 0042	Fax:	-
E-mail:	charlduplessis@telkomsa.net		

	Farm No. 180 Portion 3		
Landowner:	Eric Kenneth Davies		
Contact person:	Eric Kenneth Davies		
Postal address:	PO Box 423, De Aar		
Postal code:	7000	Cell:	
Telephone:	053 631 4262 / 0052	Fax:	
E-mail:			

	Farm No. 180 Portion 1		
Landowner:	De Aar Stone Crushers Ltd		
Contact person:			
Postal address:	PO Box 340, De Aar		
Postal code:	7000	Cell:	083 259 6096
Telephone:	053 631 0046	Fax:	-
E-mail:	-		

	Hartebeestplaat Farm (No. 135 Remainder and Portion 3)		
Landowner:	Die De Put Trust		
Contact person:	Willem Sterrenberg Oloff Marais/Gabriel van Heerden/Hendrik de Jager		
Postal address:	PO Box 87, De Aar		
Postal code:	7000	Cell:	084 517 5554
Telephone:	-	Fax:	-
E-mail:	-		

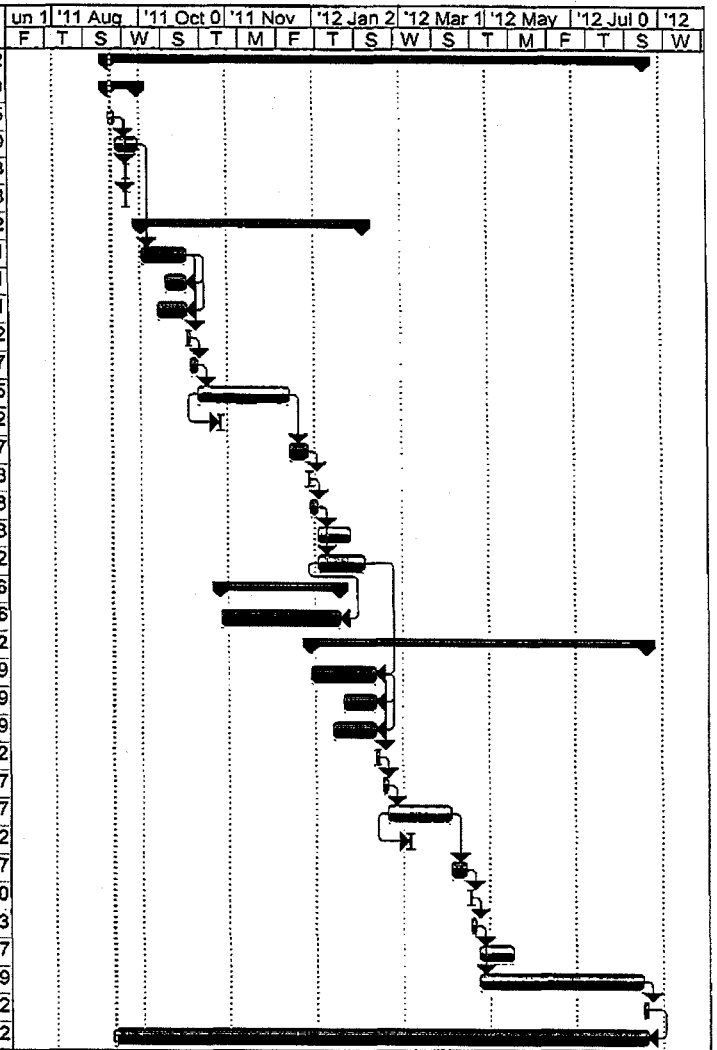
	Hartebeesthoek Farm (No. 31)		
Landowner:	Tropical Eden Trading 532 cc		
Contact person:			
Postal address:	PO Box 222, De Aar		

Postal code:	7000	Cell:	082 561 4138
Telephone:	053 631 0083	Fax:	
E-mail:	horn.ian@standardbank.co.za		

	Farm No. 5 Portion 3		
Landowner:	Eskom Holdings Ltd		
Contact person:			
Postal address:			
Postal code:		Cell:	
Telephone:		Fax:	
E-mail:			

ANNEXURE B
Project Programme

ID	Task Name	Duration	Start	Finish
1	**EIA Process without BID**	**248 days**	**Mon 11/09/12**	**Wed 12/08/22**
2	**Initiation**	**15 days**	**Mon 11/09/12**	**Fri 11/09/30**
3	Application Form	4 days	Mon 11/09/12	Thu 11/09/15
4	Authority Review Period	14 days	Fri 11/09/16	Fri 11/09/30
5	Consultation with DEA	1 day	Fri 11/09/23	Fri 11/09/23
6	Initiation meeting and site visit	1 day	Fri 11/09/23	Fri 11/09/23
7	**Scoping Phase**	**103 days**	**Mon 11/10/03**	**Wed 12/02/22**
8	Draft Scoping Report (DSR)	21 days	Mon 11/10/03	Mon 11/10/31
9	Plan of Study for EIA	10 days	Tue 11/10/18	Mon 11/10/31
10	Scoping PPP	13 days	Thu 11/10/13	Mon 11/10/31
11	Client review of DSR	2 days	Tue 11/11/01	Wed 11/11/02
12	Incorporate client comments, print & courier	3 days	Thu 11/11/03	Mon 11/11/07
13	Public Comment Period	40 days	Tue 11/11/08	Thu 12/01/05
14	Consultation with DEA	1 day	Tue 11/11/22	Tue 11/11/22
15	Final Scoping Report (FSR) & CRR	8 days	Fri 12/01/06	Tue 12/01/17
16	Client review of FSR & CRR	1 day	Wed 12/01/18	Wed 12/01/18
17	Incorporate client comments, print & courier	3 days	Thu 12/01/19	Mon 12/01/23
18	Public Comment Period on Final Report	21 days	Tue 12/01/24	Mon 12/02/13
19	Authority Review Period	30 days	Tue 12/01/24	Wed 12/02/22
20	**Specialist studies**	**55 days**	**Tue 11/11/22**	**Mon 12/02/06**
21	TBC	55 days	Tue 11/11/22	Mon 12/02/06
22	**EIA Phase**	**155 days**	**Thu 12/01/19**	**Wed 12/08/22**
23	Draft EIA Report	30 days	Thu 12/01/19	Wed 12/02/29
24	Environmental Management Programme	15 days	Thu 12/02/09	Wed 12/02/29
25	EIA PPP	20 days	Thu 12/02/02	Wed 12/02/29
26	Client review of Draft EIA Report	2 days	Thu 12/03/01	Fri 12/03/02
27	Incorporate client comments, print & courier	3 days	Mon 12/03/05	Wed 12/03/07
28	Public Comment Period	40 days	Thu 12/03/08	Tue 12/04/17
29	Consultation with DEA	1 day	Thu 12/03/22	Thu 12/03/22
30	Final EIA Report	8 days	Wed 12/04/18	Fri 12/04/27
31	Client review of Final EIA Report & CRR	1 day	Mon 12/04/30	Mon 12/04/30
32	Incorporate client comments, print & courier	3 days	Tue 12/05/01	Thu 12/05/03
33	Public Comment Period on Final Report	22 days	Sun 12/05/06	Sun 12/05/27
34	**Authority Review Period**	104 days	Sun 12/05/06	Sun 12/08/19
35	Notify I&APs of Environmental Decision	3 days	Mon 12/08/20	Wed 12/08/22
36	Project Management	248 days	Mon 11/09/12	Wed 12/08/22



Project: De Aar PV_two EIAs 120911
Date: Tue 11/09/13

Task — Milestone — External Tasks
Split — Summary — External Milestone
Progress — Project Summary — Deadline

ANNEXURE C
Letter from Applicant Regarding Signing Rights

RENEWABLE ENERGY

Mulilo Renewable Energy (Pty)Ltd

PHYSICAL ADDRESS
Office 301
Execujet Business Centre
Tower Road
Cape Town International Airport
7525 South Africa

Telephone: +27 (0) 21 934 5268
Facsimile: +27 (0) 21 935 0505 / 0866356809
Email : chris@capedeep.com
POSTAL ADDRESS
P O Box 50
Cape Town International Airports
7525 South Africa

26 September 2011

RESOLUTION

Further to a meeting of the board of Mulilo Renewable Energy (Pty) Ltd, held at Cape Town on 16th September 2011, It has been agreed that Warren Morse has the authority to sign the Application Form for Environmental Authorisation.

Signed at Cape Town on 26th September 2011

J H Cullum Director

J Coetsee Director

ANNEXURE D
Landowner Consent

Paarde Valley Farm No. 145 Portion 2

DA27

082 822 4557
Mrs Davies

AWSAM/dagte: 06/04/09

MEMORANDUM VAN HUUROOREENKOMS

aangegaan en gesluit tussen

Marais Louis Charles Trustee
MT 1189/99

(Registrasienommer:)

(die 'VERHUURDER')

en

MULILO RENEWABLE ENERGY (EDMS) BPK

(Registrasienommer: 2008/010114/07)

(die 'HUURDER')

1. **INTERPRETASIE**

In hierdie Huurooreenkoms, tensy die konteks tot die teendeel aandui:

1.1 beteken die VERHUURDER:

Marais Louis Charles Trustee
MT 1189/99

1.2 beteken die HUURDER Mulilo Renewable Energy (Edms) Bpk Ltd, Registrasienommer: 2008/010114/07, verteenwoordig deur Johannes Coetsee, wie behoorlik gemagtig is om as sodanig op te tree, van p/a Keeromstraat 68, Kaapstad, 8001;

1.3 beteken die HUURPERSEEL die plaas beskryf as, 145/2 Philipstown Rd Paarde Valley gehou onder titelakte T 19715/1986, en met oppervlakte van 1102,4954 ha, maar uitgesluit alle gebou, plaasgereedskap en -implemente, voorraad, voertuie en waterbronne, onderhewig aan die bepalings van klousule 6 hieronder en ook uitgesluit alle gedeeltes wat nie deur die HUURDER gebruik word vir wind- en sonkragopwekking doeleindes nie;

1.4 beteken die AANVANGSDATUM die datum van onderteken van hierdie Huurooreenkoms deur die party daartoe wat dit laaste onderteken;

1.5 beteken die OKKUPASIEDATUM die Aanvangsdatum;

1.6 beteken die AKTIVERINGSDATUM die eerste datum wat 'n turbine krag aan Eskom of 'n ander kommersiële gebruiker lewer, soos voorsiening voor gemaak word in klousule 5.4 hieronder.

Farm No. 145 Portion 29

47

MULILO
RENEWABLE ENERGY

DE AAR TRANSMISSIELYN	
PROJEK NR:	ITEM NR:

OPSIE OM 'N SERWITUUT TE VERKRY

Ons, die ondergetekendes,

1. Emthanjeni Munisipaliteit hierin verteenwoordig deur Mnr. Isak Visser Munisipale bestuurder
   Adres: .....Voortrekkerstraat 45,..De Aar.....
   Poskode.....7000..... ID Nr: ..... 700215 5520 082.....
   Tel Nr.....0536329100..... Cel Nr:.....
   C/O; Ms C Klopper..... .Epos. .... cklopper@emthanjeni.co.za.....

2. .....
   Adres:.....
   Poskode..... ID Nr:.....
   Tel Nr..... Cel Nr:.....
   Getroud buite/binne GVG op:.....Epos:..... synde die GEREGISTREERDE EIENAAR/S (hierna genoem die "geregistreerde eienaar") en

3. Mulilo Hernubare Energie (Pty) Ltd.....
   Adres:..... Posbus 50, Kaapstad Internasionale Lughawe.....
   Poskode.....7525 ....., ID Nr:.....
   Tel Nr.....0219345268..... Cel Nr:.....
   Getroud buite/binne GVG op:.....Epos:.....
   synde die KOPER/S : HUURDER/S (hierna genoem die koper/huurder") en

4. .....
   Adres: .....
   Poskode.....ID Nr:.....
   Tel Nr.....Cel Nr:.....Epos:.....
   synde die VRUGGEBRUIKER/ERFGENAME (hierna genoem die "vruggebruiker/erfgenaam")

Hierna almal gesamentlik of afsonderlik genoem die "EIENAAR" van die volgende elendom/me, volgens titelaktes:

PLAAS NAAM: .....De Aar.....
REGISTRASIE AFDELING: .....29/145.....
PLAASLIKE OWERHEID: .....Philipstown RD.....
GROOTTE: ..... 643.1545 H.....
TITELAKTE NR: Gehou kragtens Akte nommer .....T8181/1971..... gedateer ..... 1971/03/29.....
(hierna genoem die "elendom") verleen hiermee aan

CH

Geteken te De Aar op hierdie 5 dag van Julie 2010 in die teenwoordigheid van die ondergetekende getuies:
AS GETUIES:

1. .....

2. .....

.....
Geregistreerde Eienaar of Gemagtigde Agent

Geteken te ..... op hierdie ..... dag van ..... 20..... in die teenwoordigheid van die ondergetekende getuies:
AS GETUIES:

1. .....

2. .....

.....
Geregistreerde Eienaar of Gemagtigde Agent

Geteken te KIMBERLEY op hierdie 12 dag van JULIE 2010 in die teenwoordigheid van die ondergetekende getuies:
AS GETUIES:

1. .....

2. .....

.....
Koper/Huurder

Geteken te ..... op hierdie ..... dag van ..... 20..... in die teenwoordigheid van die ondergetekende getuies:
AS GETUIES:

1. .....

2. .....

.....
Vruggebruiker/Erfgenaam

Die eienaar/s gee hiermee toestemming dat die vergoeding in hierdie opsie in die vlogende bank rekening betaal word: Rekening Houer: Emthanjeni Munisipaliteit..... Bank Rek. No.: ...185 000 0081..... Bank: ...ABSA De Aar..... Tak naam : ....De Aar..... Tak kode:..... 33 4308.....	<u>Eienaar/s title akte en verband besonderhede:</u> Title Akte in bewaring by: .....Emthanjeni Munisipaliteit ..... Adres..... Voortrekkerstraat 45.....De Aar..... Verband Houer: ..... Adres: ..... Tel:.....
<u>Eienaar Belasting Besonderhede:</u> SARS (Belasting) No.	**MULILO Verteenwoordiger** ***ZELDA STRAUSS – 082 494 6313***

Du Plessis Dam Farm No. 179

DA 28

AWS/ww/lease : 06/04/09

MEMORANDUM VAN HUUROOREENKOMS

aangegaan en gesluit tussen

Du Plessis Roelof Stephanus
Id 3909215023085

(Registrasienommer:)

(die 'VERHUURDER')

en

MULILO RENEWABLE ENERGY (EDMS) BPK

(Registrasienommer: 2008/010114/07)

(die 'HUURDER')

1. INTERPRETASIE

In hierdie Huurooreenkoms, tensy die konteks tot die teendeel aandui:

1.1 beteken die VERHUURDER:
DuPlessis, Roelof Stephanus

1.2 beteken die HUURDER Mulilo Renewable Energy (Edms) Bpk Ltd, Registrasienommer: 2008/010114/07, verteenwoordig deur Johannes Coetsee, wie behoorlik gemagtig is om as sodanig op te tree, van p/a Keeromstraat 68, Kaapstad, 8001;

1.3 beteken die HUURPERSEEL die plaas beskryf as, DuPlessis DAn
Philipstown RD 179 o Renaining Extent
gehou onder titelakte T 15093/1986, en met oppervlakte van ~~244,5563~~ ha, maar uitgesluit alle geboue, plaasgereedskap en -implemente, voorraad, voertuie en waterbronne, onderhewig aan die bepalings van klousule 6 hieronder en ook uitgesluit alle gedeeltes wat nie deur die HUURDER gebruik word vir wind- en sonkragopwekking doeleindes nie;

1.4 beteken die AANVANGSDATUM die datum van ondertekening van hierdie Huurooreenkoms deur die party daartoe wat dit laaste onderteken;

1.5 beteken die OKKUPASIEDATUM die Aanvangsdatum;

1.6 beteken die AKTIVERINGSDATUM die eerste datum wat 'n turbine krag aan Eskom of 'n ander kommersiële gebruiker lewer, soos voorsiening voor gemaak word in klousule 5.4 hieronder.

Farm No. 180 Remainder

46

MULILO
RENEWABLE ENERGY

DE AAR TRANSMISSIELYN	
PROJEK NR:	ITEM NR:

OPSIE OM 'N SERWITUUT TE VERKRY

Ons, die ondergetekendes,

1. Emthanjeni Munisipaliteit hierin verteenwoordig deur Mnr. Isak Visser Munisipale bestuurder
   Adres: .....Voortrekkerstraat 45,..De Aar.....
   Poskode.....7000..... ID Nr: ..... 700215 5520 082.....
   Tel Nr.....0536329100..... Cel Nr:.....
   C/O: Ms C Klopper..... .Epos. .... cklopper@emthanjeni.co.za,.....

2. .....
   Adres:.....
   Poskode..... ID Nr:.....
   Tel Nr..... Cel Nr.....
   Getroud buite/binne GVG op:.....Epos:..... synde die GEREGISTREERDE EIENAAR/S (hierna genoem die "geregistreerde eienaar") en

3. Mulilo Hernubare Energie (Pty) Ltd.....
   Adres:..... Posbus 50, Kaapstad Internasionale Lughawe.....
   Poskode.....7525 ..... ID Nr:.....
   Tel Nr.....0219345268..... Cel Nr.....
   Getroud buite/binne GVG op:.....Epos:.....
   synde die KOPER/S : HUURDER/S (hierna genoem die koper/huurder") en

4. .....
   Adres: .....
   Poskode.....ID Nr:.....
   Tel Nr.....Cel Nr:.....Epos:.....
   synde die VRUGGEBRUIKER/ERFGENAME (hierna genoem die "vruggebruiker/erfgenaam")

Hierna almal gesamentlik of afsonderlik genoem die "EIENAAR" van die volgende eiendom/me, volgens titelaktes:

PLAAS NAAM: ..De Aar.....
REGISTRASIE AFDELING: ....Re/180.....
PLAASLIKE OWERHEID: .....Philipstown RD.....
GROOTTE: ..... 1040.4083 H.....
TITELAKTE NR: Gehou kragtens Akte nommer ..... T2197/1921..... gedateer ..... 1921/03/15.....
(hierna genoem die "eiendom") verleen hiermee aan

Geleken te ...DeAar... op hierdie ...5... dag van ...Julie... 20.10 in die teenwoordigheid van die ondergetekende getuies:
AS GETUIES:

1. .....

2. .....

.....
Geregistreerde Eienaar of Gemagtigde Agent

Geleken te ..... op hierdie ..... dag van ..... 20..... in die teenwoordigheid van die ondergetekende getuies:
AS GETUIES:

1. .....

2. .....

.....
Geregistreerde Eienaar of Gemagtigde Agent

Geleken te ...KARSTAD... op hierdie ...12... dag van ...JULIE... 20..... in die teenwoordigheid van die ondergetekende getuies:
AS GETUIES:

1. .....

2. .....

.....
Koper/Huurder

Geleken te ..... op hierdie ..... dag van ..... 20..... in die teenwoordigheid van die ondergetekende getuies:
AS GETUIES:

1. .....

2. .....

.....
Vruggebruiker/Erfgenaam

Die eienaar/s gee hiermee toestemming dat die vergoeding in hierdie opsie in die vlogende bank rekening betaal word: Rekening Houer: Emthanjeni Munisipaliteit..... Bank Rek. No.: ...185 000 0081..... Bank: ...ABSA De Aar..... Tak naam : ....De Aar..... Tak kode:..... 33 4308.....	<u>Eienaar/s title akte en verband besonderhede:</u> Title Akte in bewaring by: .....Emthanjeni Munisipaliteit ..... Adres..... Voortrekkerstraat 45.....De Aar..... Verband Houer: ..... Adres: ..... Tel:.....
<u>Eienaar Belasting Besonderhede:</u> SARS (Belasting) No.	**MULILO Verteenwoordiger** ***ZELDA STRAUSS - 082 494 6313***

Farm No. 180 Portion 3

1

DA 26.

AWS/vw/lease : 06/04/09

MEMORANDUM VAN HUUROOREENKOMS

aangegaan en gesluit tussen

Davies Eric Kenneth
Id 470928 5056083

(Registrasienommer:)

(die 'VERHUURDER')

en

MULILO RENEWABLE ENERGY (EDMS) BPK

(Registrasienommer: 2008/010114/07)

(die 'HUURDER')

1. INTERPRETASIE

In hierdie Huurooreenkoms, tensy die konteks tot die teendeel aandui:

1.1 beteken die VERHUURDER:

Davies Eric Kenneth

1.2 beteken die HUURDER Mulilo Renewable Energy (Edms) Bpk Ltd, Registrasienommer: 2008/010114/07, verteenwoordig deur Johannes Coetsee, wie behoorlik gemagtig is om as sodanig op te tree, van p/a Keeromstraat 68, Kaapstad, 8001;

1.3 beteken die HUURPERSEEL die plaas beskryf as, Philipstown Rd 180/3 gehou onder titelakte T. 72998/1994, en met oppervlakte van 198,4424 ha, maar uitgesluit alle geboue, plaasgereedskap en -implemente, voorraad, voertuie en waterbronne, onderhewig aan die bepalings van klousule 6 hieronder en ook uitgesluit alle gedeeltes wat nie deur die HUURDER gebruik word vir wind- en sonkragopwekking doeleindes nie;

1.4 beteken die AANVANGSDATUM die datum van ondertekening van hierdie Huurooreenkoms deur die party daartoe wat dit laaste onderteken;

1.5 beteken die OKKUPASIEDATUM die Aanvangsdatum;

1.6 beteken die AKTIVERINGSDATUM die eerste datum wat 'n turbine krag aan Eskom of 'n ander kommersiële gebruiker lewer, soos voorsiening voor gemaak word in klousule 5.4 hieronder.

Farm 180 Portion 9

45

MULILO
RENEWABLE ENERGY

DE AAR TRANSMISSIELYN	
PROJEK NR:	ITEM NR:

OPSIE OM 'N SERWITUUT TE VERKRY

Ons, die ondergetekendes,

1. Emthanjeni Munisipaliteit hierin verteenwoordig deur Mnr. Isak Visser Munisipale bestuurder
   Adres: .....Voortrekkerstraat 45,..De Aar.....
   Poskode.....7000..... ID Nr: ..... 700215 5520 082.....
   Tel Nr.....0536329100..... Cel Nr:.....
   C/O: Ms C Klopper..... .Epos. .... cklopper@emthanjeni.co.za.....

2. .....
   Adres:.....
   Poskode..... ID Nr:.....
   Tel Nr..... Cel Nr:.....
   Getroud buite/binne GVG op:.....Epos:..... synde
   die GEREGISTREERDE EIENAAR/S (hierna genoem die "geregistreerde eienaar") en

3. Mulilo Hernubare Energie (Pty) Ltd.....
   Adres:..... Posbus 50, Kaapstad Internasionale Lughawe.....
   Poskode.....7525 ..... ID Nr.....
   Tel Nr.....0219345268..... Cel Nr:.....
   Getroud buite/binne GVG op:.....Epos:.....
   synde die KOPER/S : HUURDER/S (hierna genoem die koper/huurder") en

4. .....
   Adres: .....
   Poskode..... .....ID Nr:.....
   Tel Nr.....Cel Nr:.....Epos:.....
   synde die VRUGGEBRUIKER/ERFGENAME (hierna genoem die "vruggebruiker/erfgenaam")

Hierna almal gesamentlik of afsonderlik genoem die "EIENAAR" van die volgende eiendom/me, volgens titelaktes:

PLAAS NAAM: .....De Aar.....
REGISTRASIE AFDELING: .....9/180.....
PLAASLIKE OWERHEID: .....Philipstown RD.....
GROOTTE: ..... 144,0820 H.....
TITELAKTE NR: Gehou kragtens Akte nommer .....T105482/2000..... gedateer .....200/12/13.....
(hierna genoem die "eiendom") verleen hiermee aan

Geteken te ..... op hierdie ..... dag van ..... 20..... in die teenwoordigheid van die ondergetekende getuies:
AS GETUIES:

1. .....

2. .....

.....
Geregistreerde Eienaar of Gemagtigde Agent

Geteken te ..... op hierdie ..... dag van ..... 20..... in die teenwoordigheid van die ondergetekende getuies:
AS GETUIES:

1. .....

2. .....

.....
Geregistreerde Eienaar of Gemagtigde Agent

Geteken te KAAPSTAD op hierdie 12 dag van JULIE 20 10 in die teenwoordigheid van die ondergetekende getuies:
AS GETUIES:

1. .....

2. .....

.....
Koper/Huurder

Geteken te ..... op hierdie ..... dag van ..... 20..... in die teenwoordigheid van die ondergetekende getuies:
AS GETUIES:

1. .....

2. .....

.....
Vruggebruiker/Erfgenaam

Die eienaar/s gee hiermee toestemming dat die vergoeding in hierdie opsie in die vlogende bank rekening betaal word: Rekening Houer: Emthanjeni Munisipaliteit..... Bank Rek. No.: ..185 000 0081..... Bank: ...ABSA De Aar..... Tak naam : ....De Aar..... Tak kode:..... 33 4308.....	<u>Eienaar/s title akte en verband besonderhede:</u> Title Akte in bewaring by: .....Emthanjeni Munisipaliteit ..... Adres..... Voortrekkerstraat 45.....De Aar..... Verband Houer: ..... Adres: ..... Tel:.....
<u>Eienaar Belasting Besonderhede:</u> SARS (Belasting) No.	**MULILO Verteenwoordiger** ***ZELDA STRAUSS – 082 494 6313***

Farm No. 180 Portion 1

DA 20

SOLAR & WIND

AWS/vw/lease : 08/04/09

MEMORANDUM VAN HUUROOREENKOMS

aangegaan en gesluit tussen

De Aar Stone Crushers Bk

Bk 1998/012 728/23
(Registrasienommer:)

(die 'VERHUURDER')

en

MULILO RENEWABLE ENERGY (EDMS) BPK

(Registrasienommer: 2008/010114/07)

(die 'HUURDER')

1. INTERPRETASIE

In hierdie Huurooreenkoms, tensy die konteks tot die teendeel aandui:

1.1 beteken die VERHUURDER:

De Aar Stone Crushers Bk

1.2 beteken die HUURDER Mulilo Renewable Energy (Edms) Bpk Ltd, Registrasienommer: 2008/010114/07, verteenwoordig deur Johannes Coetsee, wie behoorlik gemagtig is om as sodanig op te tree, van p/a Keeromstraat 68, Kaapstad, 8001;

1.3 beteken die HUURPERSEEL die plaas beskryf as, Philipstown Rd De Aar 180 Portion 1 gehou onder titelakte T.589.64 | 1983....., en met oppervlakte van 2563, 8824 ha, maar uitgesluit alle geboue, plaasgereedskap en -implemente, voorraad, voertuie en waterbronne, onderhewig aan die bepalings van klousule 6 hieronder en ook uitgesluit alle gedeeltes wat nie deur die HUURDER gebruik word vir wind- en sonkragopwekking doeleindes nie;

1.4 beteken die AANVANGSDATUM die datum van ondertekening van hierdie Huurooreenkoms deur die party daartoe wat dit laaste onderteken;

1.5 beteken die OKKUPASIEDATUM die Aanvangsdatum;

1.6 beteken die AKTIVERINGSDATUM die eerste datum wat 'n turbine krag aan Eskom of 'n ander kommersiële gebruiker lewer, soos voorsiening voor gemaak word in klousule 5.4 hieronder.

Hartebeestplaat Farm No. 135 RE and Portion 3

39

MULILO
RENEWABLE ENERGY

DE AAR TRANSMISSIELYN VIR WINDPLAAS	
PROJEK NR:	ITEM NR:

OPSIE OM 'N SERWITUUT TE VERKRY

Ons, die ondergetekendes,

DIE DE PUT TRUST
Registrasienommer: IT177/1997 hierin verteenwoordig deur

WILLEM STERRENBERG OLOFF MARAIS
Adres: POSBUS 94, NUWEJAARSFONTEIN, DE AAR
Poskode 7000 ID. 531015 5052 08
Tel Nr: Cel
GETROUD BUITE GEMEENSKAP VAN GOEDERE en

GABRIEL VAN HEERDEN
Adres: POSBUS 444, LEOSINGEL 31, DE AAR
Poskode 7000 ID. 650725 5033 08 4
Tel Nr: Cel
ONGETROUD en

HENDRIK DE JAGER
Adres: POSBUS 87, DE PUT, DE AAR
Poskode 7000 ID. 560727 5011 08 5
Tel Nr: 084 517 5554 Cel 084 517 5554
ONGETROUD

synde die GEREGISTREERDE EIENAAR (hierna genoem die "geregistreerde eienaar") en

Hierna almal gesamentlik of afsonderlik genoem die "TRUSTEES" van die volgende eiendom, volgens titelaktes:

PLAAS NAAM: **HARTEBEESTPLAAT NR. 135**
REGISTRASIE AFDELING: BRITSTOWN
PLAASLIKE OWERHEID: .PIXLEY KA SEME DISTRIKSMUNISIPALITEIT
GROOTTE: 2539,8802 HEKTAAR
TITELAKTE NR: Gehou kragtens Akte nommer: T16882/1998 gedateer 27 AUGUSTUS 1998
(hierna genoem die "eiendom") verleen hiermee aan

Geteken te De Aar op hierdie 27 dag van Mei 20 10
in die teenwoordigheid van die ondergetekende getuies:
AS GETUIES:

1. .....
2. .....

.....
Geregistreerde Eienaar of Gemagtigde Agent

Geteken te De Aar op hierdie 27 dag van Mei 20 10
in die teenwoordigheid van die ondergetekende getuies:
AS GETUIES:

1. .....
2. .....

.....
Geregistreerde Eienaar of Gemagtigde Agent

Geteken te De Aar op hierdie 27 dag van Mei 20 10
in die teenwoordigheid van die ondergetekende getuies:
AS GETUIES:

1. .....
2. .....

.....
Geregistreerde Eienaar of Gemagtigde Agent

Geteken te ..... op hierdie 9de dag van Julie 20 10
in die teenwoordigheid van die ondergetekende getuies:
AS GETUIES:

1. .....
2. .....

.....
Koper/Huurder

Geteken te ..... op hierdie ..... dag van ..... 20.....
in die teenwoordigheid van die ondergetekende getuies:
AS GETUIES:

1. .....
2. .....

.....
Vruggebruiker/Erfgenaam

Die eienaar/s gee hiermee toestemming dat die vergoeding in hierdie opsie in die volgende bank rekening betaal word: Rekening Houer: DE PUT TRUST Bank Rek. No.: 40 6863 2336 Bank: ABSA BANK BEPERK Tak naam : DE AAR Tak kode: 632005	Eienaar/s title akte en verband besonderhede: Title Akte in bewaring by: Naam..... Adres..... Verband Houer: ..... Adres: ..... Tel:.....
Eienaar Belasting Besonderhede: SARS (Belasting) No. 0128/063/06/2 SARS (BTW) No. 4930167319	MULILO Verteenwoordiger **ZELDA STRAUSS – 082 494 6313**

Farm Hartebeeshoek No. 31 DE AAR. BJA 34

AWS/ww/lease : 06/04/09

MEMORANDUM VAN HUUROOREENKOMS

aangegaan en gesluit tussen

Tropical Eden Trading 532 cc
2005 147 43823

(Registrasienommer:)

(die 'VERHUURDER')

en

MULILO RENEWABLE ENERGY (EDMS) BPK

(Registrasienommer: 2008/010114/07)

(die 'HUURDER')

1. INTERPRETASIE

In hierdie Huurooreenkoms, tensy die konteks tot die teendeel aandui:

1.1 beteken die VERHUURDER:

Tropical Eden Trading 532 CC
2005 147743823

1.2 beteken die HUURDER Mulilo Renewable Energy (Edms) Bpk Ltd, Registrasienommer: 2008/010114/07, verteenwoordig deur Johannes Coetsee, wie behoorlik gemagtig is om as sodanig op te tree, van p/a Keeromstraat 68, Kaapstad, 8001;

1.3 beteken die HUURPERSEEL die plaas beskryf as, Hanover Rd 31 | 0 (Remaining Extent) Hartebeest Hoek gehou onder titelakte T 19018/2007, en met oppervlakte van 3627,1900 ha, maar uitgesluit alle geboue, plaasgereedskap en -implemente, voorraad, voertuie en waterbronne, onderhewig aan die bepalings van klousule 6 hieronder en ook uitgesluit alle gedeeltes wat nie deur die HUURDER gebruik word vir wind- en sonkragopwekking doeleindes nie;

1.4 beteken die AANVANGSDATUM die datum van ondertekening van hierdie Huurooreenkoms deur die party daartoe wat dit laaste onderteken;

1.5 beteken die OKKUPASIEDATUM die Aanvangsdatum;

1.6 beteken die AKTIVERINGSDATUM die eerste datum wat 'n turbine krag aan Eskom of 'n ander kommersiële gebruiker lewer, soos voorsiening voor gemaak word in klousule 5.4 hieronder.

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Private Bag X 447 · PRETORIA · 0001 · Fedsure Building · 315 Pretorius Street · PRETORIA
Tel (+ 27 12) 310 3911 · Fax (+ 2712) 322 2682

NEAS Reference: DEAT/EIA/0000607/2011
DEA Reference: 12/12/20/2500
Enquiries: Nyiko Ngoveni
Tel: 012 395 1694/1768 **Fax:** 012 320 7539 **E-mail:** nngoveni@environment.gov.za

Karen Shippey
Aurecon South Africa (Pty) Ltd
PO Box 494
CAPE TOWN
8000

Fax: 021 526 9500
Tel: 021 526 6027

	File
Date:	21 / 10 / 2011

To		Seen	Act	CI
DG/ DDG	Initial			
	KS			
	LC	✓		

PER FACSIMILE / MAIL

Dear Sir/Madam

ACKNOWLEDGEMENT OF RECEIPT AND ACCEPTANCE OF NEW APPLICATION FOR ENVIRONMENTAL AUTHORISATION (SCOPING& EIA PROCESS) FOR THE PROPOSED PHOTOVOLTAIC (SOLAR) ENERGY PLANT ON PAARDE VALLEY FARM NEAR DE AAR, NORTHERN CAPE

The Department confirms having received the Application Form and EAP Declaration of Interest on 4 October 2011 for environmental authorisation for the abovementioned project. The Application is accepted.

Please note that the Department will request the delegation of authority from the provincial Department and will notify you with regards to the outcome.

Please include both reference numbers (NEAS Reference and DEA Reference), as listed above, on all documents and correspondence submitted to the Department.

Please note that *one hard copy and one electronic copy (saved on CD/DVD) of draft reports*, and *five hard copies and one electronic copy of final reports* must be submitted to the Department.

In addition, please consider the following during compilation of reports for this application for environmental authorisation:

- All applicable Departmental Guidelines must be considered throughout the application process. These can be downloaded from the Department's website: www.environment.gov.za, Environmental Impact Management button, listed under "EIA Administration": Integrated Environmental Management Information Series link. These include, but are not limited to, the following topics: Scoping, Environmental Impact Reporting, Stakeholder Engagement, Specialist Studies, Impact Significance, Cumulative Effects Assessments, Alternatives in EIA and Environmental Management Plans.
- Please be advised that in terms of the EIA Regulations and NEMA the investigation of alternatives is mandatory. Alternatives must therefore be identified, investigated to determine if they are feasible and reasonable. It is also mandatory to investigate and assess the option of not proceeding with the proposed activity (the "no-go" option).
- Refer to the attached annexure for specific requirements for the submission of applications for environmental authorisation for solar power generation facilities.
- Should water, solid waste removal, effluent discharge, stormwater management and electricity services be provided by the municipality, you are requested to provide this office with written proof that the municipality has sufficient capacity to provide the necessary services to the proposed development. Confirmation of the availability of services from the service providers must be provided together with the reports to be submitted.
- In the reports to be submitted it must clearly be demonstrated in which way the proposed development will meet the requirements of sustainable development. You must also consider energy efficient technologies and water saving devices and technologies for the proposed development. This could include measures such as the recycling of waste, the use of low voltage or compact fluorescent lights instead of incandescent globes, maximising the use of solar heating, the use of dual flush toilets and low-flow shower heads and taps, the management of storm water, the capture and use of rainwater from gutters and roofs, the use of locally indigenous vegetation during landscaping and the training of staff to implement good housekeeping techniques.
- The applicant/EAP is required to inform this Department in writing upon submission of any draft report, of the contact details of the relevant State Departments (that administer laws relating to a matter affecting the environment) to whom copies of the draft report were

submitted for comment. Upon receipt of this confirmation, this Department will in accordance with Section 24O(2) & (3) of the National Environmental Management Act, 1998 (Act 107 of 1998) inform the relevant State Departments of the commencement date of the 40 day commenting period, or 60 days in the case of the Department of Water Affairs for waste management activities which also require a licence in terms of the National Water Act, 1998 (Act 36 of 1998).

- Should it be necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999), please submit the necessary application to SAHRA or the relevant provincial heritage agency and submit proof thereof with the Basic Assessment Report/Environmental Impact Assessment Report. The relevant heritage agency should also be involved during the public participation process and have the opportunity to comment on all the reports to be submitted to this Department.

In terms of regulation 67 of the EIA Regulations, 2010 this application will lapse if the applicant (or the EAP on behalf of the applicant) fails to comply with a requirement in terms of the Regulations for a period of six months after having submitted the application, unless the reasons for failure have been communicated to and accepted by this Department.

You are hereby reminded that the activity may not commence prior to an environmental authorisation being granted by the Department.

Yours sincerely

Mr Ishaam Abader
Deputy Director-General: Environmental Quality and Protection
Department of Environmental Affairs
Letter signed by: Ms Nyiko Ngoveni
Designation: Environmental Officer: Environmental Impact Evaluation
Date: 20/10/2011

CC:	Waren Morse	Mulilo Renewable Energy (Pty) Ltd	Tel: 021 934 5278	Fax: 021 935 0505
	Ms Anga Yaphi	Northern Cape DEA&NC	Tel: 054 332 2885	Fax:054 331 1155
	Municipal Manager	Emthanjeni Local Municipality	Tel: 053 632 9100	Fax: 053 631 0105

A. EIA INFORMATION REQUIRED FOR SOLAR ENERGY FACILITIES

1. General site information

The following general site information is required:

- Descriptions of all affected farm portions
- 21 digit Surveyor General codes of all affected farm portions
- Copies of deeds of all affected farm portions
- Photos of areas that give a visual perspective of all parts of the site
- Photographs from sensitive visual receptors (tourism routes, tourism facilities, etc.)
- Solar plant design specifications including:
  - Type of technology
  - Structure height
  - Surface area to be covered (including associated infrastructure such as roads)
  - Structure orientation
  - Laydown area dimensions (construction period and thereafter)
  - Generation capacity
- Generation capacity of the facility as a whole at delivery points

This information must be indicated on the first page of any Scoping or EIA document. It is also advised that it be double checked as there are too many mistakes in the applications that have been received that take too much time from authorities to correct.

2. Site maps and GIS information

Site maps and GIS information should include at least the following:

- All maps/information layers must also be provided in ESRI Shapefile format
- All affected farm portions must be indicated
- The exact site of the application must be indicated (the areas that will be occupied by the application)
- A status quo map/layer must be provided that includes the following:
  - Current use of land on the site including:
    - Buildings and other structures
    - Agricultural fields
    - Grazing areas
    - Natural vegetation areas (natural veld not cultivated for the preceding 10 years) with an indication of the vegetation quality as well as fine scale mapping in respect of Critical Biodiversity Areas and Ecological Support Areas
    - Critically endangered and endangered vegetation areas that occur on the site
    - Bare areas which may be susceptible to soil erosion
    - Cultural historical sites and elements
  - Rivers, streams and water courses
  - Ridgelines and 20m continuous contours with height references in the GIS database
  - Fountains, boreholes, dams (in-stream as well as off-stream) and reservoirs

- High potential agricultural areas as defined by the Department of Agriculture, Forestry and Fisheries
- Buffer zones (also where it is dictated by elements outside the site):
  - 500m from any irrigated agricultural land
  - 1km from residential areas
- Indicate isolated residential, tourism facilities on or within 1km of the site

- A slope analysis map/layer that include the following slope ranges:
  - Less than 8% slope
  - between 8% and 12% slope
  - between 12%and 14% slope
  - steeper than 18 % slope
- A map/layer that indicate locations of birds and bats including roosting and foraging areas (specialist input required)
- A site development proposal map(s)/layer(s) that indicate:
  - Positions of solar facilities
  - Foundation footprint
  - Permanent laydown area footprint
  - Construction period laydown footprint
  - Internal roads indicating width (construction period width and operation period width) and with numbered sections between the other site elements which they serve (to make commenting on sections possible)
  - River, stream and water crossing of roads and cables indicating the type of bridging structures that will be used
  - Substation(s) and/or transformer(s) sites including their entire footprint.
  - Cable routes and trench dimensions (where they are not along internal roads)
  - Connection routes to the distribution/transmission network (the connection must form part of the EIA even if the construction and maintenance thereof will be done by another entity such as ESKOM)
  - Cut and fill areas along roads and at substation/transformer sites indicating the expected volume of each cut and fill
  - Borrow pits
  - Spoil heaps (temporary for topsoil and subsoil and permanently for excess material)
  - Buildings including accommodation

With the above information authorities will be able to assess the strategic and site impacts of applications.

3. Regional map and GIS information

The regional map and GIS information should include at least the following:

- All maps/information layers must also be provided in ESRI Shapefile format
- The map/layer must cover an area of 20km around the site
- Indicate the following:
  - roads including their types (tarred or gravel) and category (national, provincial, local or private)
  - Railway lines and stations
  - Industrial areas
  - Harbours and airports
  - Electricity transmission and distribution lines and substations

- Pipelines
- Waters sources to be utilised during the construction and operational phases
- A visibility assessment of the areas from where the facility will be visible
- Critical Biodiversity Areas and Ecological Support Areas
- Critically Endangered and Endangered vegetation areas
- Agricultural fields
- Irrigated areas
- An indication of new road or changes and upgrades that must be done to existing roads in order to get equipment onto the site including cut and fill areas and crossings of rivers and streams

4. Important stakeholders

Amongst other important stakeholders, comments from the National Department of Agriculture, Forestry and Fisheries must be obtained and submitted to the Department. Request for comment must be submitted to:

Mrs. Anneliza Collett
Directorate: Land Use & Soil Management
Department of Agriculture, Forestry & Fisheries
Tel: 012 - 319 7508
Fax: 012 - 329 5938
e-mail: AnnelizaC@nda.agric.za
www.agis.agric.za

In addition, comments must be requested from Eskom (Mr Kevin Leask or Mr Ronald Marais (011) 8008111) regarding grid connectivity and capacity.

B. AGRICULTURE STUDY REQUIREMENTS

- Detailed soil assessment of the site in question, incorporating a radius of 50 m surrounding the site, on a scale of 1:10 000 or finer. The soil assessment should include the following:
  - Identification of the soil forms present on site
  - The size of the area where a particular soil form is found
  - GPS readings of soil survey points
  - The depth of the soil at each survey point
  - Soil colour
  - Limiting factors
  - Clay content
  - Slope of the site
  - A detailed map indicating the locality of the soil forms within the specified area,
  - Size of the site
- Exact locality of the site
- Current activities on the site, developments, buildings
- Surrounding developments / land uses and activities in a radius of 500 m of the site
- Access routes and the condition thereof
- Current status of the land (including erosion, vegetation and a degradation assessment)

- Possible land use options for the site
- Water availability, source and quality (if available)
- Detailed descriptions of why agriculture should or should not be the land use of choice
- Impact of the change of land use on the surrounding area
- A shape file containing the soil forms and relevant attribute data as depicted on the map

Annexure B

- List of potential I&APs
- Relevant authorities contact details
- Advertisements
- Site notices
- Letters to I&APs
- Letter to Authorities

Details	Landowner Name	Tel number	Cell Number	Email	PO BOX	Town	Code
Paarde Valley Farm	O.Venter	044 6203883	0824152320		PO Box 1174	GROOT-BRAKRIVIER	6525
Badenhorst Dam Farm	Jannie Lambrecht	053 631 0046	083 259 6096		PO Box 340	DE AAR	7000
	Mrs Erasmus		0837077007	deaarpharmacy@cybertrade.co.za	Posbus 234	DE AAR	7000
farm No. 180 Portion 3	Eric Kenneth Davies	053 631 4262			PO Box 423	DE AAR	7000
Hartebeestplaat plaas	Willem sterrenberg Oloff marais	084 517 5554			PO Box 87	DE AAR	7000
hartebeesthoek plaas	Kobie Olivier	053 631 0083	082 561 4138	horn.ian@standardbank.co.za	PO Box 222	DE AAR	7000
Farm No.5 Portion 3 Eskom							
Du Plessis Dam farm	Roelof du Plessis				PO Box 213	DE AAR	7000
2/133; 1/144	LC Marais	None					
5/133; 40/145 and 6/145	Transnet Freaght rail Property Management	053 838 3107			P.O.Box 10450	Beaconsfield	8315
RE/144; 1/145	Blauwkrantz Boerdery C.C	053 631 1255			P.O. Box 282	De Aar	7000
29/145	Munisipaliteit/Uitval werke	053 632 9100			P.O. Box 42	De Aar	7000
RE/135	De Put Trust	053 631 0152			P.O. Box 227	De Aar	7000
3/135	Omprop CC	None					
RE/4	LDP Boerdery Pty Ltd				P.O. Box 88	De Aar	7000
2/180	Bletterman Trust-Salmon davids				7 Saffier Avenue Montana	De Aar	7000
4/180	Ebenezer opkomende Boere				De Aar 180 Portion 4		
6/180; 9/180	Emthanjeni Municipality	053 632 9100			P.O.Box 42	De Aar	7000
7/180; 8/180	Transnet Ltd	0415072490			P.O.Box 638	Port Elizabeth	6000
RE 130- Smouspoort Boerdery Pty Ltd	Frederick Jacobus van Zyl / Jurie Johannes van Zyl	053 631 0501		fjwz@webmail.co.za	P O Box 1	De Aar	7000

Details	Landowner Name	Tel number	Cell Number	Email	PO BOX	Town	Code
RE 138	Roelof Erasmus Venter		082 415 2321	reventer@adsactive.com	P O Box 41	De Aar	7000
131/2 RE	Johannes Wilhelm van Zyl	053631 0471			P O Box 12	De Aar	7000
131/1	Johannes Wilhelm van Zyl	053631 0471			P O Box 12	De Aar	7000
130/4	Johannes Wilhelm van Zyl	053631 0471			P O Box 12	De Aar	7000
RE 131	Johannes Wilhelm van Zyl	053631 0471			P O Box 12	De Aar	7000
	Barend Van Der Merwe			bennie11@webmail.co.za	Wag-'n-Bietjie Posbus 177	De Aar	7000
	Frank Bailey				Jakkalskuilen Posbus 401	De Aar	7000
	Dr Jan Van Zyl				Mynfontein Posbus 477	Onrusrivier	7201
	W.S.O. Marais (Sterrie)				Nuwejaarsfontein Posbus 94	De Aar	7000
	De Put Trust (Hendrik De Jager)				Posbus 227	De Aar	7000
	Tersius Marais				Blaauwkrantz Boedery	De Aar	7000
	Pieter Stefanus Du Toit				Rietfontein Posbus 557	De Aar	7000
	Zwiegers Jan Hendrik				Baardmanskoppie Posbus 393	De Aar	7000
	G. Sieberhagen				Posbus 24	De Aar	7000
	Willem Jacobus Van Der Merwe				PO. Box 612	De Aar	7000
	N van Der Merwe				PO. Box 240	De Aar	7000
	DP. Van den Heever				PO. Box 70	De Aar	7000
	PJ. Van der Merwe				PO. Box 56	Britstown	8782
	FC. Battenhuassen				PO. Box 67	Phillipstown	8795
	M van der Merwe				PO. Box 345	De Aar	7000
	PJ. Van der Watl				PO. Box 102	Phillipstown	8795

Details	Landowner Name	Tel number	Cell Number	Email	PO BOX	Town	Code
	CA Theron				PO. Box 117	De Aar	7000
	EG. Battenhuassen				PO. Box 11	Phillipstown	8795
De Aar Stone Crushers bk					PO. Box 340	De Aar	7000
	E.M Vermeulen				PO. Box 429	De Aar	7000
	JP. Theron				PO. Box 683	De Aar	7000
WESSA NC	Suzanne Erasmus	538392717	0828497655	wessanc@yahoo.com	PO. Box 316	Kimberley	8300
	Willie Lubbe				PO. Box 42	De Aar	7000
EWT-Wildlife Energy Interaction Group (WEIG	Luke Strugnell	114861102	079 878 3741	www.ewt.org.za	Private Bag X11	Parkview	2122
Department of Tourism, Environment and Conservation Head Office – Kimberley	Mr Sibonelo Mbanjwa	(053) 807 4800	053) 8313530	dmoleko@half.ncape.gov.za	224 Du Toit Span Road, Kimberly	Kimberley	8300
Northern Cape Department of Agriculture, Land Reform and Rural Development	Mrs J. Maisela	(053) 838-9100 / 839 7800	(053) 832-4328 / 839 7827		162 George Street / 7-9 Elliot Street, Kimberley	Northern Cape	8300
De Aar Agri	Andre Theron			andret@mjvn.co.za	Posbus 117	De Aar	7000
	Arnold Pansi			taifun@telkomsa.net	Potties B&B, 30 Hoop Street	De Aar	7000

Contact person	Tel number	Fax number	Email	Postal Address	Town	Code
Nyiko Ngoveni	012 395 1694	012 320 7539	nngoveni@environment.gov.za	Private Bag x447	PRETORIA	0001
Ernest Kubayi	054 338 5800/ 082 888 3764	054 3340205	witc@dwa.gov.za	Private Bag X6101	KIMBERLEY	8300
Charlotte Kloppers	053 632 9100	053 631 0105	cklopper@emthanjeni.co.za	Voortrekker Street 45	DE AAR	7000
Thato Molese	053 631 0616	053 631 0343	tmolese@de.ncape.gov.za	Private Bag X1014	DE AAR	7000
Anneliza Collet	012 319 7508	012 - 329 5938	AnnelizaC@nda.agric.za	Private Bag X 120	PRETORIA	0001
Ntombi Yende	082 559 7289	053 631 0564	-	PO Box 28	DE AAR	7000
Kevin Leask	011 800 8111	086 668 4024	kevin.leask@eskom.co.za	For Attention: Kevin Leask (x5994) PO Box 1091	DE AAR	2000
L Jordan	053 631 0891	053 631 2529	pixley@telkomsa.net	Private bag X 1012	DE AAR	7000
Mariagrazia Galimberti	021 462 4502	021 462 4509	-	PO Box 4637	CAPE TOWN	8000
Provincial Manager		053 507 4000	ahall@ncpg.gov.za	Private Bag X5004	KIMBERLEY	8300

PROPOSED PHOTOVOLTAIC (SOLAR) ENERGY FACILITIES ON PAARDE VALLEY FARM AND BADENHORST DAM FARM NEAR DE AAR, NORTHERN CAPE
AND
PROPOSED WIND ENERGY FACILITIES (NORTH AND SOUTH) SITUATED ON THE EASTERN PLATEAU NEAR DE AAR, NORTHERN CAPE

PUBLIC PARTICIPATION PROCESS
DEA Ref. No.'s: Photovoltaic: 12/12/20/2499; 12/12/20/2500;
Wind: 12/12/20/2463/1; 12/12/20/2463/2
NEAS Ref. No.'s: Photovoltaic: DEAT/EIA/0000607/2011; DEAT/EIA/0000608/2011; Wind: DEAT/EIA/0000577/2011; DEAT/EIA/0000578/2011
ENVIRONMENTAL IMPACT ASSESSMENTPROCESSES

Availability of Draft Scoping Reports for Public Comment

Description of photovoltaic (PV) energy facilities near De Aar: Mulilo Renewable Energy (Pty) Ltd (Mulilo) proposes to construct two PV energy facilities to generate 75 – 150 MW and 100 – 135 MW each. The facilities will each cover an approximate area of 300 ha and would feed into the Eskom grid. Associated infrastructure would include, amongst others, fences, road upgrades, transmission lines and possibly a water pipeline.

Location of PV facilities near De Aar: Paarde Valley farm No. 145 (Portion 2) and Badenhorst Dam farm No. 180 (Portion 1)

Description of wind energy facilities near De Aar: Mulilo proposes to construct two 150-200 MW wind energy facilities on the Eastern Plateau approximately 20 km east of De Aar. The northern project would potentially consist of 145 wind turbines and the southern project, 105 wind turbines. Electricity would be evacuated via onsite connections to three existing transmission lines crossing the site and linking into the Hydra substation near De Aar. Associated infrastructure would include, amongst others, access roads, transmission lines, onsite substations and possibly a water pipeline.

Location of wind facilities:
Northern site:
Pienaarskloof (Farm No. 136 Portions 1 and 6), Brack Fountain (Farm No. 148 Portions 2, 4 and Remainder), Vendussie Kuil (Farm No. 165 Portions 1 and 7), Washbank (Farm No. 149 Portion 1), Enkeldebult (Farm No. 150 Portion 4 and Remainder) and Zwagershoek (Farm No. 151 Portion 1 and 2)
Southern site:
Knapdaar (Farm No. 1 Portion 8) Slingershoek (Farm No. 2 Portion 2 and Farm No. 4 Portion 2 and Remainder), Maatjiesfountain (Farm No. 5 Portion 1) and Vendussie Kuil (Farm No. 165 Portions 2, 11 and Remainder)

The proposed PV energyfacilities trigger the following listed activities in terms of National Environment Management Act (NEMA) (No. 107 of 1998, Government Notice (GN) No. 544 Activity No.10; GN No. 545 Activity No. 1 and GN No. 546 Activity No. 14). As such authorisation from the competent environmental authority, namely the Department of Environmental Affairs (DEA), via the Environmental Impact Assessment (EIA) process (GN No. R543 of 18 June 2010) is necessary ***(please note that two separate EIAs will be undertaken)***.

The proposed wind energy facilities trigger the following activities in terms of NEMA (GN No. 544 Activity No.10 & 11; GN No. 545 Activity No. 1 and GN No. 546 Activity No. 14). As such authorisation from DEA, via the EIA process (GN No. R543 of 18 June 2010) is necessary ***(please note that two separate projects will be assessed in one EIA report)***.

Aurecon South Africa (Pty) Ltd (Aurecon) has been appointed by Mulilo to undertake the above-mentioned EIA processes. Notice is hereby given of the commencement of a public participation process in terms of the NEMA EIA Regulations 2010.

The applications for the above-mentioned project have been submitted to the competent authority (DEA) in terms of these Regulations.

The Draft Scoping Reports of the above-mentioned projects have been lodged at the De Aar Public Library (Station Street), the Emthanjeni Municipal buildings (Voortrekker Street) (contact person: Mrs C. Kloppers) and the reports are also available for download from Aurecon's website (**http://www.aurecongroup.com-** *indicate "Current Location" as "South Africa" and click on the "**Public Participation**" link)* from **8 November 2011 till 5 January 2012.** Register as an Interested and/or Affected Party, obtain more information or comment on the proposed projects or reports by contacting Aurecon by telephone, email, fax or post by **5 January 2012**.

EIA project team	PV energy facilities- De Aar Karen van der Westhuizen / Karen Versfeld	Wind energy facilities- De Aar Simon Clark / Louise Corbett
Tel	021 526 6044	(021) 526 6034
Fax	(021) 526 9500	(021) 526 9500
Email	karen.vanderwesthuizen@aurecongroup.com	simon.clark@aurecongroup.com
Postal address	PO Box 494, Cape Town, 8000	PO Box 494, Cape Town, 8000

Date of advert: 04 November 2010

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MULILO RENEWABLE ENERGY

BEOOGDE FOTOVOLTAÏESE (SON) KRAG AANLEGTE VIR PAARDE VALLEY PLAAS EN BADENHORST DAM PLAAS NABY DE AAR, NOORD-KAAP
EN
BEOOGDE WIND KRAG AANLEGTE (NOORD EN SUID) VAN DIE OOS PLATO NABY DE AAR, NOORD-KAAP

PROSES VAN OPENBARE DEELNAME
DOS Verwyssings Nr's: Fotovoltaïse: 12/12/20/2499; 12/12/20/2500; Wind:12/12/20/2463/1; 12/12/20/2463/2
NEAS Verwyssings. Nr's: Fotovoltaïse: DEAT/EIA/0000607/2011; DEAT/EIA/0000608/2011; Wind: DEAT/EIA/0000577/2011; DEAT/EIA/0000578/2011

OMGEWINGS INVLOED BEPALINGS PROSES (OIB)
Beskikbaarheid van die Konsep Omvangsbepalingsverslag vir Publieke Kommentaar

Beskrywing van fotovoltaïese (FV) energie fasiliteite naby De Aar: Mulilo Renewable Energy (Pty) Ltd (Mulilo) beoog om twee fotovoltaïese son krag aanlegte op te rig met 'n kapasiteit van 75 – 150 MW en 100 – 135 MW elk. Die voorgestelde aanlegte sal elk 'n area van ongeveer 300 ha beslaan en die elektrisiteit sal inskakel by die Nasionale kragnetwerk van Eskom. Bykomende infrastruktuur sluit in die omheining van die aanlegte, opgradering van paaie, konstruksie van transmissielyne asook 'n moontlike waterpyplyn.

Ligging van fotovoltaïese (FV) energie fasiliteite naby De Aar: Paarde Valley plaas Nr. 145 (Gedeelte 2) en Badenhorst Dam Plaas Nr. 180 (Gedeelte 1).

Beskrywing van wind energy fasiliteite naby De Aar: Mulilo beoog om twee 150 to 200 MW wind energie aanlegte opterig op die Oos Plato, ongeveer 20 km oos van De Aar. Die noordelike gedeelte sal uit uit ongeveer 145 wind turbines bestaan en die suidelike gedeelte uit 105 wind turbines. Die krag wat gegenereer word sal deel vorm van Eskom se nasionale kapasiteit deur middel van twee bestaande transmissielyne wat sal aansluit by Hydra sub-stasie, naby De Aar. Bykomende infrastruktuur sluit in paaie, transmissielyne, 'n substasie asook 'n moontlike waterpyplyn.

Ligging van wind fasiliteite:
Noordelike gedeelte:
Pienaarskloof (Plaas Nr. 136 Gedeeltes 1 en 6), Brack Fountain (Plaas Nr. 148 Gedeeltes 2, 4 en Restant), Vendussie Kuil (Plaas Nr. 165 Gedeeltes 1 en 7), Washbank (Plaas Nr. 149 Gedeelte 1), Enkeldebult (Plaas Nr. 150 Gedeelte 4 en Restant) en Zwagershoek (Plaas Nr. 151 Gedeelte 1 en 2)
Suidelike gedeelte:
Knapdaar (Plaas Nr. 1 Gedeelte 8) Slingershoek (Plaas Nr. 2 Gedeelte 2 en Plaas Nr. 4 Gedeelte 2 en Restant), Maatjiesfountain (Plaas Nr. 5 Gedeelte 1) en Vendussie Kuil (Plaas Nr. 165 Gedeeltes 2, 11 en Restant).

Die beoogde FV energie projekte het die volgende gelyste aktiwiteite in terme van **WNOB (Nr. 107 van 1998)** tot betrekking: GN 544 Aktiwiteit Nr.10; GN 545 Aktiwiteit Nr.1 en GN 546 Aktiwiteit Nr. 14. As sulks is goedkeuring van die bekwame owerheid, naamlik die Department van Omgewingssake (DOS), in terme van die Omgewingsinvloedbepalingsproses (GN Nr. R543 van 18 Junie 2010) ***(Neem asseblief kennis dat twee apparte Omgewingsinvloedbepaling studies onderneem sal word).***

Die beoogde windkrag projek het die volgende gelyste aktiwiteite in terme van **WNOB (Nr. 107 van 1998)** tot betrekking: GN 544 Aktiwiteit Nr.10&11, GN 545 Aktiwiteit Nr. 1 en GN 546 Aktiwiteit Nr. 14. As sulks is goedkeuring van die bekwame owerheid, naamlik die Department van Omgewingssake (DOS), in terme van die Omgewingsinvloedbepalingsproses (GN Nr. R543 van 18 Junie 2010) ***(Neem asseblief kennis dat twee apparte Omgewingsinvloedbepaling studies onderneem sal word, maar beskryf sal word in een verslag).***

Aurecon South Africa (Pty) Ltd (Aurecon) is aangestel deur Mulilo om die bo-genoemde OIB proses te hanteer. Kennis word hiermee gegee van die begin van die publieke deelname proses in terme van die WNOB OIB Regulasies 2010. Die aansoek is ingedien by die bekwame owerheid (DOS) in terme van hierdie Regulasies.

Die Konsep Omvangsbepalingsverslag (OIBV) is beskikbaar in die Openbare Biblioteek te De Aar; sowel as die plaaslike Emthanjeni munisipale kantore in Voortrekker Straat, De Aar (Kontak persoon: Mev. C. Kloppers). Die dokument kan ook vanaf Aurecon se webwerf afgelaai word (**http://www.aurecongroup.com** – dui "***Current Location***" as Suid Afrika en kliek op '***Public participation***') vanaf **8 November 2011 tot die 5 Januarie 2012.** Kontak Aurecon per faks, epos of telefonies teen 5 Januarie, 2011 om te registreer as 'n Belanghebende en of Geaffekteerde Party:

OIB projek span	FV aanlegte- De Aar Karen van der Westhuizen/ Karen Versfeld	Wind krag aanlegte- De Aar Simon Clark/ Louise Corbett
Tel	021 526 6044	(021) 526 6034
Faks	(021) 526 9500	(021) 526 9500
Epos	karen.vanderwesthuizen@aurecongroup.com	simon.clark@aurecongroup.com
Pos addres	Posbus 494, Kaapstad, 8000	Posbus 494, Kaapstad, 8000

Date of advert: 04 November 2010

aurecon

MULILO RENEWABLE ENERGY

BEOOGDE FOTOVOLTAÏESE (SON) KRAG AANLEGTE VIR PLAAS PAARDE VALLEY NABY DE AAR, NOORD-KAAP

OMGEWINGSINVLOEDBEPALINGSPROSES (OIB-PROSES)

DOS OIB-aansoek Verwyssings nr: 12/12/20/2500 en NEAS Verwyssings Nr.: DEAT/EIA/0000607/2011

PROSES VAN OPENBARE DEELNAME

Beskikbaarheid van die Konsep Omvangsbepalingsverslag

Beskrywing van fotovoltaïese (FV) energie fasiliteite naby De Aar: Mulilo Renewable Energy (Pty) Ltd (Mulilo) beoog om 'n fotovoltaïese son krag aanleg op te rig met 'n kapasiteit van 75-150 MW. Die voorgestelde aanleg sal 'n area van ongeveer 225 ha tot 450 ha benodig en die elektrisiteit sal inskakel by die Nasionale kragnetwerk van Eskom. Bykomende infrastruktuur sluit in die omheining van die aanlegte, opgradering van paaie, konstruksie van transmissielyne asook 'n moontlike waterpyplyn.

Ligging: Paarde Valley plaas Nr. 145 (Gedeelte 2)

Die beoogde FV energie projek het die volgende gelyste aktiwiteite in terme van **WNOB (Nr. 107 van 1998)** tot betrekking: GN 544 Aktiwiteit Nr.10; GN 545 Aktiwiteit Nr.1 en GN 546 Aktiwiteit Nr. 14. As sulks is goedkeuring van die bekwame owerheid, naamlik die Department van Omgewingssake (DOS), in terme van die Omgewingsinvloedbepalingsproses (GN Nr. R543 van 18 Junie 2010)

Aurecon South Africa (Pty) Ltd (Aurecon) is aangestel deur Mulilo om die bo-genoemde OIB proses te hanteer. Kennis word hiermee gegee van die begin van die publieke deelname proses in terme van die WNOB OIB Regulasies 2010. Die aansoek is ingedien by die bekwame owerheid (DOS) in terme van hierdie Regulasies.e

Die aansoek vir die bo-genoemde projek is ingedien by die bekwame owerheid (DOS) in terme van die Regulasies.

Die Konsep Omvangsbepalingsverslag (OIBV) is beskikbaar in die Openbare Biblioteek te De Aar; sowel as die plaaslike Emthanjeni munisipale kantore in Voortrekker Straat, De Aar (Kontak persoon: Mev. C. Kloppers). Die dokument kan ook vanaf Aurecon se webwerf afgelaai word (**http://www.aurecongroup.com** – dui "***Current Location***" as Suid Afrika en kliek op '***Public participation***') vanaf **8 November 2011 tot 5 Januarie 2012.** Kontak Aurecon per faks, epos of telefonies teen 5 Januarie, 2012 om te registreer as 'n Belanghebende en of Geaffekteerde Party:

OIB projek span: Louise Corbett, Karen van der Westhuizen en Karen Versfeld

Tel: 021 526 6044/ 5737
Faks: (021) 526 9500
E-pos: karen.vanderwesthuizen@aurecongroup.com of karen.versfeld@aurecongroup.com
Pos addres: Posbus 494, Kaapstad, 8000

MULILO RENEWABLE ENERGY

aurecon

PROPOSED PHOTOVOLTAIC (SOLAR) ENERGY FACILITIES ON PAARDE VALLEY FARM NEAR DE AAR, NORTHERN CAPE

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) PROCESS

DEA Ref. No.: 12/12/20/2500 and NEAS Ref No.: DEAT/EIA/0000607/2011

PUBLIC PARTICIPATION PROCESS

Availability of the Draft Scoping Report for Public Review

Description of photovoltaic (PV) energy facilities near De Aar: Mulilo Renewable Energy (Pty) Ltd (Mulilo) proposes to construct a PV energy facility to generate 75 – 150 MW. The facility proposed would cover an area of 225 ha to 450 ha and would feed into the Eskom grid. Associated infrastructure would include, amongst others, fences, road upgrades, transmission lines and possibly a water pipeline.

Location: Paarde Valley farm No. 145 (Portion 2)

The proposed PV energy facility triggers the following listed activities in terms of National Environment Management Act (NEMA) (No. 107 of 1998, Government Notice (GN) No. 544 Activity No.10; GN No. 545 Activity No. 1 and GN No. 546 Activity No. 14. As such authorisation from the competent environmental authority, namely the Department of Environmental Affairs (DEA), via the Environmental Impact Assessment (EIA) process (GN No. R543 of 18 June 2010) is necessary.

Aurecon South Africa (Pty) Ltd (Aurecon) has been appointed by Mulilo to undertake the above-mentioned EIA process. Notice is hereby given of the commencement of a public participation process in terms of the NEMA EIA Regulations 2010.

The application for the above-mentioned project has been submitted to the competent authority (DEA) in terms of these Regulations.

The Draft Scoping Reports for the above-mentioned project has been lodged at the De Aar Public Library (Station Street), the Emthanjeni Municipal buildings (Voortrekker Street) (contact person: Mrs C. Kloppers) and the reports are also available for download from Aurecon's website (**http://www.aurecongroup.com**-*indicate "Current Location" as "South Africa" and click on the "**Public Participation**")* from **8 November 2011 till 5 January 2012.** Register as an Interested and/or Affected Party, obtain more information or comment on the proposed projects or reports by contacting Aurecon by telephone, email, fax or post by **5 January 2012.**

EIA project team: Louise Corbett, Karen van der Westhuizen and Karen Versfeld

Tel: 021 526 6044/ 5737
Fax: (021) 526 9500
Email: karen.vanderwesthuizen@aurecongroup.com or karen.versfeld@aurecongroup.com
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aurecon

November 2011

Email: karen.versfeld@aurecongroup.com

Dear Sir/ Madam

EIA PROCESS FOR THE PROPOSED PHOTOVOLTAIC (SOLAR) ENERGY PLANT ON BADENHORST DAM FARM AND PAARDE VALLEY FARM NEAR DE AAR, NORTHERN CAPE (DEA REF. NO: 12/12/20/2499 & 12/12/20/2500; NEAS REF NO: DEAT/EIA/0000607/2011 & DEAT/EIA/0000608/2011)

AVAILABILITY OF THE DRAFT SCOPING REPORT FOR COMMENT

This letter serves to notify you of the availability of the Draft Scoping Report (DSR) for the above-mentioned project and to invite you to raise related comments or concerns.

The DSR will be available from **8 November 2011** till **5 January 2012** for review and comment at the De Aar Public Library (Station Street), the Emthanjeni municipal offices in Vootrekker Road and accessible form the Aurecon website (www.aurecongroup.com – please follow the "*public participation*"- link). Please find attached the executive summary for your information. The Executive Summary and I&AP letter are available in English and Afrikaans on request- please contact Aurecon should you require the documentation in another language.

You are also invited to attend a Focus Group Meeting where the findings of the DSR will be presented and discussed. The meeting will be held on **Wednesday, 30 November 2011** from **16h00- 18h00** at the **Emthanjeni Civic Centre, De Aar**. Should you wish to attend please RSVP for further details.

If you would like to obtain more information, submit any comments or register as an I&AP for this process please contact **Karen Versfeld of Karen van der Westhuizen** of Aurecon on before **5 January 2012**.

EIA project team	Karen van der Westhuizen	Karen Versfeld
Telephone number:	021 526 6044	021 526 5737
Facsimile number:	086 535 9856	086 535 9856
Email address:	karen.vanderwesthuizen@aurecongroup.com	karen.versfeld@aurecongroup.com
Postal address:	PO Box 494, Cape Town, 8000	PO Box 494, Cape Town, 8000

Yours sincerely
Aurecon

KAREN VERSFELD *(Can. Nat. Sci.)*
EAP: Environmental and Advisory

KAREN SHIPPEY *(Pr. Sci. Nat. EAPSA Certified)*
Tegniese Direkteur: Environmental and Advisory

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Email: karen.versfeld@aurecongroup.com

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Telephone number:	021 526 6044	021 526 5737
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Email address:	karen.vanderwesthuizen@aurecongroup.com	karen.versfeld@aurecongroup.com
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Yours sincerely
Aurecon

KAREN VERSFELD *(Can. Nat. Sci.)*
EAP: Environmental & Advisory Services

KAREN SHIPPEY *(Pr. Sci. Nat. EAPSA Certified)*
Technical Director: Environmental & Advisory Services

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08 November 2011

E-pos: karen.versfeld@aurecongroup.com

Geagte Heer / Dame

BEOOGDE FOTOVOLTAÏESE (SON) KRAG AANLEGTE VIR PAARDE VALLEY PLAAS EN BADENHORST DAM PLAAS NABY DE AAR, NOORD-KAAP
(DOS VERWYSSING NRS.: 12/12/20/2499 en 12/12/20/2500):
NEAS VERWYSISNGS NRS: DEAT/EIA/0000607/2011 EN DEAT/EIA/0000608/2011)

BESKIKBAARHEID VAN DIE KONSEP OMVANGBEPALINGSVERSLAG VIR KOMMENTAAR

Met hierdie brief word u in kennis gestel van die beskikbaarheid van die Konsep Omvangbepalingsverslag (OBV) vir bogenoemde projekte, en word u uitgenooi om enige bekommernisse of steun en kommentaar te lewer.

Die konsep OBV is beskikbaar vanaf **8 Novemeber 2011 tot 5 Januarie 2012** vir oorsig en kommentaar by die Openbare Biblioteek in De Aar (Stasie straat 45), by die Emthanjeni munisipale kantore geleë in Voortrekker straat en op Aurecon se webblad (www.aurecongroup.com - volg die "*public participation*"-skakel). 'n Uitvoerende opsomming van die verslag is vir u gerief hierby aangeheg in beide Afrikaans en Engels.

U word ook uitgenooi om 'n Fokus Groep vergadering by te woon waar die bevindinge van die konsep OBV aangebied en bespreek sal word. Dit sal plaas vind op **Woensdag, 30 November 2011** vanaf **16h00-18h00** in die **Emthanjeni Civic Centre, De Aar**. RSVP asseblief vir meer inligting, indien u die vergadering wil bywoon.

Treë asseblief voor **5 Januarie 2012** met **Karen Versfeld** of **Karen van der Westhuizen** van Aurecon in verbinding indien u enige verdere inligting verlang, enige kommentaar wil lewer, of as 'n Belanghebbende en Geaffekteerde Party (B&GP) tot die proses wil registreer:

OIS projek span	Karen van der Westhuizen	Karen Versfeld
Telefoon nommer:	021 526 6044	021 526 5737
Faks nommer:	086 535 9856	086 535 9856
Epos addres:	karen.vanderwesthuizen@aurecongroup.com	karen.versfeld@aurecongroup.com
Pos addres:	Posbus 494, Kaapstad, 8000	Posbus 494, Kaapstad, 8000

Die uwe
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KAREN VERSFELD *(Can. Nat. Sci.)*
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KAREN SHIPPEY *(Pr. Sci. Nat. EAPSA Certified)*
Tegniese Direkteur: Omgewings& Raadgewende Dienste

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08 November 2011

E-pos: karen.versfeld@aurecongroup.com

Geagte Heer / Dame

BEOOGDE FOTOVOLTAÏESE (SON) KRAG AANLEGTE VIR PAARDE VALLEY PLAAS EN BADENHORST DAM PLAAS NABY DE AAR, NOORD-KAAP
(DOS VERWYSSING NRS.: 12/12/20/2499 en 12/12/20/2500):
NEAS VERWYSISNGS NRS: DEAT/EIA/0000607/2011 EN DEAT/EIA/0000608/2011)

BESKIKBAARHEID VAN DIE KONSEP OMVANGBEPALINGSVERSLAG VIR KOMMENTAAR

Met hierdie brief word u in kennis gestel van die beskikbaarheid van die Konsep Omvangbepalingsverslag (OBV) vir bogenoemde projekte, en word u uitgenooi om enige bekommernisse of steun en kommentaar te lewer.

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4 November 2011

Email: karen.versfeld@aurecongroup.com

Department of Environmental Affairs
Fedsure Building
315 Pretorius Street
Pretoria
001

Attention: Nyiko Ngoveni

Dear Ms Ngoveni

EIA PROCESS FOR THE PROPOSED PHOTOVOLTAIC (SOLAR) ENERGY PLANT ON BADENHORST DAM FARM NEAR DE AAR, NORTHERN CAPE (DEA REF. NO: 12/12/20/2499; NEAS REF NO.: DEAT/EIA/0000608/2011)

EIA PROCESS FOR THE PROPOSED PHOTOVOLTAIC (SOLAR) ENERGY PLANT ON PAARDE VALLEY FARM NEAR DE AAR, NORTHERN CAPE (DEA REF. NO: 12/12/20/2500; NEAS REF NO: DEAT/EIA/0000607/2011)

The Department of Environmental Affairs (DEA) previous correspondence, dated 24 October 2011, providing the reference numbers for the above-mentioned projects has reference. The purpose of this letter is to notify DEA of the comment period on the Draft Scoping Reports (DSRs) and provide to a copy of the report,

The DSRs for the above-mentioned projects has been compiled and will be made available for public review and comment on 8 November 2011. Please note that the site for the solar plant proposed for DEA REF. NO: 12/12/20/2499 is still the same, but the name has changed from Vetlaagte Farm to Badenhorst Dam farm.

1. PUBLIC PARTICIPATION PROCESS TO DATE

The public participation process undertaken for the projects entailed the following:

- Advertising the availability of the DSRs in *The Echo* and *Volksblad* on 4 November, 2011.
- Written notification (email/ sms/ post/ fax) to Interested and Affected Parties (I&APs) regarding the availability of the reports and 40 day comment period from 8 November 2011 to 5 January 2012.
- Placement of posters/ site notices in the Emthanjeni municipal offices, as well as at the entrance gate of each farm on 8 November 2011.

- Lodging the reports in the De Aar Public Library and the Emthanjeni Municipality municipal offices from 8 November 2011. The reports can also be downloaded from the Aurecon website (www.aurecongroup.com- change "Current Location" to South African and follow the public participation link). I&APs have been given 40 days, i.e. until **5 January 2012**, to submit written comments to Aurecon.

Copies of the DSRs have also been hand delivered/ posted to the relevant state departments that administer laws relating to matters affecting the environment. Please also find enclosed a copy of the DSR for your review.

2. SUBMISSION OF DRAFT REPORT TO THE RELEVANT STATE DEPARTMENTS

Please find below the details of the relevant state departments that have been contacted and provided with a copy (hard or electronic) of the DSRs for the aforementioned project.

Authority	Contact person	Fax number	Hard or soft copy
Department of Water Affairs (DWA): Deputy Director Lower Orange WMA	Christine White (seketaresse) vir aandag: Ernest Kubayi	054 3340205	One hard copy
Emthanjeni Local Municipality	Charlotte Kloppers	053 631 0105	One hard copy
Northern Cape (Department of Environmental Affairs and Nature Conservation) DEANC	Thato Molese	053 631 0343	One hard copy One soft copy
National Department of Agriculture, Forestry and Fisheries: Directorate: Land Use and Soil Management	Anneliza Collet	012 329 5938	One hard copy
Department of Agriculture	Ntombi Yende	053 631 0564	One hard copy One soft copy
Eskom	Kevin Leask	086 668 4024	One hard copy Two soft copies

Northern Cape Provincial Heritage (Boswa ya Kapa Bokone)	Provincial Manager	053 507 4000	One hard copy
South African Heritage Resources Agency (SAHRA)	Dr Mariagrazia Galimberti	021 462 4509	One hard copy
Pixley ka Seme District Municipality	L Jordan	053 631 2529	One soft copy

In accordance with Sections 24O (2) and (3) of the National Environmental Management Act (No. 107 of 1998) (NEMA) (as amended), please notify the above mentioned state departments, at your earliest convenience of the commencement date of the 40 day comment period, which ends on **5 January 2012**.

4. THE WAY FORWARD

Once comments have been received and incorporated into the Final Scoping Report, the report will be submitted to DEA for review and decision making purposes, after 5 January 2012.

We look forward to your confirmation that the above organs of state have been notified of their obligation under Section 24O. Should you require any further information or have any queries please contact the undersigned.

Yours sincerely
AURECON

pp

KAREN VERSFELD *(Can. Nat. Sci.)*
Practitioner: Environmental & Advisory Services

KAREN SHIPPEY *(Pr. Sci. Nat. EAPSA Certified)*
Technical Director: Environmental & Advisory Services

cc
Mr Warren Morse, Mulilo Renewable Energy (Pty) Ltd

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November 2011

Email: karen.versfeld@aurecongroup.com

De Aar Public Library
45 Voortrekker Road
De Aar
7000

Dear Martha Gweyi

EIA PROCESS FOR THE PROPOSED PHOTOVOLTAIC (SOLAR) ENERGY PLANT ON BADENHORST DAM FARM AND PAARDE VALLEY FARM NEAR DE AAR, NORTHERN CAPE (DEA REF. NO: 12/12/20/2499 AND 12/12/20/2500; NEAS REF. NO: DEAT/EIA/0000607/2011 & DEAT/EIA/0000608/2011)

AVAILABILITY OF THE DRAFT SCOPING REPORT FOR COMMENT

Please find the Draft Scoping Report (DSR) for the above-mentioned project for placement in the De Aar Public Library from the **8 November 2011** till **5 January 2011** herewith. This report is intended for review by interested members of the public. Could you please ensure that the public have access to the report, and that it is not removed from the De Aar Public Library premises.

Please stamp and sign this letter and fax or email it back to Aurecon as proof of placement. Contact details:

EIA project team	Karen van der Westhuizen	Karen Versfeld
Telephone number:	021 526 6044	021 526 5737
Facsimile number:	086 535 9856	086 535 9856
Email address:	karen.vanderwesthuizen@aurecongroup.com	karen.versfeld@aurecongroup.com
Postal address:	PO Box 494, Cape Town, 8000	PO Box 494, Cape Town, 8000

....

De Aar Public Library (Stamp or Signature) **Date**

Please do not hesitate to contact us should you have any questions.

Yours sincerely
Aurecon

KAREN VERSFELD *(Can. Nat. Sci.)*
Environmental Practitioner:
Environmental&Advisory Services

KAREN SHIPPEY *(Pr. Sci. Nat. EAPSA Certified)*
Technical Director: Environmental & Advisory Services

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4 November 2011

Email: karen.versfeld@aurecongroup.com

National Department of Agriculture, Forestry and Fisheries: Directorate: Land Use and Soil Management
Cnr of Annie Botha & Union Streets
Delpen Building (Office 282)
Riviera
Pretoria
7001

Tel: 012 319 7508

Attention: Mrs Anneliza Collet

Dear Mrs Collet

EIA PROCESS FOR THE PROPOSED PHOTOVOLTAIC (SOLAR) ENERGY PLANT ON BADENHORST DAM FARM NEAR DE AAR, NORTHERN CAPE (DEA REF. NO: 12/12/20/2499; NEAS REF NO.: DEAT/EIA/0000608/2011)
AND
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Mulilo Renewable Energy (Pty) Ltd aims to construct photovoltaic solar energy facilities near De Aar and you have been identified as a relevant commenting authority.The Draft Scoping Reports (DSR) for the above-mentioned projects has been compiled and will be made available for public comment on 8 November 2011. Please find attached one hard copy for your review. We request that you supply us with the Departments comments before the 5 January 2012.

Should you require any further information or have any queries please contact the undersigned.

Yours sincerely
AURECON

KAREN VAN DER WESTHUIZEN *(Cert. Nat. Sci.)*
Practitioner: Environmental & Advisory Services

KAREN VERSFELD *(Can. Nat. Sci.)*
Practitioner: Environmental & Advisory Services

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4 November 2011

Email: karen.versfeld@aurecongroup.com

Northern Cape (Department of Environmental Affairs and Nature Conservation) DEANC
Church Street 47
DE AAR
7000
Tel: 053 631 0616

Attention: Thato Molese

Dear Mr Molese

EIA PROCESS FOR THE PROPOSED PHOTOVOLTAIC (SOLAR) ENERGY PLANT ON BADENHORST DAM FARM NEAR DE AAR, NORTHERN CAPE (DEA REF. NO: 12/12/20/2499; NEAS REF NO.: DEAT/EIA/0000608/2011)
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4 November 2011

Email: karen.versfeld@aurecongroup.com

Emthanjeni Local Municipality
45 Voortrekker Road
De Aar
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Tel: 053 632 9100

Attention: Mrs C. Kloppers

Dear Mrs Kloppers

EIA PROCESS FOR THE PROPOSED PHOTOVOLTAIC (SOLAR) ENERGY PLANT ON BADENHORST DAM FARM NEAR DE AAR, NORTHERN CAPE (DEA REF. NO: 12/12/20/2499; NEAS REF NO.: DEAT/EIA/0000608/2011)
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EIA PROCESS FOR THE PROPOSED PHOTOVOLTAIC (SOLAR) ENERGY PLANT ON PAARDE VALLEY FARM NEAR DE AAR, NORTHERN CAPE (DEA REF. NO: 12/12/20/2500; NEAS REF NO: DEAT/EIA/0000607/2011)

The Draft Scoping Reports (DSR) for the above-mentioned projects has been compiled and will be made available for public comment on 8 November 2011 till 5 January 2012.

Please find attached one hard copy for your review. This report is also intended for review by interested members of the public. Could you please ensure that the public have access to the report, and that it is not removed from the Emthanjeni municipal buildings until the Environmental Impact Assessment process is finished. Should the Emthanjeni Municipality wish to submit comments on the DSR, please do so before 5 of January 2012.

Should you require any further information or have any queries please contact the undersigned.

Yours sincerely
AURECON

KAREN VAN DER WESTHUIZEN *(Cert. Nat. Sci.)*
Practitioner: Environmental & Advisory Services

KAREN VERSFELD *(Can. Nat. Sci.)*
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4 November 2011

Email: karen.versfeld@aurecongroup.com

Department of Water Affairs: Deputy Director Lower Orange Water Management Area
Louisevale Road
Upington
8800
Tel: 054 338 5800

Attention: Ernest Kubayi

Dear Mr Kubayi

EIA PROCESS FOR THE PROPOSED PHOTOVOLTAIC (SOLAR) ENERGY PLANT ON BADENHORST DAM FARM NEAR DE AAR, NORTHERN CAPE (DEA REF. NO: 12/12/20/2499; NEAS REF NO.: DEAT/EIA/0000608/2011)
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Should you require any further information or have any queries please contact the undersigned.

Yours sincerely
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4 November 2011

Email: karen.versfeld@aurecongroup.com

Eskom Holdings Limited
Megawatt Park, D1 Z38
Johannesburg
2000
Tel: 011 800 8111

Attention: Kevin Leask

Dear Mr Leask

EIA PROCESS FOR THE PROPOSED PHOTOVOLTAIC (SOLAR) ENERGY PLANT ON BADENHORST DAM FARM NEAR DE AAR, NORTHERN CAPE (DEA REF. NO: 12/12/20/2499; NEAS REF NO.: DEAT/EIA/0000608/2011)
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Should you require any further information or have any queries please contact the undersigned.

Yours sincerely
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4 November 2011

Email: karen.versfeld@aurecongroup.com

Department of Agriculture
Protea Hoff Building
Corner of Station Road and Alida Street
DE AAR
7000
Tel: 082 559 7289

Attention: Mrs Ntombi Yende

Dear Mrs Yende

EIA PROCESS FOR THE PROPOSED PHOTOVOLTAIC (SOLAR) ENERGY PLANT ON BADENHORST DAM FARM NEAR DE AAR, NORTHERN CAPE (DEA REF. NO: 12/12/20/2499; NEAS REF NO.: DEAT/EIA/0000608/2011)
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Should you require any further information or have any queries please contact the undersigned.

Yours sincerely
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4 November 2011

Email: karen.versfeld@aurecongroup.com

Pixley ka Seme District Municipality
Corner of Laingsnek and Joubert Street
VOLKSRUST
2470
Tel: 053 631 0891

Attention: Mrs L Jordan

Dear Mrs L Jordan

EIA PROCESS FOR THE PROPOSED PHOTOVOLTAIC (SOLAR) ENERGY PLANT ON BADENHORST DAM FARM NEAR DE AAR, NORTHERN CAPE (DEA REF. NO: 12/12/20/2499; NEAS REF NO.: DEAT/EIA/0000608/2011)
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Should you require any further information or have any queries please contact the undersigned.

Yours sincerely
AURECON

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4 November 2011

Email: karen.versfeld@aurecongroup.com

Northern Cape Provincial Heritage (Boswa ya Kapa Bokone)
Provincial Manager
22 Abattoir Road
Ashburnham
Kimberley
8301
Tel: 053 807 4710

Attention: Provincial Manager

Dear Provincial Manager

EIA PROCESS FOR THE PROPOSED PHOTOVOLTAIC (SOLAR) ENERGY PLANT ON BADENHORST DAM FARM NEAR DE AAR, NORTHERN CAPE (DEA REF. NO: 12/12/20/2499; NEAS REF NO.: DEAT/EIA/0000608/2011)
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4 November 2011

Email: karen.versfeld@aurecongroup.com

South African Heritage Resources Act (SAHRA)
111 Harrington Street
Cape Town
8001
Tel: 021 462 4502

Attention: Mariagrazia Galimberti

Dear M Galimberti

EIA PROCESS FOR THE PROPOSED PHOTOVOLTAIC (SOLAR) ENERGY PLANT ON BADENHORST DAM FARM NEAR DE AAR, NORTHERN CAPE (DEA REF. NO: 12/12/20/2499; NEAS REF NO.: DEAT/EIA/0000608/2011)
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