

# ENVIRONMENTAL IMPACT ASSESSMENT: PROPOSED PV2-PV11 PHOTOVOLTAIC ENERGY PLANTS ON FARM HOEKPLAAS NEAR COPPERTON, NORTHERN CAPE



APRIL 2013



PLANT	DEA REF. NO	NEAS REF. NO	PLANT	DEA REF. NO	NEAS REF. NO
PV2	14/12/16/3/3/2/493	DEA/EIA/0001754/2013	PV7	14/12/16/3/3/2/498	DEA/EIA/0001759/2013
PV3	14/12/16/3/3/2/494	DEA/EIA/0001755/2013	PV8	14/12/16/3/3/2/499	DEA/EIA/0001760/2013
PV4	14/12/16/3/3/2/495	DEA/EIA/0001756/2013	PV9	14/12/16/3/3/2/500	DEA/EIA/0001761/2013
PV5	14/12/16/3/3/2/496	DEA/EIA/0001757/2013	PV10	14/12/16/3/3/2/501	DEA/EIA/0001762/2013
PV6	14/12/16/3/3/2/497	DEA/EIA/0001758/2013	PV11	14/12/16/3/3/2/502	DEA/EIA/0001763/2013

## EXECUTIVE SUMMARY: SCOPING REPORT

### Background

Mulilo Renewable Energy (Pty) Ltd (Mulilo) proposes to construct 10 additional photovoltaic (PV) solar energy plants on a farm, near Copperton in the Northern Cape. Aurecon South Africa (Pty) Ltd (Aurecon) has been appointed to undertake the requisite environmental process as required in terms of the National Environmental Management Act (No. 107 of 1998) (NEMA), as amended, on behalf of Mulilo.

The proposed projects would take place on the farm Hoekplaas (Remainder of Farm No. 146) near Copperton in the Northern Cape (see **Figure 1**). The site lies approximately 7.8 km to the south of Copperton and borders to the Kronos substation. The farm is approximately 5 014 ha in size.

### Proposed project

Mulilo proposes to construct 10 additional PV solar energy plants of 75 MW AC each (preferred alternative). Alternatively three PV plants with generation capacities of 225 MW AC (Alternative PV2), 290 MW AC (Alternative PV3) and 500 MW AC (Alternative PV4) are proposed.

Each of the proposed PV plants would consist of the following:

- **Solar energy plant:** A photovoltaic component comprising of numerous arrays of PV panels and associated support infrastructure to generate up to 75 MW AC per plant, through the photovoltaic effect.
- **Transmission lines:** 132 kV overhead transmission lines to connect each facility to the central onsite substation or an existing Eskom substation (i.e. Kronos or Cuprum).
- **Substations:** An onsite 132 kV, 3 bay substation.
- **Boundary fence:** Each 75 MW AC facility will have an electrical fence for safety and security reasons.

### Purpose of this document

This document provides a summary of the Draft Scoping Report (DSR) and Plan of Study for EIA for the proposed PV plants on Hoekplaas near Copperton, Northern Cape. It provides a brief background and overview of the proposed projects, 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.

You are invited to comment on the DSR for the proposed developments. The DSR has been lodged at the Prieska (Elizabeth Vermeulen) Public Library, Ietzniet Guest House in Copperton and on the Aurecon website ([www.aurecongroup.com](http://www.aurecongroup.com) - indicate "Current Location" as "South Africa" and follow the Public Participation link).

Please review this Executive Summary, and, preferably, the full Scoping Report, and submit your comments on the proposed project by **Monday 10 June 2013**. To comment, write a letter, call or e-mail the Public Participation office.

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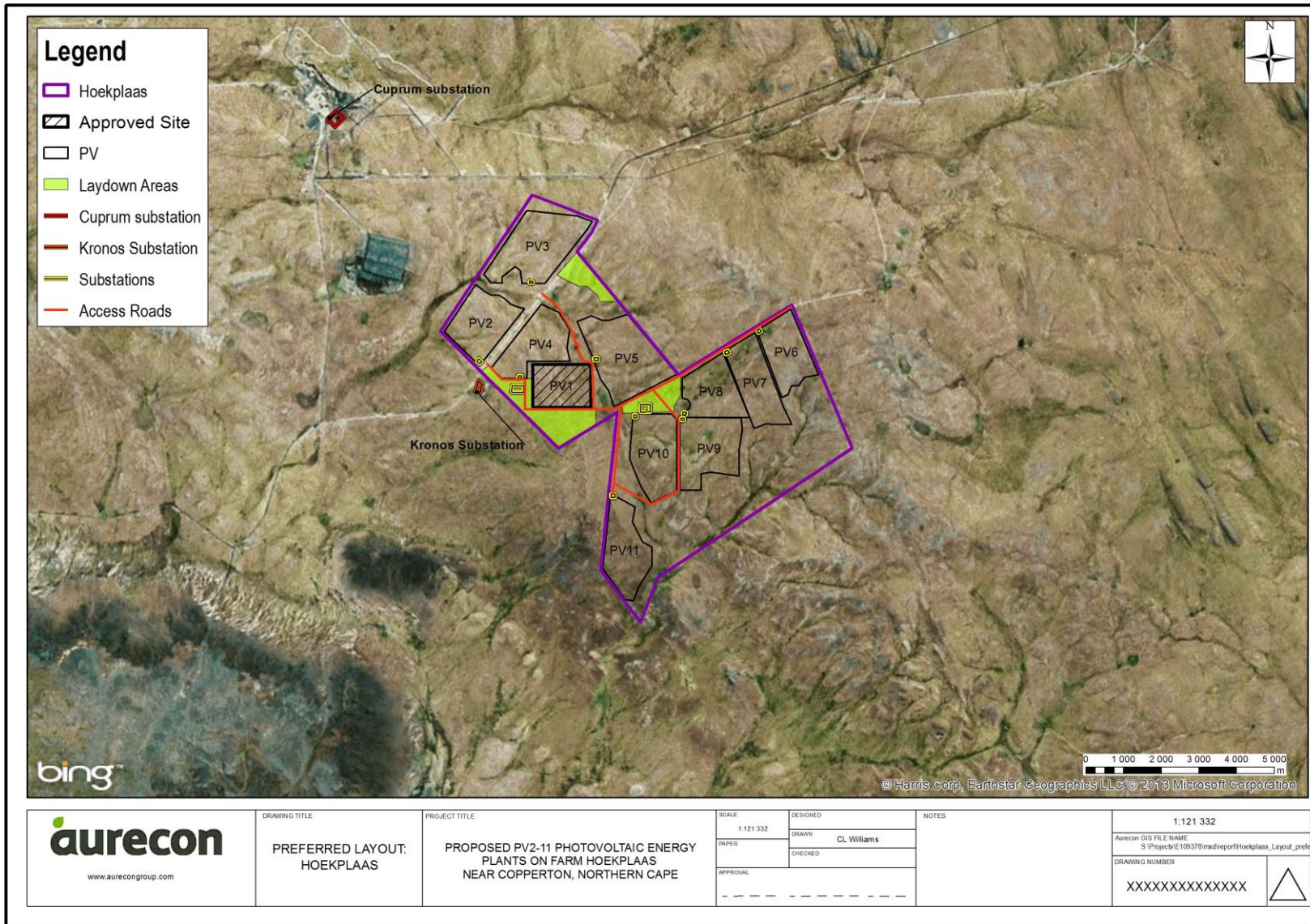


Figure 1 Location of the proposed PV plants on the farm Hoekplaas near Copperton, Northern Cape (2922 CD)

The proposed PV plants would convert shortwave radiation (sunlight) directly into electricity via cells through a process known as the Photovoltaic Effect. The PV cells are made of silicone which acts as a semi-conductor. The cells absorb light energy which energizes the electrons to produce electricity. Individual solar cells can be connected and packed into standard modules behind a glass sheet to protect the cells from the environment while obtaining the desired currents and voltages. These modules are grouped together to form a panel and can last up to 25 years due to the immobility of parts, as well as the sturdiness of the structure. However, the Power Purchase Agreement (PPA) is only valid for a period of 20 years after which the plant would most likely be decommissioned and the site rehabilitated.

### **Construction phase**

The construction phase of each 75 MW AC PV plant would last approximately 12 to 24 months. Employment opportunities created by the construction phase equates to approximately 2,800 man months of which 80% would be allocated to South African citizens. These employment opportunities can be divided into the following employment categories:

- 50% will be for black citizens.
- 15% will be skilled employees.
- 8% will be black skilled employees.
- 20% of the jobs created will be from the local community.

Approximately 1,400 kℓ of water would be required per facility during the duration of the construction phase. This water would be sourced via the Alkantpan pipeline.

### **Operational phase**

It is anticipated that the PV plants would last the full period of the PPA which is approximately 20 years. The remainder of the farm will continue to be used as grazing fields.

Employment opportunities to be created during the operational phase equates to approximately 35 man months of which 80% would be allocated to South African citizens. These employment opportunities can once again be divided into the following employment categories:

- 50% will be for black citizens
- 45% will be skilled employees
- 14% will be black skilled employees

### **Decommissioning phase**

The PV plants 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 per 75 MW AC PV plant. After disconnecting the PV infrastructure from the electricity network, the module components would be removed and recycled as far as possible. The structures would be dismantled and the concrete pile foundations would be removed. All underground cables would be excavated and removed. The buildings will be demolished and removed by an authorised company.

## **Site description**

The site consists of the farm Hoekplaas (Farm 146/RE). This portion is privately owned by Mr H.G. Human and Mrs M.J. Human who has entered into a long term agreement with Mulilo for the proposed project. Hoekplaas lies approximately 7.8 km to the south of Copperton and borders to the Kronos substation. The farm is approximately 5 014 ha in size and split into two portions by the R357.

The surrounding land uses are mainly agricultural, consisting mostly of sheep grazing. An abandoned Copperton mine is located approximately 5 km to the northwest of Farm Hoekplaas. Further west of the farm is Alkantpan, a weapons testing range, used by many countries for weapons testing. A large number of wind and solar energy facilities are being proposed in the Copperton area (see **Figure 2**) and are in

various stages of gaining environmental authorisation. Currently, Mulilo has four approved solar energy facilities in the area, of which one includes the 100 MW PV1 plant on Farm Hoekplaas.

A 1.7 km airstrip (owned by the Alkantpan weapon testing facility) is also located to the north of the site and is used by a number of aeroclubs (e.g. Aeroclub SA). Copperton town, consisting of a few dwellings and a small shop is also located immediately west of the site. It is proposed to move this airstrip approximately 7 km east of its current location as part of the Plan 8 wind energy facility. The site itself is used for agriculture (grazing).

### Scoping Process in terms of EIA Regulations

EIA Regulations (Government Notice (GN) No. 544, 545 and 546) promulgated in terms of NEMA, identify certain activities, which “could have a substantial detrimental effect on the environment”. These listed activities require environmental authorisation from the competent environmental authority, i.e. the Department of Environmental Affairs (DEA) in the case of energy applications, prior to commencing.

This proposed project triggers a number of listed activities (see **Table 1**) in terms of NEMA and accordingly requires environmental authorisation from DEA via the EIA process outlined in GN No. 543 of NEMA.

**Table 1 Listed activities in terms of NEMA GN No. 544, 545 and 546, 18 June 2010, to be authorised for the proposed PV plants**

NO.	LISTED ACTIVITY
<b>GN No. R544, 18 June 2010</b>	
10	The construction of facilities or infrastructure for the transmission and distribution of electricity - <ul style="list-style-type: none"> <li>• outside urban areas or industrial complexes with a capacity of more than 33 , but less than 275 kilovolts; or</li> <li>• inside urban areas or industrial complexes with a capacity of 275 kilovolts or more.</li> </ul>
11	The construction of - <ul style="list-style-type: none"> <li>(x) buildings exceeding 50 square metres (m<sup>2</sup>) in size; or</li> <li>(xi) infrastructure or structures covering 50m<sup>2</sup> or more</li> </ul> <p>where such construction occurs within a watercourse or within 32m of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.</p>
15	Physical alteration of undeveloped, vacant or derelict land for residential retail, commercial, recreational, industrial or institutional use where the total area to be transformed is 20 hectares or more.
<b>GN No. R545, 18 June 2010</b>	
1	The construction of facilities or infrastructure for the generation of electricity where the electricity output is 20 megawatts or more.
<b>GN No. R546, 18 June 2010</b>	
14	The clearance of an area of 5 hectares or more of vegetation where 75 % or more of the vegetation cover constitutes indigenous vegetation <ul style="list-style-type: none"> <li>(a) in the Northern Cape               <ul style="list-style-type: none"> <li>(i) All areas outside urban areas.</li> </ul> </li> </ul>

Aurecon has been appointed to undertake the required environmental processes on Mulilo’s behalf.

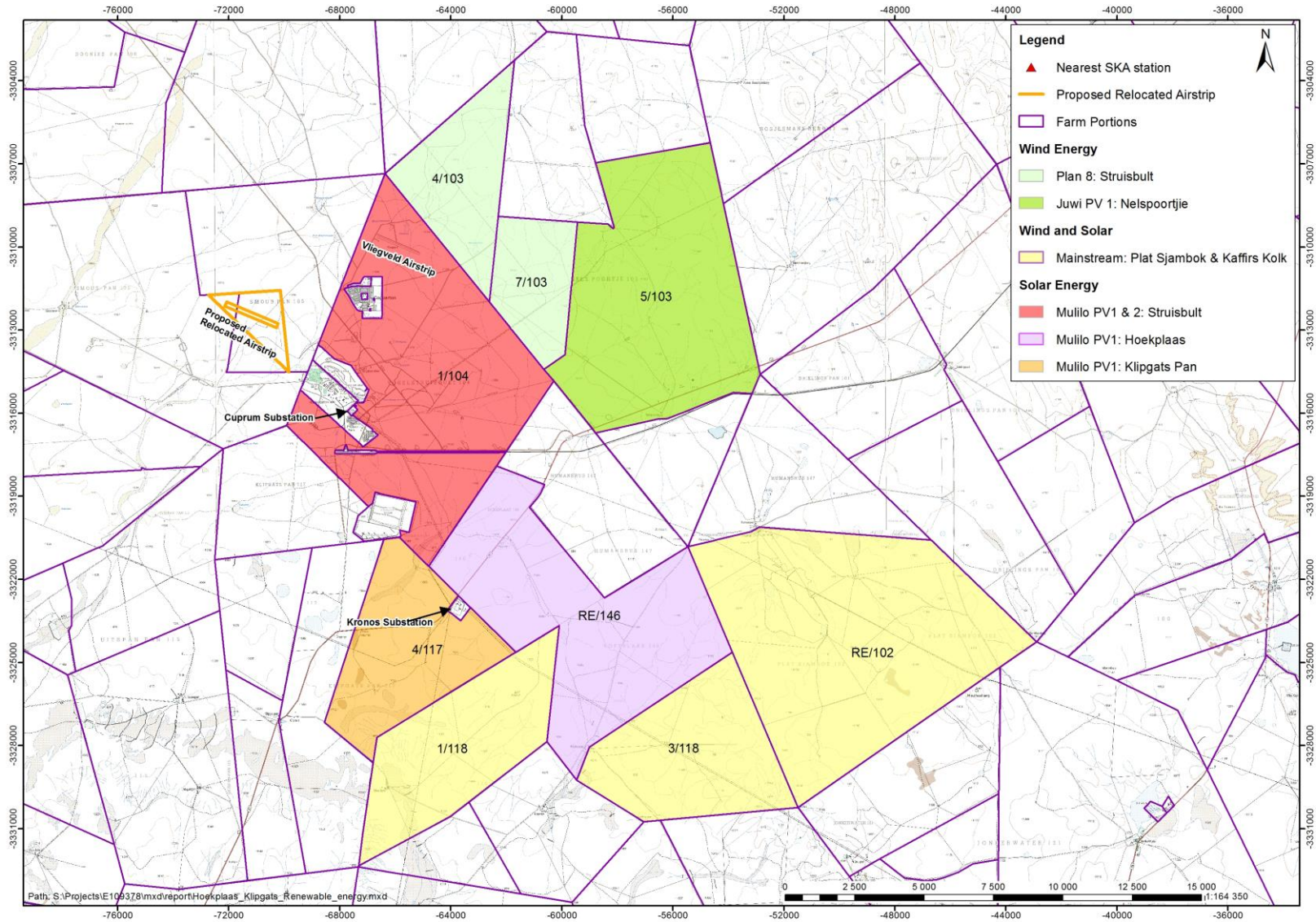


Figure 2 Other renewable energy projects (solar and wind) proposed for the Copperton area

## EIA Process

The EIA process consists of an Initial Application Phase, a Scoping Phase and an EIA Phase. The purpose of the Initial Application Phase is to commence the project *via* the submission of the relevant department’s application forms. The purpose of the Scoping Phase is to identify and describe potential 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.

## Project alternatives

The following feasible alternatives have been identified for further consideration in the Environmental Impact Assessment Report (EIAR):

Alternative Type	Description
<b>Location alternatives</b>	<ul style="list-style-type: none"> <li>One location for the proposed Hoekplaas PV plants</li> </ul>
<b>Activity alternatives</b>	<ul style="list-style-type: none"> <li>Solar energy generation via a PV plant</li> <li>No-go” alternative to solar energy production</li> </ul>
<b>Site layout alternatives</b>	<ul style="list-style-type: none"> <li>10 x 75 MW AC PV plants (Layout Alternative 1)</li> <li>Three (3) PV plants of 225 MW AC, 290 MW AC and 500 MW AC, respectively (Layout Alternative 2)</li> </ul>
<b>Technology alternatives</b>	<ul style="list-style-type: none"> <li>Conventional PV vs CPV technology</li> <li>Single Axis vs Fixed Axis PV tracking technology</li> </ul>

## Identified impacts

The proposed PV plants could impact on a range of biophysical and socio-economic aspects of the environment. Impacts can result from the construction phase as well as the operational phase. While the construction phase impacts are usually short term, some may have longer lasting effects. A construction phase Environmental Management Programme (EMP) will be compiled to be implemented during the construction phase to manage these aspects.

The operational phase impacts are usually considered to be the long term impacts associated with the project and these will be considered by a suite of specialists during the Environmental Impact Assessment Report (EIAR) Phase. The specialists will also consider ways to manage these potential impacts and these mitigation measures will be included in an operational phase EMP.

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

- Operational phase impacts on the biophysical environment:
  - Impact on flora;
  - Impact on fauna (including avifauna); and
  - Impact on freshwater resources.
- Operational phase impacts on the socio-economic 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 uses.
- 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;
  - Noise pollution; and
  - Dust impact.

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:

Study	Consultant and Organisation
<b>Botanical assessment</b>	Dr Dave McDonald of Bergwind Botanical Tours and Surveys
<b>Agriculture potential assessment</b>	Mr Kurt Barichiev of SIVEST
<b>Aquatic assessment</b>	Mr James Mackenzie of Mackenzie Ecological & Development Services
<b>Hydrology assessment</b>	Mr Richard Hirst of SiVEST
<b>Avifauna assessment</b>	Dr Andrew Jenkins of Avisense Consulting
<b>Heritage assessment: Archaeology / Cultural Palaeontology</b>	Mr Jayson Orton of ACO Associates Dr John Almond of Natura Viva
<b>Visual assessment</b>	Mr Steven Stead of VRM Africa cc

### Public Participation

Public participation is a key component of this EIA process and will take place at various stages throughout the project. 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 on 26 April 2013 (the Gemsbok);
- Placing a notice board at the site (19 April 2013);
- Providing written notice and an Executive Summary to potential I&APs, including surrounding landowners, organs of state, ward councillors and relevant authorities (23 April 2013); and
- Requesting potential I&APs to recommend other potential I&APs to include on the database (chain referral process).

### Way forward

All registered I&APs will be notified of the commenting period by means of a letter sent by post, fax or e-mail on 23 April 2013. The notification letters also included a copy of the Executive Summary of the DSR in English and Afrikaans. Copies of this DSR will be lodged in Prieska (Elizabeth Vermeulen) Public Library, letznietz in Copperton and on the Aurecon website ([www.aurecongroup.com](http://www.aurecongroup.com) - indicate "Current Location" as "South Africa" and follow the Public Participation link).

I&APs have 40 days, i.e. from **30 April 2013** until **10 June 2013** 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 to the Final Scoping Report (FSR).

Once the FSR has been completed and all I&AP comments have been incorporated into the report, as necessary, and the proponent has approved the report, the FSR 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.

### Public Participation Office

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### List of Acronyms

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



# OMGEWINGSINVLOEDBEPALING: BEOOGDE PV2-PV11 FOTOVOLTAÏESE SONENERGIE-AANLEGTE OP HOEKPLAAS NABY COPPERTON, NOORD-KAAP



30 APRIL 2013



AANLEG	DOS VERW. NR.	NEAS VERW. NR.	AANLEG	DOS VERW. NR.	NEAS VERW. NR.
PV2	14/12/16/3/3/2/493	DEA/EIA/0001754/2013	PV7	14/12/16/3/3/2/498	DEA/EIA/0001759/2013
PV3	14/12/16/3/3/2/494	DEA/EIA/0001755/2013	PV8	14/12/16/3/3/2/499	DEA/EIA/0001760/2013
PV4	14/12/16/3/3/2/495	DEA/EIA/0001756/2013	PV9	14/12/16/3/3/2/500	DEA/EIA/0001761/2013
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PV6	14/12/16/3/3/2/497	DEA/EIA/0001758/2013	PV11	14/12/16/3/3/2/502	DEA/EIA/0001763/2013

## OPSOMMENDE DOKUMENT: OMVANGBEPALINGSVERSLAG

### Agtergrond

Mulilo Renewable Energy (Edms) Bpk (Mulilo) beoog om 10 addisionele fotovoltaïese (FV) sonenergie-aanlegte op 'n plaas naby Copperton in die Noord-Kaap op te rig. Aurecon South Africa (Edms) Bpk (Aurecon) is aangestel om die verlangde Omgewingsinvloedbepalingsproses (OIB) kragtens die Wet op Nasionale Omgewingsbestuur (WNOB) (Wet Nr. 107 van 1998), soos gewysig, namens Mulilo uit te voer.

Die beoogde projekte sal plaasvind op die plaas Hoekplaas (Restant van Plaas Nr. 146) naby Copperton in die Noord-Kaap (verwys na **Figuur 1**). Hoekplaas is ongeveer 7.8 km suid van Copperton geleë en grens aan die Kronos-substasie. Die plaas beslaan ongeveer 5 014 ha.

### Beoogde Projek

Mulilo beoog om 10 addisionele FV sonenergie-aanlegte van 75 MW WS elk (voorkeur-alternatief) op te rig. Alternatiewelik word drie FV aanlegte met 'n opwekkingskapasiteit van 225 MW WS (Alternatief PV2), 290 MW WS (Alternatief PV3) en 500 MW WS (Alternatief PV4) voorgestel.

Elk van die voorgename FV aanlegte sal bestaan uit die volgende:

- Sonkrag Aanleg: 'n Fotovoltaïese komponent bestaande uit talle skikkings van FV panele en verwante geassosieerde infrastruktuur vir die opwekking van 75 MW WS per aanleg, d.m.v. die fotovoltaïese effek.
- Transmissiellyn: 132 kV oorhoofse transmissiellyn om elke aanleg te koppel aan die sentrale substasie geleë op die ontwikkelingssterrein of die bestaande Eskom-substasie (d.w.s. Kronos of Cuprum).
- Substasies: 'n 32 kV, 3 uitbousel substasie op die terrein.
- 'n Grensdraad: Elke 75 MW WS fasiliteit sal 'n elektriese heining vir veiligheid en sekuriteit hê.

### Doel van hierdie dokument

Hierdie dokument is 'n opsomming van die Konsep Omvangbepalingsverslag (OBV) en die Studieplan vir die OIB vir die beoogde FV-aanlegte op Hoekplaas naby Copperton, Noord-Kaap. Dit gee 'n kort agtergrond en oorsig van die beoogde projek, 'n beskrywing van die proses van openbare deelname tot op datum, '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.

U word ook uitgenooi om kommentaar te lewer op die Konsep OBV van die beoogde projek. Die OBV is beskikbaar gestel by die Prieska (Elizabeth Vermeulen) Openbare Biblioteek, letznietz Gastehuis in Copperton en op Aurecon se webblad ([www.aurecongroup.com](http://www.aurecongroup.com) – kies "South Africa" as "Current Location" en volg die "Public Participation"-skakel).

Lees asb. hierdie Opsommende Dokument en verkieslik die volledige Omvangbepalingsverslag, deur, en dien u kommentaar op die beoogde projek teen **Maandag 10 Junie 2013** in. Lewer kommentaar deur 'n brief te skryf, te bel of 'n e-pos aan die Kantoor vir Openbare Deelname te stuur.

**Aurecon**

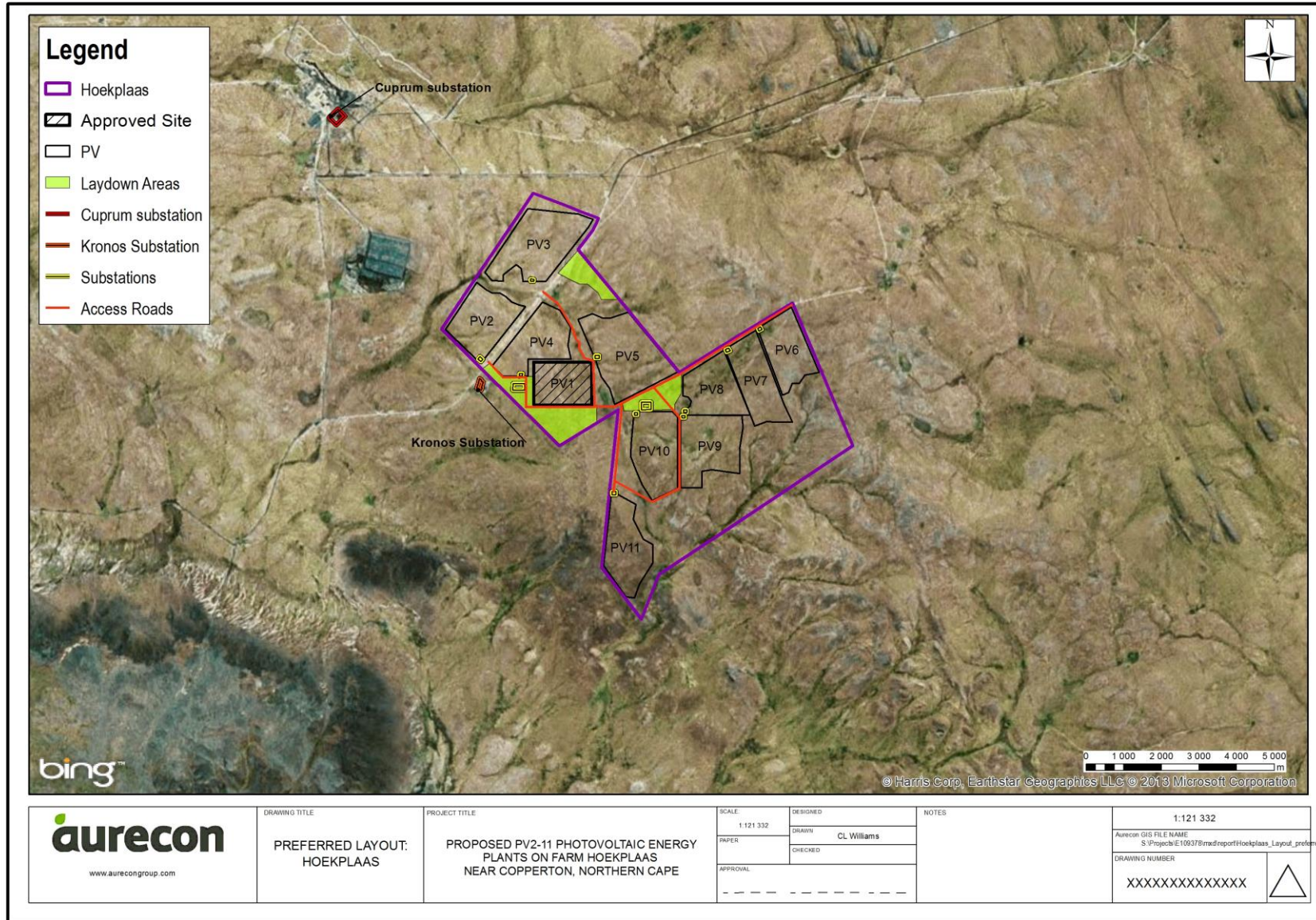
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Figuur 1: Ligging van die beoogde FV-aanleg op Hoekplaas naby Copperton, Noord-Kaap (2922 CD)

Die beoogde FV-aanlegte sal kortgolf-uitstralings (sonlig) met behulp van selle direk na elektrisiteit omskakel. Hierdie proses staan bekend as die Fotovoltaïese Effek. Die FV-selle is van silikoon vervaardig, wat as 'n semi-geleier dien. Die selle absorbeer die ligenergie wat die elektrone stimuleer om ook elektrisiteit op te wek. Individuele sonselle kan verbind en agter 'n glasplaat in standaard modules gepak word om dit teen die elemente te beskerm en terselfdertyd die verlangde stroom en spanning op te wek. Die modules word tesame gegroep en kan tot 25 jaar hou as gevolg van die onbeweegbaarheid van die onderdele, sowel as die stewigheid van die struktuur. Die Elektrisiteit-aankoopooreenkoms is egter net geldig vir 20 jaar waarna die aanleg waarskynlik buite werking gestel sal word en die terrein gerehabiliteer sal word.

### **Konstruksiefase**

Die beoogde 75 MW WS FV aanlegte sal oor 'n tydperk van 12 tot 24 maande opgerig word. Werksgeleenthede gedurende die konstruksiefase sal ongeveer 2,800 persoon-maande wees waarvan 80% aan Suid-Afrikaanse burgers toegeken sal word. Die werksgeleenthede kan verdeel word in die volgende indiensname-kategorieë:

- 50% vir swart burgers.
- 15% vir geskoolde werkers.
- 8% vir swart geskoolde werkers.
- 20% van die werksgeleenthede sal vir die plaaslike gemeenskap aangebied word.

### **Bedryfsfase**

Die projek sal na verwagting die volle tydperk van die Elektrisiteit-aankoopooreenkoms (ongeveer 20 jaar) beloop. Die oorblywende gedeelte van die plaas sal verder gebruik word vir weiding.

Werksgeleenthede gedurende die bedryfsfase sal gelykstaande wees aan ongeveer 35 persoon-maande waarvan 80% aan Suid-Afrikaanse burgers geallokeer sal word. Die werksgeleenthede kan weereens verdeel word in die volgende indiensname-kategorieë:

- 50% vir swart burgers.
- 45% vir geskoolde werkers.
- 14% vir swart geskoolde werkers.

### **Buitedienstellingsfase**

Die FV-aanlegte sal na afloop van die Elektrisiteit-aankoopooreenkoms (ongeveer 20 jaar na indiensstelling) afgebreek word, wat na verwagting 6 tot 12 maande sal neem per 75 MW WS FV-aanleg. Na die buitendienstellingsfase sal die modulêre dele verwyder en sover moontlik herwin word. Die strukture sal afgebreek word en die beton fundamente sal verwyder word. Alle ondergrondse kables sal uitgegrawe en verwyder word. Die geboue sal geslopp word en verwyder word deur 'n gemagtigde maaskappy.

## **Beskrywing van terrein**

Die terrein kom voor op die plaas Hoekplaas (Plaas 146/RE). Hierdie gedeelte behoort aan die Mnr H.G. Human and Mev M.J. Human, wat 'n langtermyn-ooreenkoms vir die projek met Mulilo gesluit het. Hoekplaas is ongeveer 7.8 km suid van Copperton geleë en grens aan die Kronos substasie. Die plaas beslaan ongeveer 5 014 ha en word in twee gedeeltes verdeel deur die R357.

Die omliggende grondgebruik is hoofsaaklik landbou, en word meestal as weiding vir skaap gebruik. 'n Verlate Coppertonmyn is ongeveer 5 km noordwes van die plaas Hoekplaas geleë. Verder wes van die plaas is Alkantpan, 'n wapen toets area, wat deur verskeie lande gebruik word om hul wapens te toets.'n Groot aantal wind en sonenergie aanlegte word beplan in die Copperton area (sien **Figuur 2**) en is in verskillende stadiums van die Omgewingsmagtigingsproses. Tans het Mulilo vier goedgekeurde sonkrag-aanlegte in die gebied waarvan een die 100 MW FV1-aanleg op die plaas Hoekplaas insluit.

'n 1.7 km-lange landingstrook (die eiendom van die Alkantpan wapentoetsaanleg), kom ook noord van die terrein voor en word deur 'n aantal vliegklubs gebruik (bv. Aeroclub SA). Die dorp Copperton, wat

bestaan uit 'n paar wooneenhede en 'n klein winkel, is onmiddellik wes van die terrein geleë. As deel van Plan 8 se windenergie-aanleg word daar beoog om die landingstrook 7 km oos van sy huidige posisie op die Alkantspan-eiendom te verskuif. Die terrein self is as landbou (weiveld) gesoneer.

### Omvangbepalingsproses kragtens die OIB-regulasies

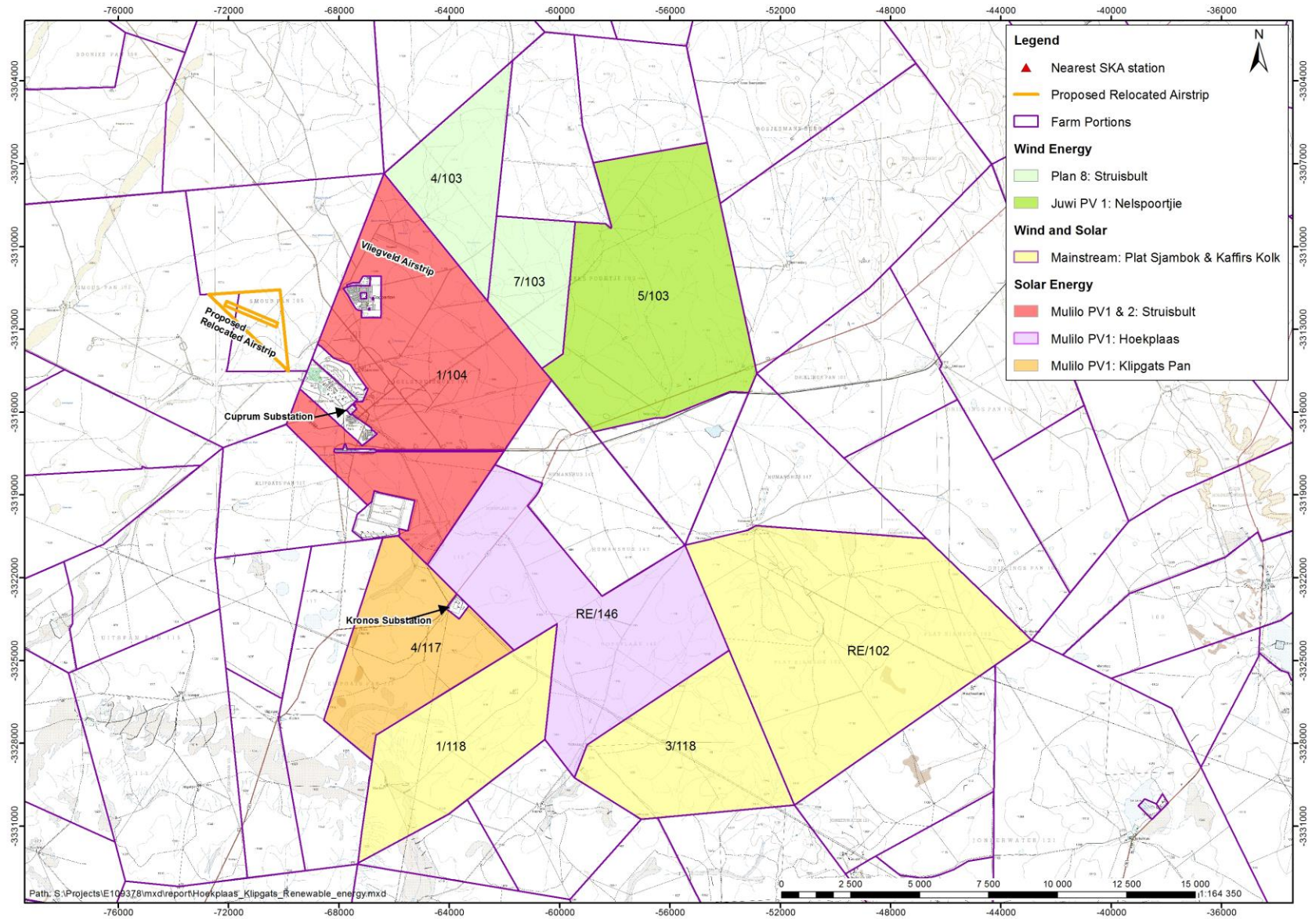
Die Regulasies vir 'n Omgewingsinvloedbepaling (OIB) (Regulasies 544, 545 en 546) wat kragtens die WNOB afgekondig is, identifiseer sekere bedrywighede wat 'n "betekenisvolle nadelige invloed op die omgewing mag hê". Hierdie gelyste bedrywighede vereis 'n omgewingsmagtiging van die bevoegde omgewingsowerheid vir energie-aansoeke, naamlik die Departement van Omgewingsake (DOS), voordat daar met die projek begin mag word.

Die beoogde projek het verskeie gelyste bedrywighede (verwys na **Tabel 1**) kragtens die WNOB tot gevolg en verg dus 'n omgewingsmagtiging in terme van die OIB-proses soos uiteengesit in GK. Nr. 543 van die WNOB.

**Tabel 1: Gelyste bedrywighede kragtens die WNOB; GK Nr. 544, 545 en 546, 18 Junie 2010, vir die beoogde FV-aanleg wat magtigings nodig het**

NR.	GELYSTE BEDRYWIGHEID
<b>GK Nr. R544, 18 Junie 2010</b>	
10	Die bou van fasiliteit vir die transmissie en verspreiding van elektrisiteit - <ul style="list-style-type: none"> <li>• buite stedelike gebiede of nywerheidskomplekse met 'n vermoë van meer as 33 , maar minder as 275 kilovolt; of</li> <li>• binne stedelike gebiede of nywerheidskomplekse met 'n vermoë van 275 kilovolt of meer.</li> </ul>
11	Die konstruksie van – <p>(x) geboue groter as 50 vierkante meter (m<sup>2</sup>); of</p> <p>(xi) infrastruktuur of strukture wat 50 m<sup>2</sup> of meer bedek</p> <p>Waar hierdie konstruksie plaasvind binne 'n waterloop of binne 32 m van 'n waterloop , soos gemeet van die rand van die waterloop, uitsluitend waar sulke konstruksie agter die ontwikkelings terugslaglyn plaasvind.</p>
15	Fisiese verandering van onontwikkelde, vakante of verlate grond vir residensiële kleinhandel-, kommersiële, ontspannings-, nywerheids-of institusionele gebruik waar die totale gebied omskep word 20 hektaar of meer is.
<b>GK Nr. R545, 18 Junie 2010</b>	
1	Die bou van fasiliteite of infrastruktuur vir die opwekking van elektrisiteit waar die toegevoerde vermoë 20 megawatt of meer is.
<b>GK Nr. R546, 18 Junie 2010</b>	
14	Die skoonmaak van 'n gebied van 5 hektaar of meer waar 75 % of meer van die plantegroei uit inheemse plantegroei bestaan <p>(a) in die Noord-Kaap</p> <p>(i) Alle gebiede buite stedelike gebiede.</p>

Aurecon is aangestel om die nodige omgewingsproses namens Mulilo uit te voer.



Figuur 2: Ander hernubare energieprojekte (son en wind) wat beoog word in die omgewing van Copperton

## 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 by wyse van 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 sal word.

Die doel van die OIB-fase is om daardie alternatiewe en impakte wat tydens die Omvangbepaling 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.

## Projek-alternatiewe

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

Alternatiewe Tipe	Beskrywing
<b>Alternatiewe plasings</b>	<ul style="list-style-type: none"> <li>Een terrein vir die Hoekplaas FV-aanleg.</li> </ul>
<b>Alternatiewe bedrywighede</b>	<ul style="list-style-type: none"> <li>Opwekking van sonenergie by wyse van 'n FV-aanleg; en</li> <li>No-go" alternatiewe – geen sonenergie nie.</li> </ul>
<b>Alternatiewe terreinuitlegte</b>	<ul style="list-style-type: none"> <li>10 x 75 MW WS FV aanlegte (Uitleg Alternatiewe 1).</li> <li>Drie (3) FV aanlegte van 225 MW WS, 290 MW WS and 500 MW WS, onderskeidelik (Uitleg Alternatiewe 2).</li> </ul>
<b>Tegnologie Alternatiewe</b>	<ul style="list-style-type: none"> <li>Konvensionele FV vs Gekonsentreerde FV tegnologie.</li> <li>Enkel As vs Vaste As FV opsporings tegnologie.</li> </ul>

## Geïdentifiseerde impakte

Die beoogde FV-aanleg kan 'n invloed hê op 'n verskeidenheid biofisiese en sosio-ekonomiese omgewingsaspekte – beide tydens die konstruksie- en die bedryfsfase. Terwyl die impakte tydens die konstruksiefase gewoonlik korttermyn van aard is, kan sommige impakte langer duur. 'n Omgewingsbesuursprogram (OBP) sal vir die konstruksiefase opgestel en toegepas word om hierdie aspekte te bestuur.

Die bedryfsimpakte van die projek word gewoonlik as langtermyn beskou en sal deur 'n aantal deskundiges tydens die konsep OBV-fase ondersoek word. Die deskundiges sal ook voorstelle maak oor hoe om hierdie moontlike impakte te bestuur, en mitigasiemaatreëls sal deel vorm van 'n OBP vir die bedryfsfase.

Die volgende moontlike omgewingsimpakte is spesifiek vir verdere ondersoek tydens die OIB-fase geïdentifiseer:

- Impakte van die bedryfsfase op die biofisiese omgewing:
  - Impak op flora;
  - Impak op fauna (wat avifauna); en

- Impak op varswaterhulpbronne.
- Impakte van die bedryfsfase op die maatskaplike omgewing:
  - Impak op erfenishulpbronne (paleontologie ingesluit);
  - Visuele impakte;
  - Impak op die voorsiening van elektrisiteit;
  - Impak op plaaslike ekonomie (werkskepping) en maatskaplike toestande;
  - Impak op landbougrond; en
  - Impak op omliggende grondgebruike.
- Impakte van die konstruksiefase op die biofisiese en maatskaplike omgewing:
  - Versteuring van flora en fauna;
  - Sedimentasie en erodering van waterlope;
  - Impak op verkeer;
  - Berging van gevaarhoudende stowwe op terrein;
  - Geraasbesoedeling; en
  - Impak van stof.

Die volgende spesialisstudies sal deur onderstaande deskundiges uitgevoer word om meer omvattende inligting te bekom oor daardie omgewingsimpakte wat moontlik die meeste kommer wek, en/of waar daar nie genoeg inligting beskikbaar is nie, naamlik:

Studie	Konsultant en Organisasie
<b>Botaniese beoordeling</b>	Dr. Dave MacDonald, Bergwind Botanical Tours and Surveys
<b>Bepaling van landboupotensiaal</b>	Mnr. Kurt Barichiev van SiVEST
<b>Akwatiese beoordeling</b>	Mnr. James Mackenzie, Mackenzie Ecological & Development Services
<b>Hidrologie</b>	Mnr. Richard Hirst, SiVEST
<b>Beoordeling van avifauna</b>	Dr. Andrew Jenkins van Avisense Consulting
<b>Erfenisimpak</b>	
<b>Argeologie/Kulturele erfenis</b>	Mnr. Jayson Orton van ACO
<b>Paleontologie</b>	Dr. John Almond van Natura Viva
<b>Botaniese beoordeling</b>	Dr. Dave MacDonald, Bergwind Botanical Tours and Surveys
<b>Visuele beoordeling</b>	Mnr. Steven Stead van VRM Africa cc

### Openbare Deelname

Openbare deelname is 'n sleutelkomponent van hierdie OIB-proses en vind plaas op verskeie stadiums van die projek. Die benadering vir die huidige ondersoek is om soveel as moontlik B&GPe op 'n verskeidenheid maniere te bepaal:

- Die plaas van advertensies in plaaslike koerante op 26 April 2013 (die Gemsbok);
- Die oprig van 'n kennisgewingbord op terrein (19 April 2013);
- 'n Skriftelike kennisgewing en 'n Uitvoerende Opsomming aan moontlike B&GPe, wat aangrensende grondeienaars, staatsorgane, raadslede en betrokke owerhede insluit (23 April 2013);
- Om moontlike B&GPe te versoek om inligting te verskaf oor ander B&GPe wat op die databasis ingesluit kan word (kettingverwysing).

### Pad vorentoe

Alle geregistreerde B&GPe sal op 23 April 2013 per brief, faks of e-pos van hierdie proses in kennis gestel word. 'n Afskrif van die Uitvoerende Opsomming (in Engels en Afrikaans) is by die kennisgewing

ingesluit. Afskrifte van die KOBV is ook beskikbaar gestel in die Prieska (Elizabeth Vermeulen) Openbare Biblioteek, letznietz in Copperton en op Aurecon se webblad ([www.aurecongroup.com](http://www.aurecongroup.com) – verander “Current Location” na “South Africa” en volg die “Public Participation”-skakel).

B&GPe het 40 dae tyd, vanaf **30 April 2013** tot **10 Junie 2013**, om hulle skriftelike kommentaar op die konsep OBV in te dien. Hierdie kommentaar sal by die samestelling van die finale verslag in ag geneem word en die kommentaar sal, tesame met die projekspan en applikant se antwoorde daarop, by die finale verslag ingesluit word. Die verslag sal, waar toepaslik, dienooreenkomstig opgedateer word.

Sodra die Finale Omvangbepalingsverslag voltooi is en alle kommentaar vanaf B&GPe is in die verslag opgeneem, waar toepaslik (en nadat die kliënt die verslag goedgekeur het), sal die verslag onderskeidelik aan die DOS en die Noord-Kaapse Departement van Omgewingsake en Omgewingsbewing vir hulle oorsig en kommentaar gestuur word. Die DOS sal die aansoek afkeur of die applikant aansê om na die OIB-fase oor te gaan – hetsy soos in die Studieplan vir die OIBV uiteengesit, of versoek dat veranderinge aangebring word voordat daar voortgegaan word.

### 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

### Kantoor vir Openbare Deelname

**Aurecon**

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