

MARCH 2012

## ENVIRONMENTAL IMPACT ASSESSMENT PROCESS



PROPOSED

**KAROSHOK SOLAR VALLEY PARK**

**NORTHERN CAPE**

**BACKGROUND INFORMATION DOCUMENT**

FG Emvelo Energy (Pty) Ltd, an independent power developer of concentrating solar power plants, is in the process of investigating the possible establishment of the Karoshoek Solar Valley Development, using various concentrating solar generation technologies, on sites located approximately 30 km east of Upington within the Khara Hais Local Municipality in the Northern Cape. The facility is proposed on the following farm portions (refer to map in centre fold):

- » Portion 0 of Karos 959;
- » Portion 3 of Annashoek 41;
- » Portion 0 of Zandem 944;
- » Portion 2 of Matjiesrivier 41; and
- » Portion RE of Matjiesrivier 41

## PURPOSE OF A BACKGROUND INFORMATION DOCUMENT

This document aims to provide you, as an interested and/or affected party (I&AP), with:

- » An overview of the proposed concentrating solar power plants at the Karoshoek Solar Valley
- » An overview of the Environmental Impact Assessment (EIA) process and specialist studies being undertaken to assess the potential impacts (i.e. positive and negative; as well as direct, indirect, and cumulative) of the proposed projects at Karoshoek Solar Valley
- » Details of how you can become involved in the EIA and public participation process, receive information, or raise issues, which may concern and/or interest you

## PROJECT COMPONENTS PROPOSED AS PART OF THE KAROSHOEK SOLAR VALLEY DEVELOPMENT

Through a previous environmental process undertaken on the proposed broader Karoshoek development, a scoping study was done and various technically feasible sites for development of future plants have been identified. These sites are now being investigated for the establishment of various concentrating solar power plants as part of the Karoshoek Solar Valley Development. The following table provides an indication of what is being proposed at each of the sites:

Site reference (refer to map in centrefold)	Project Name and Description	DEA Reference number
Site 2	Karoshoek CPVPD 1 (1 x 25 MW Concentrating photovoltaic or parabolic dish technology project)	14/12/16/3/3/2/292
	Karoshoek CPVPD 2 (1 x 25 MW Concentrating photovoltaic or parabolic dish technology project)	14/12/16/3/3/2/291
	Karoshoek CPVPD 3 (1 x 25 MW Concentrating photovoltaic or parabolic dish technology project)	14/12/16/3/3/2/290
	Karoshoek CPVPD 4 (1 x 25 MW Concentrating photovoltaic or parabolic dish technology project)	14/12/16/3/3/2/289
Site 1.1	Karoshoek LF 1 (1 x 100 MW Linear Fresnel)	14/12/16/3/3/2/293
Site 1.3	Karoshoek PT (1 x 100 MW Parabolic Trough)	14/12/16/3/3/2/294
Site 1.4	Karoshoek LFT 2 (1 x 100 MW Linear Fresnel <u>or</u> Parabolic Trough)	14/12/16/3/3/2/299
Site 3	Karoshoek Tower 1 (1 x 50MW Tower)	14/12/16/3/3/2/298
	Karoshoek Tower 2 (1 x 50MW Tower)	14/12/16/3/3/2/297
Site 4	Karoshoek LFTT 1 (1 X 100 MW Linear Fresnel <u>or</u> Parabolic Trough or Tower)	14/12/16/3/3/2/296
Site 5	Karoshoek LFTT 2 (1 X 100 MW Linear Fresnel <u>or</u> Parabolic Trough or Tower)	14/12/16/3/3/2/295
Grid connection	Electricity distribution line(s) which will connect to an on-site substation / switchyard	14/12/16/3/3/2/288

Note that Site 1.2 was previously investigated for the establishment of a Parabolic Trough Plant with a capacity of up to 125MW, known as Project Ilanga (DEA Ref No: 12/12/20/2056). This facility and associated infrastructure has already been authorised.

## TURNING SOLAR ENERGY INTO ELECTRICITY

Concentrating Solar Power (CSP) plants produce electric power by converting the sun's energy into high temperature heat using various mirror configurations. The heat is then channelled through a conventional generator. The plants consist of two parts; i.e. the solar field which collects the solar fuel and converts it to heat, and the conventional power block that converts heat energy into solar thermal electricity. Some CSP systems use thermal storage and they can be hybridised with biofuels and fossil fuels to provide high value, round the clock, dispatchable electricity.

The above attributes, together with one of the best Direct Normal Irradiation (DNI) at the Karoshoek Solar Valley near Uptington makes concentrating solar power an attractive renewable energy option for South Africa. There are four main CSP technologies that are promoted globally; the following provides a brief description of the CSP technologies proposed for the Karoshoek Solar Valley Development:

- » The Parabolic Dish combines a parabolic shaped point focus concentrator in the form of a dish that reflects solar radiation onto a receiver mounted at the focal point. These concentrators are mounted with a two-axis tracker to follow the sun. The collected heat is typically utilized directly by a heat engine mounted on the receiver moving with the dish structure. Stirling and Brayton cycle engines are currently favoured for power conversion.



Figure 1: Parabolic Dish

- » Parabolic troughs – the sun's energy is concentrated by parabolically curved, trough shaped reflectors onto a receiver pipe running along the inside of the curved surface. This energy heats oil or molten salts through the pipe and the heat energy is then used to generate electricity in a conventional power block. A solar field comprises many troughs in parallel rows aligned on a north-south axis. This configuration enables the single-axis troughs to track the sun from east to west during the day to ensure that the sun is continuously focused to the receiver tubes. Trough designs can incorporate thermal storage allowing for electricity generation several hours into the evening. Troughs can also be hybridised with other fuels such as coal, gas or biomass.



Figure 2: Parabolic Troughs

- » Linear Fresnel technology is an evolution from the parabolic trough technology; it uses flat glass mirrors in place of parabolically curved mirrors. Parallel lines of mirrors reflect solar energy onto a receiver in which water is vaporized. Fresnel plants can be designed to incorporate thermal storage.



Figure 3: Linear Fresnel

- » The Tower is based on concentrated solar power with an array of heliostats on a central receiver mounted atop a tower more than 100 metres high. The liquid running through the receiver absorbs highly concentrated solar radiation in the receiver and converts it into thermal energy for use in the generation of steam, which runs the turbine and thus generates electricity.



Figure 4: The Tower

- » Concentrating photovoltaic (CPV) concentrators, these technologies use only direct beam sunlight, rather than diffuse solar radiation.



Figure 5: Concentrating Photovoltaic (CPV)

## PROJECT INFRASTRUCTURE

In addition to the CSP plants described above, the following associated infrastructure will also be required for each proposed development within the Karoshoek Solar Valley Development:

- » Power line(s) which will connect to the Uppington CSP Main Transmission Substation
- » Internal and external access roads
- » Accommodation facilities; storerooms
- » Temporary waste storage facilities may be required

The water source is the Orange River, with the water abstraction point at the existing abstraction point of the Boegoeberg Water Users Association at coordinate S 28 24' 7.68" and E 21 29' 50.51". Associated water supply pipelines; water treatment and storage reservoirs and evaporation ponds will be required. This infrastructure has already been authorised through the EIA process undertaken for Project Ilanga on site 1.2 (DEA ref no. 12/12/20/2056). A pipeline would however be required to be constructed to each facility from the central water reservoir.

Each proposed plant within the Karoshoek Solar Valley Development will take approximately 2-3 years to construct. The construction of the entire Karoshoek Solar Valley development is expected to take approximately 10-12 years.

## ENVIRONMENTAL BASIC ASSESSMENT PROCESS

In terms of the EIA Regulations published in terms of Section 24(5) of the National Environmental Management Act (NEMA, Act No. 107 of 1998), FG Emvelo Energy (Pty) Ltd requires authorisation from the National Department of Environmental Affairs (DEA) (in consultation with the Northern Cape Department of Agriculture and Nature Conservation), for the undertaking of the various proposed solar thermal plants. In terms of sections 24 and 24D of NEMA, as read with the EIA Regulations of GNR544; GNR545; and GNR546, a Scoping and an EIA Phase are required to be undertaken for the proposed projects.

In order to obtain authorisation, comprehensive, independent environmental studies must be undertaken in accordance with the EIA Regulations. As each development would be operated by a separate Special Purpose vehicle (SPV), and due to the generating capacity thresholds implemented by the Department of Energy within the Independent Power Producers (IPP) bidding process, separate applications have been submitted for each of the proposed developments, as outlined previously. These projects have been registered with the National DEA.

An EIA is an effective planning and decision-making tool. It allows for the identification of potential environmental consequences resulting from a proposed activity. Furthermore it allows these impacts to be appropriately managed during a project's construction and operation. An EIA provides the opportunity for dialogue with I&APs.

FG Emvelo Energy (Pty) Ltd has appointed Savannah Environmental, as the independent environmental consultants, to undertake the required EIA process to identify and assess potential environmental impacts associated with each component of the proposed project, and propose appropriate mitigation and management measures as part of an Environmental Management Programme (EMP). As part of these environmental studies, I&APs will be actively involved through the public involvement process.

The EIA process is comprised of the following 4 primary phases:



## WHAT POTENTIAL IMPACTS ARE ASSOCIATED WITH THE PROPOSED CONCENTRATING SOLAR POWER PLANTS?

Although a solar facility utilises a renewable resource to generate electricity, the construction and operation of the proposed facility has the potential to impact on the environment in both a positive and negative manner, both directly and indirectly. A number of potential environmental impacts, both positive and negative, associated with the proposed



solar facility have been identified. These potential impacts will be assessed through the following specialist studies:

- Ecology, fauna, and flora: the construction of the facility and the associated disturbance of vegetation and habitats may affect the ecology and biodiversity of the site.
- Geology and soil erosion: the construction of the facility may affect the underlying geology in terms of soil degradation and/or erosion.
- Agricultural potential: solar facilities typically result in whole scale disturbance of a site (i.e. the vegetation underneath the parabolic troughs will need to be cleared), resulting in the area being unavailable for agricultural activities.
- Heritage sites and palaeontology: disturbance to or destruction of heritage sites and fossils may result during the construction phase through excavation activities.
- Water resources: the abstraction and use of water in the generation process may result in impacts in terms of quantity and quality of water as well as potential impacts on the riparian environment of the Orange River.
- Visual aesthetics: the establishment of an industrial facility of this nature has the potential to affect the visual aesthetics within the area.
- Noise: sensitive noise receptors may be affected during the construction phase and during the operational phase (i.e. due to the operation of the steam turbine and generator).
- Social: the construction and operation of the facility may result in positive socio-economic opportunities in terms of local employment as well as negative impacts in terms of safety and security and land use characteristics.

These specialist studies will be undertaken in two phases as follows:

- » The Scoping Phase, where potential issues associated with the proposed project will be identified as part of a desktop study. Areas of sensitivity within the broader site will be identified and delineated in order to identify an appropriate portion of the site for the proposed development. The outcome of this phase will be a Plan of Study for the EIA Phase
- » The EIA Phase, which involves a detailed assessment of potentially significant impacts identified in the Scoping Phase. Practical and achievable mitigation and management measures will be recommended within the Draft Environmental Management Plan.

Specialist studies will be guided by existing information, field observations and input from the public participation process. As an I&AP, your input is considered an important part of this process, and we urge you to become involved.

## PUBLIC PARTICIPATION PROCESS

The sharing of information forms the basis of the public involvement process and offers you the opportunity to become actively involved in the EIA from the outset. Comments and inputs from I&APs during the EIA process are encouraged in order to ensure that potential impacts are considered within the ambit of the study. A combined public participation process will be undertaken for the proposed projects listed in this BID (Background Information Document).

The public involvement process aims to ensure that:

- » Information that contains all the relevant facts in respect of the application is made available to I&APs for review.
- » I&AP participation is facilitated in such a manner that they are provided with a reasonable opportunity to comment on the proposed project.
- » Adequate review periods are provided for I&APs to comment on the findings of the Draft Scoping and EIA Reports.

In order to ensure effective participation, the public involvement process includes the following 4 phases:

- Notification Phase: advertisements, site notices, Background Information Document, Stakeholder Letters, I&AP Database
- Scoping Phase: ongoing stakeholder consultation, public meetings and focus group meetings, review of the draft Scoping Report
- EIA Phase: ongoing stakeholder consultation, public meetings and focus group meetings, review of the draft EIA Report
- Decision Making Phase: Notification of the Environmental Authorisation and the Appeal Process

## YOUR RESPONSIBILITIES AS AN I&AP

In terms of the EIA Regulations, your attention is drawn to your responsibilities as an I&AP:

- » In order to participate in this EIA process, you must register yourself on the project database.
- » You must ensure that any comments regarding the proposed project are submitted within the stipulated timeframes.
- » You are required to disclose any direct business, financial, personal or other interest which that you may have in the approval or refusal of the application for the proposed solar facility.

## HOW TO BECOME INVOLVED

1. By responding (via phone, fax, or e-mail) to our invitation for your involvement which has been advertised in local and/or national newspapers
2. By returning the attached reply Form to the relevant contact person
3. By attending the meetings to be held during the course of the project - as a registered I&AP you will be invited to attend these meetings.
4. Dates for public meetings will also be advertised in local and/or regional newspapers
5. By contacting the consultants with queries or comments
6. By reviewing and commenting on the Draft Scoping and EIA Reports within the stipulated 30-day review periods

If you consider yourself an I&AP for this proposed project, we urge you to make use of the opportunities created by the public involvement process to provide comment, or raise those issues and concerns which affect and/or interest you, and about which you would like more information. Your input into this process forms a key element of the EIA process.

By completing and submitting the accompanying reply form, you automatically register yourself as an I&AP for this project, and are ensured that your comments, concerns or queries raised regarding the project will be noted.

## COMMENTS AND QUERIES

Direct all comments, queries or responses to:

Shawn Johnston of Sustainable Futures ZA  
PO Box 749, Rondebosch, CAPE TOWN, 7701  
Phone: 083 325 9965  
Fax: 086 510 2537  
E-mail: [swjohnston@mweb.co.za](mailto:swjohnston@mweb.co.za)

To view project documentation, visit

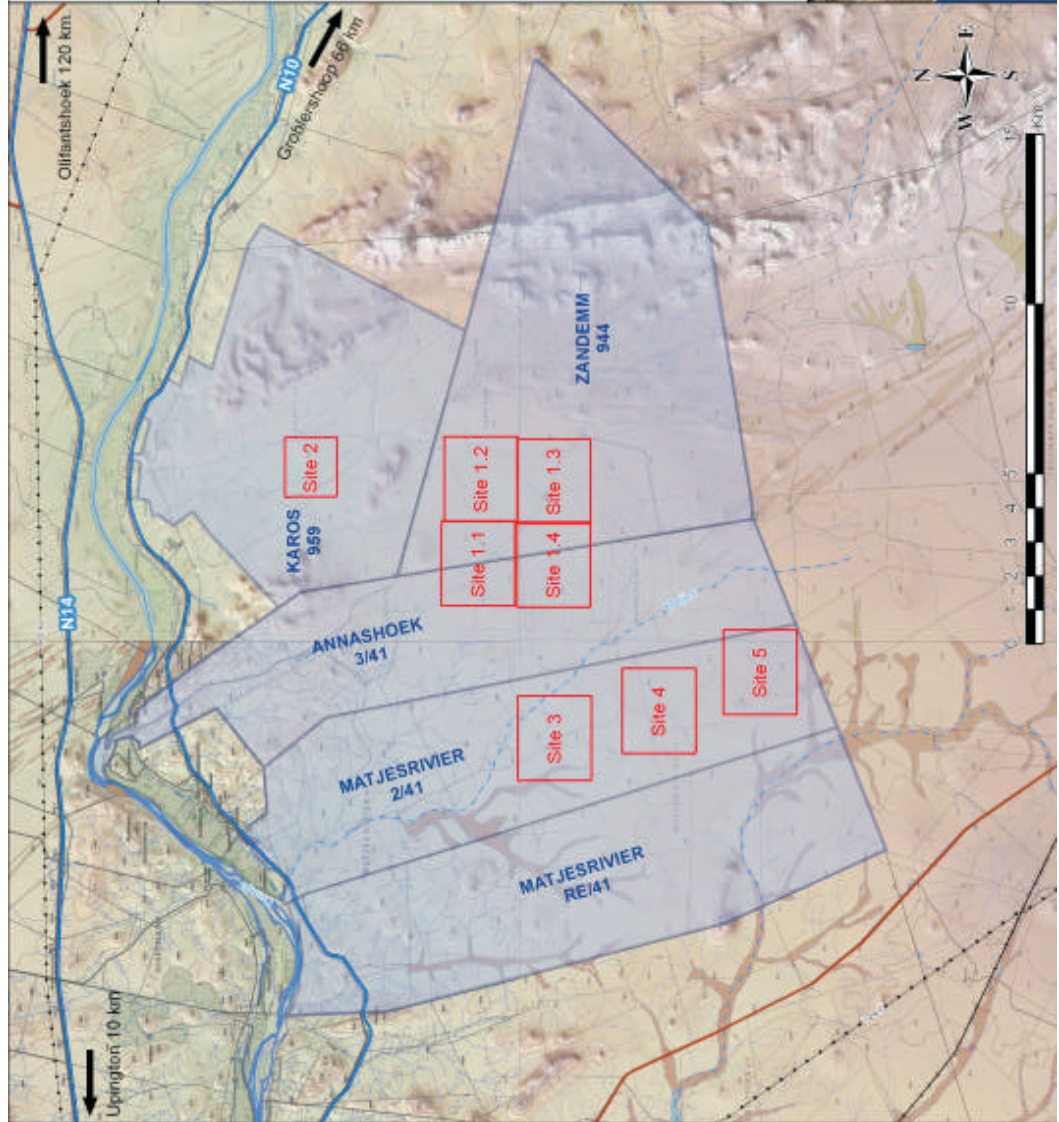
[www.savannahSA.com](http://www.savannahSA.com)

# Karoshoek Solar Valley

Locality Map

## Legend

- National Road
- Regional Road
- Secondary Road
- Railway Line
- Perennial River
- Non-perennial River
- Power Line
- Farm Portion
- Development Sites





OMGEWINGSIMPAKEVALUERINGSPROSES



VOORGESTELDE

**KAROSHOK SONVALLEIPARK**

NOORD-KAAPROVINSIE

AGTERGRONDINLIGTINGSDOKUMENT

FG Emvelo Energy (Edms.) Bpk., 'n onafhanklikekragontwikkelaar van konsentrerende sonkragaanlegte, is besig om die moontlike oprigting van die Karoshoek Sonvallei-ontwikkeling te ondersoek, waar van verskillende konsentrerende sonkrag-opwekkingstegnologieë gebruik gemaak gaan word, op terreine wat sowat 30 km oos van Uington in die Khara Hais Plaaslike Munisipaliteit in die Noord-Kaapprovinsie geleë is. Die aanleg word voorgestel op die volgende plaasgedeeltes (sien kaartop middelblad):

- » Gedeelte 0 van Karos 959;
- » Gedeelte 3 van Annashoek 41;
- » Gedeelte 0 van Zandemm 944;
- » Gedeelte 2 van Matjiesrivier 41; en
- » die Restant van Matjiesrivier 41

## DOEL VAN 'N AGTERGRONDINLIGTINGSDOKUMENT

Hierdie dokument poog om u, as 'n belangstellende en/of geaffekteerde party (B&GP), te voorsien van:

- » 'n Oorsig van die voorgestelde konsentrerende sonkragaanlegte te Karoshoek Sonvallei;
- » 'n Oorsig van die Omgewingsimpakevalueringproses (OIE-proses) en spesialisstudies wat onderneem word om die voorgestelde projekte te Karoshoek Sonvallei se potensiele impakte (d.i. beide positief en negatief, regstreeks en onregstreeks asook kumulatief) te evalueer; en
- » besonderhede van hoe u by die OIE- en Openbare Deelnameproses betrokke kan raak, inligting kan ontvang of vraagstukke kan opper wat u dalk kan raak en/of vir u van belang kan wees.

## PROJEKKOMPONENTE VOORGESTEL AS DEEL VAN DIE KAROSHOEK SONVALLEI-ONTWIKKELING

Deur 'n vorige omgewingsproses wat op die voorgestelde breër Karoshoek ontwikkeling onderneem is, is 'n bestekopnamestudie gedoen en verskeie tegnies-uitvoerbare terreine vir die ontwikkeling van toekomstige aanlegte is geïdentifiseer. Hierdie terreine word nou ondersoek vir die oprigting van verskeie konsentrerende sonkragaanlegte as deel van die Karoshoek Sonvallei-ontwikkeling. Die volgende tabel gee 'n aanduiding van wat by elk van die terreine voorgestel word:

Terreinverwysing (sien kaartop middelblad)	Projeknaam en beskrywing	DEA Verwysingsnommer
Terrein 2	Karoshoek KFVPS 1 (1 x 25 MW Konsentrerende fotovoltaiiese of paraboliese skottel tegnologieprojek)	14/12/16/3/3/2/292
	Karoshoek KFVPS 2 (1 x 25 MW Konsentrerende fotovoltaiiese of paraboliese skottel tegnologieprojek)	14/12/16/3/3/2/291
	Karoshoek KFVPS 3 (1 x 25 MW Konsentrerende fotovoltaiiese of paraboliese skottel tegnologieprojek)	14/12/16/3/3/2/290
	Karoshoek KFVPS 4 (1 x 25 MW Konsentrerende fotovoltaiiese of paraboliese skottel tegnologieprojek)	14/12/16/3/3/2/289
Terrein 1.1	Karoshoek LF 1 (1 x 100 MW Linière Fresnel)	14/12/16/3/3/2/293
Terrein 1.3	Karoshoek PT (1 x 100 MW Paraboliese Trog)	14/12/16/3/3/2/294
Terrein 1.4	Karoshoek LFPT 2 (1 x 100 MW Linière Fresnel <u>of</u> Paraboliese Trog)	14/12/16/3/3/2/299
Terrein 3	Karoshoek Toring 1 (1 x 50 MW Toring)	14/12/16/3/3/2/298
	Karoshoek Toring 2 (1 x 50 MW Toring)	14/12/16/3/3/2/297
Terrein 4	Karoshoek LFPTT 1 (1 x 100 MW Linière Fresnel <u>of</u> Paraboliese Trog of Toring)	14/12/16/3/3/2/296
Terrein 5	Karoshoek LFPTT 2 (1 x 100 MW Linière Fresnel <u>of</u> Paraboliese Trog of Toring)	14/12/16/3/3/2/295
Rooster-konneksie	Elektrisiteitverspreidingslyn(e) wat by 'n substasie / skakelwerf op die terrein sal aansluit	14/12/16/3/3/2/288

Kennis moet geneem word dat Terrein 1.2 vantevore ondersoek was vir die oprigting van 'n Paraboliese Trogaanleg met 'n opwekkingsvermoë van tot 125 MW, bekend as Projek Ilanga (DEA Verwysingsnommer: 12/12/20/2056). Hierdie aanleg en gepaardgaande infrastruktuur is reeds goedgekeur.

## DIE OMSKAKELING VAN SONKRAG IN ELEKTRISITEIT

Konsentreerende Sonkragaanlegte (KSK-aanlegte) wek elektriese krag op deur die son se energie om te skakel in hoëtemperatuurwarmte deur van verskeie spieëlstrukture gebruik te maak. Die warmte word dan deur 'n konvensionele generator gekanaliseer. Die aanleg bestaan uit twee dele; d.i. die sonveld wat die sonkrag versamel en dit in warmte omskakel, en die konvensionele kragblok wat die warmte-energie in sontermiese elektriesiteit omskakel. Party KSK-stelsels gebruik termiese berging en hulle kan met biobrandstowwe en fossielbrandstowwe gekombineer word om hoëwaarde, 24-ur beskikbare, ontruimbare elektriesiteit te bied.

Die bogenoemde eienskappe, tesame met een van die beste Direkte Normale Bestralings (DNB) by die Karoshoek Sonvallei naby Upington maak konsentreerende sonkrag 'n aantreklike hernubare kragopsie vir Suid-Afrika. Daar is hoofsaaklik vier KSK-tegnologieë wat wêreldwyd bevorder word; die volgende bied 'n kort beskrywing van die KSK-tegnologieë wat vir die Karoshoek Sonvallei-ontwikkeling voorgestel word:

- » Die Paraboliese Skottel kombineer 'n paraboolvormige fokuspuntkonsentreerder in die vorm van 'n skottelwat sonbestraling reflekteer met 'n ontvanger wat by die brandpunt gemonteer is. Hierdie konsentreerders is op 'n dubbelas naspoorder gemonteer wat die son volg. Die warmte wat versamel word, word normaalweg regstreeks deur 'n warmte-enjin benut wat op die ontvanger gemonteer is en saam met die skottelstruktuur beweeg. Stirling en Brayton siklusenjins geniet tans voorkeur in die omskakeling van energie.



Figuur 1: Paraboliese Skottels

- » Paraboliese trôe konsentreer die son se energie aan die hand van paraboliese geboë, trogvormige reflektors op 'n ontvangerpyp wat aan die binnekant van die geboë oppervlak langs loop. Hierdie energie verhit die olie of gesmelte soute in die pyp en die warmte-energie word dan gebruik om elektriesiteit in 'n konvensionele kragblok op te wek. 'n Sonveld bestaan uit baie trôe in parallelle rye op 'n noord-suid as. Hierdie formasiebring mee dat die enkelastrôe die son deur die dag van oos na wes kan volg om te verseker dat die son deurlopend op die ontvangerbuis gefokus is. Trogontwerpe kan termiese berging inkorporeer wat kragopwekking vir verskeie ure in die aand moontlik maak. Trôe kan ook met ander brandstowwe, soos steenkool, gas of biomassa gekombineer word.



Figuur 2: Paraboliese Trôe

- » Linière Fresnel tegnologie is'n uitvloeisel van die paraboliese trogtegnologie deurdat dit van plat glasspieëls, in plaas van paraboliese geboë spieëls, gebruik maak. Spieëls in parallelle lyne reflekteer die son se energie op 'n ontvanger wat water in waterdamp verander. Fresnelaanlegte kan ontwerp word om termiese berging te inkorporeer.



Figuur 3: Linière Fresnel

- » Die Toring is gebaseer op gekonsentreerde sonkrag met 'n reeks heliostate op 'n sentrale ontvanger wat bo-op 'n toring van oor die 100 m hoog, gemonteer is. Die vloeistof wat deur die ontvanger loop, absorbeer hoogs gekonsentreerde sonbestraling in die ontvanger en skakel dit om in termiese energiewat gebruik word om stoom op te wek, wat die turbine aandryf en sodoende elektrisiteit opwek.



Figuur 4: Die Toring

- » Konsentreerende fotovoltaïese (KFV) konsentreerdersis tegnologie wat slegs een direkte sonligstraal gebruik in plaas van verspreide sonbestraling.



Figuur 5: Konsentreerende Fotovoltaïese (KFV) konsentreerders



## PROJEK INFRASTRUKTUUR

Benewens die KSK-aanlegte wat hierbo beskryf is, sal die volgende gepaardgaande infrastruktuur ook vir elk van die voorgestelde ontwikkelings in die Karoshoek Sonvallei-ontwikkeling benodig word:

- » Kraglyn(e) wat by die Upington KSK Hooftransmissiesubstasie sal aansluit;
- » interne en eksterne toegangspaaie;
- » behuisingsgeriewe;
- » stoorkamers; en
- » tydelike afvalbergingsgeriewe kan benodig word.

Die waterbron is die Oranjerivier en die wateronttrekkingspunt is dié van die Boegoeberg Watergebruikersvereniging by koördinate S 28 24' 7.68" en O 21 29' 50.51". Gepaardgaande watervoorsieningspylyne; waterbehandeling en bergingsreservoirs en verdampdamme sal ook benodig word. Hierdie infrastruktuur is reeds deur die OIE-proses goedgekeur wat vir Projek Ilanga op terrein 1.2 (DEA verwysingsnommer 12/12/20/2056) onderneem is. Dit sal egter nodig wees om 'n pylynn vir elke aanleg van die sentrale waterreservoir af aan te lê.

Die oprigting van elk van hierdie voorgestelde aanlegte in die Karoshoek Sonvallei-ontwikkeling sal na raming twee tot drie jaar neem om te voltooi. Die oprigting van die hele Karoshoek Sonvallei-ontwikkeling sal na verwagting sowat 10 tot 12jaar duur.

## OMGEWINGSIMPAAKVALUERINGSPROSES

Ingevolge die OIE-regulasies, gepubliseer kragtens Artikel 24(5) van die Nasionale Wet op Omgewingsbestuur (NEMA, Wet 107 van 1998), verlang FG Emvelo Energy (Edms.) Bpk. magtiging van die Nasionale Departement Omgewingsake (DEA) (in oorleg met die Noord-Kaapse Departement Landbou en Natuurbewaring) vir die onderneming van die verskeie voorgestelde sontermiese aanlegte. Ingevolge Artikel 24 en 24D van NEMA, saamgelees met die OIE-regulasies van Staatskennisgewing R544, R545 en R546, word verlang dat 'n Bestekopname- en 'n OIE-fase vir die voorgestelde projekte onderneem word.

Ten einde magtiging te verkry, moet omvattende, onafhanklike omgewingstudies ingevolge die OIE-regulasies onderneem word. Aangesien elke ontwikkeling deur 'n aparte Doelgerigte Instrument (DI) bedryf gaan word en weens die plafon wat die Departement Energie in die Onafhanklike Kragprodusente (OKP) bodprosesse implementeer, is aparte aansoeke ingedien vir elk van die voorgestelde ontwikkelings, soos vroeër uiteengesit. Hierdie projekte is by die Nasionale DEA geregistreer.

'n OIE is 'n doeltreffende beplannings- en besluitnemingswerktuig. Dit bring mee dat die potensiele omgewingsverwante gevolge wat voortspruit uit 'n voorgestelde aktiwiteit geïdentifiseer kan word. Verder bring dit ook mee dat hierdie impakte ten tyde van die oprigting en bedryf van 'n projekbehoorlik bestuur kan word. 'n OIE bied voorts die geleentheid vir dialoog met B&GPs.

FG Emvelo Energy (Edms.) Bpk. het Savannah Environmental aangestel as die onafhanklike omgewingskonsultante ten einde die nodige OIE-proses te onderneem om die potensiele omgewingsimpakte met betrekking tot elke komponent van die voorgestelde projek te identifiseer en te evalueer, en om gepaste versagtings- en bestuursmaatreëls as deel van 'n Omgewingsbestuursprogram (EMPr) voor te stel. As deel van hierdie omgewingstudies, sal B&GPs aktief betrokke raak deur die openbare deelnameproses.

Die OIE-proses bestaan uit die volgende vier primêre fases:



## WAT IS DIE POTENSIËLE IMPAKTE WAT MET DIE VOORGESTELDE KONSENTRERENDE SONKRAGAAANLEGTE GEPAARD GAAN?

Hoewel 'n sonkragaanleg van 'n hernubare bron gebruik maak om elektrisiteit op te wek, het die oprigting en bedryf van die voorgestelde aanleg die potensiaal om 'n positiewe sowel as negatiewe impak op die omgewing te hê, regstreeks

sowel as onregstreeks. 'n Aantal potensiele omgewingsimpakte, beide positief en negatief, wat met die voorgestelde sonkragaanleg gepaard gaan, is geïdentifiseer. Hierdie potensiele impakte sal deur die volgende spesialisstudies geëvalueer word:

- Ekologie, fauna en flora: Die oprigting van die aanleg en die gevolglike versteuring van plantegroei kan 'n impak op die terrein se ekologie en biodiversiteit hê.
- Geologie en gronderosie: Die oprigting van die aanleg kan die onderliggende geologie ten opsigte van gronddegradasie en/of erosie beïnvloed.
- Landboupotensiaal: Sonkragaanlegte het normaalweg 'n algehele versteuring van 'n terrein tot gevolg (d.i. die plantegroei onder die paraboliese trêe sal verwyder moet word) met die gevolg dat die terrein onbeskikbaar sal wees vir landboubedrywighede.
- Erfenisterreine en paleontologie: Die versteuring of vernietiging van erfenisterreine en fossiele kan weens uitgrawings tydens die konstruksiefase voorkom.
- Waterhulpbronne: Die onttrekking en gebruik van water in die opwekkingsproses kan impakte met betrekking tot die volume en gehalte van die water tot gevolg hê, asook potensiele impakte op die Oranjerivier se oewergebied.
- Visuele estetika: Die oprigting van 'n industriële aanleg van hierdie aard het die potensiaal om die visuele estetika in 'n gebied te beïnvloed.
- Geraas: Sensitiewe reseptors vir geraas kan tydens die konstruksie- en bedryfsfase geraak word (d.i. weens die werking van die stoomturbine en generator).
- Maatskaplik: Die oprigting en bedryf van die aanleg kan positiewe sosio-ekonomiese geleenthede tot gevolg hê ten opsigte van plaaslike werkskepping. Dit kan ook aanleiding gee tot negatiewe impakte ten opsigte van veiligheid, sekuriteit en die kenmerkende grondgebruik.

Hierdie spesialisstudies sal soos volg in twee fases onderneem word:

- » Die Bestekopnamefase, waartydens potensiele vraagstukke wat met voorgestelde projek gepaard gaan, as deel van 'n kantoor (desktop) studie geïdentifiseer sal word. Sensitiewe gebiede in die breër terrein sal geïdentifiseer en afgebaken word ten einde 'n gepaste gedeelte van die terrein vir die voorgestelde ontwikkeling te identifiseer. Die uitkoms van hierdie fase sal 'n Plan van Studie vir die OIE-fase wees.
- » Die OIE-fase, wat 'n gedetailleerde evaluering van potensieel wesenlike impakte behels wat tydens die Bestekopnamefase geïdentifiseer is. Praktiese en uitvoerbare versagtingsmaatreëls sal in die Konsep Omgewingsbestuurplan aanbeveel word.

Spesialisstudies sal toegelig word deur bestaande inligting, veldwaarnemings en insette wat uit die openbare deelnameproses voortspruit. As 'n B&GP, word u insette as 'n belangrike deel van hierdie proses geag, en ons moedig u aan om betrokke te raak.

## OPENBARE DEELNAMEPROSES

Die deel van inligting vorm die grondslag van die openbare deelnameproses en bied u die geleentheid om uit die staanspoor aktief by die OIE betrokke te raak. Kommentaar en insette van B&GP's tydens die OIE-proses word aangemoedig ten einde te verseker dat oorweging geskenk word aan potensiele impakte binne die omvang van die studie. 'n Gesamentlike openbare deelnameproses sal onderneem word vir die voorgestelde projekte waarna in hierdie Agtergrondinligtingsdokument (AID) verwys word.

Die openbare deelnameproses poog om te verseker dat:

- » inligting wat al die tersaaklike feite met betrekking tot die aansoek bevat, aan B&GP's beskikbaar gestel word vir oorsig;
- » deelname deur B&GP's op so 'n wyse gefasiliteer word dat hulle 'n redelike geleentheid gebied word om kommentaar te lewer oor die voorgestelde projek; en
- » toereikende besigtigingstydperke aan B&GP's gebied word om kommentaar te lewer oor die bevindinge van die konsep Bestekopname- en OIE-verslag.

Ten einde doeltreffende deelname te verseker, sluit die openbare deelnameproses die volgende vier fases in:

- Kennisgewingsfase: advertensies, terreinkennisgewings, Agtergrondinligtings-dokument, Briewe aan Belanghebbendes, B&GP Databasis

- Bestekopnamefase: deurlopende raadpleging met belanghebbendes, openbare en fokusgroepvergaderings, oorsig van die Konsep Bestekopnameverslag
- OIE-fase: deurlopende raadpleging met belanghebbendes, openbare en fokusgroepvergaderings, oorsig van Konsep OIE-verslag
- Besluitnemingsfase: Kennisgewing van die Omgewingsmagtiging en Appèlproses

## U VERANTWOORDELIKHEDE AS 'N B&GP

Ingevolge die OIE-regulasies, word u aandag gevestig op u verantwoordelikhede as 'n B&GP:

- » Ten einde aan hierdie OIE-proses deel te neem, moet u self op die projek se databasis registreer.
- » U moet toesien dat enige kommentaar rakende die voorgestelde projek binne die gestipuleerde tydramwerke ingedien word.
- » Daar word van u verlang om enige regstreekse sake-, finansiële-, persoonlike- of ander belang bekend te maak wat u dalk mag hê in die goedkeuring of afkeuring van die aansoek vir die voorgestelde sonkragaanleg.

## HOE OM BETROKKE TE RAAK

1. Deur te reageer (telefonies, per faks of per e-pos) op ons uitnodiging vir u betrokkenheid wat in plaaslike en/of nasionale koerante geadverteer is.
2. Deur die aangehegte Antwoordvorm aan die tersaaklike kontakpersoon terug te besorg.
3. Deur die vergaderings by te woon wat gedurende die verloop van die projek gehou sal word. As 'n geregistreerde B&GP sal u outomaties uitgenooi word om hierdie vergaderings by te woon.
4. Datums vir openbare vergaderings sal ook in plaaslike en/of streekkoerante geadverteer word.
5. Deur die konsultante te kontak met navrae of kommentaar.
6. Deur oorsig te bied en kommentaar te lewer oor die Konsep Bestekopname- en OIE-verslag, en wel binne die gestipuleerde 30-dae besigtigings tydperke.

Indien u self as 'n B&GP vir hierdie voorgestelde projek ag, moedig ons u aan om gebruik te maak van die geleentheid wat geskep word deur die openbare deelnameproses om kommentaar te lewer of daardie vraagstukke of knelpunte te opper wat u raak en/of waarin u belangstel en waarvoor u meer inligting verlang. U insette in hierdie proses vorm 'n belangrike deel van die OIE-proses.

Deur die meegaande Antwoordvorm in te vul en aan ons terug te besorg, registreer u self outomaties as 'n B&GP vir hierdie projek en verseker u dat kennis geneem word van u kommentaar, knelpunte of navrae wat betreffende die projek geopper word. .

## KOMMENTAAR EN NAVRAE

Rig alle kommentaar, navrae of antwoorde aan:

Shawn Johnston van Sustainable Futures ZA

Posbus 749, Rondebosch, KAAPSTAD, 7701

Telefoon: 083 325 9965

Faks: 086 510 2537

E-pos: swjohnston@mweb.co.za

Vir dokumentasie wat met die projek gepaardgaan, besoek

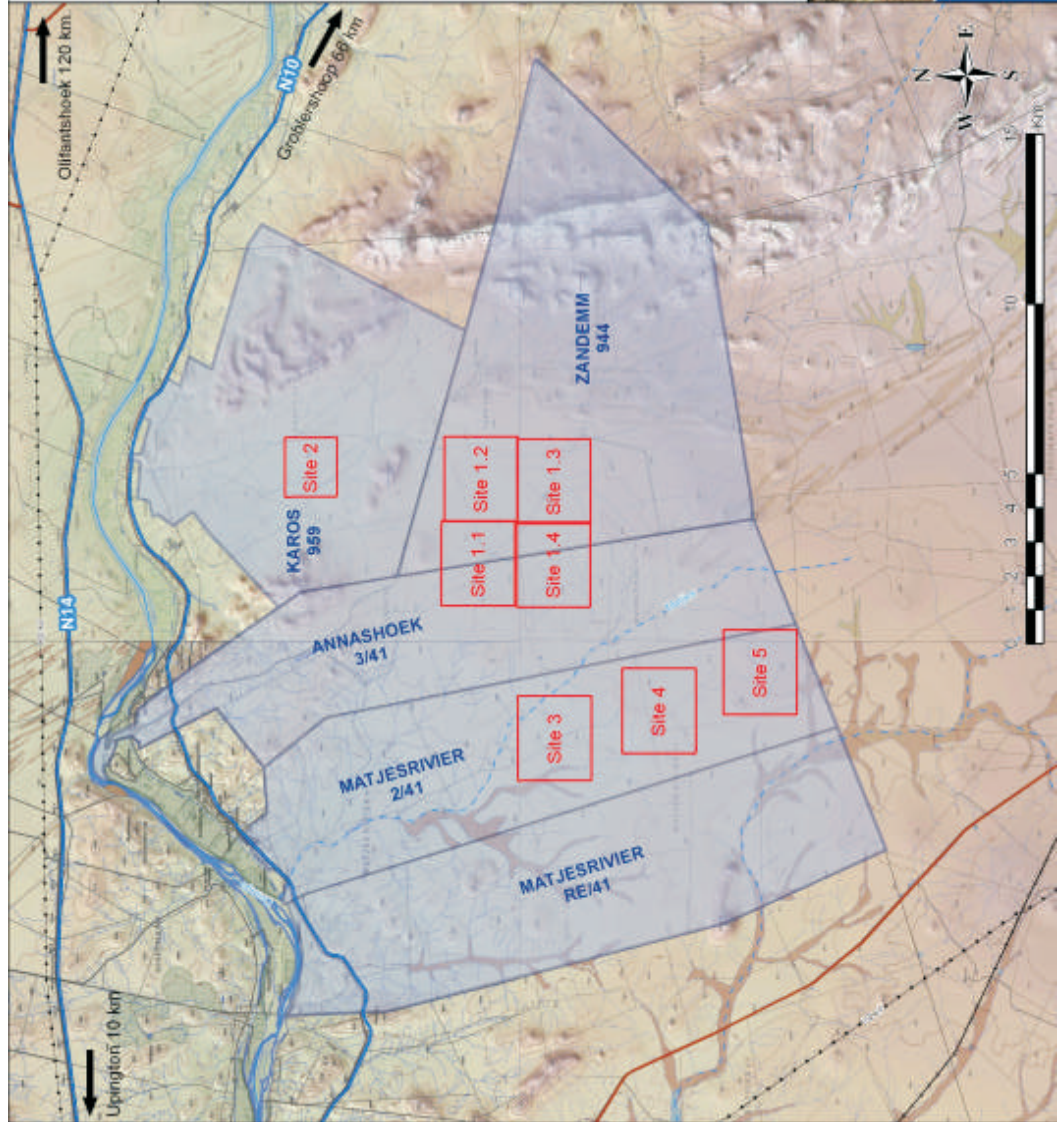
[www.savannahSA.com](http://www.savannahSA.com)

# Karoshoek Solar Valley

Locality Map

## Legend

- National Road
- Regional Road
- Secondary Road
- Railway Line
- Perennial River
- Non-perennial River
- Power Line
- Farm Portion
- Development Sites





**ENVIRONMENTAL IMPACT ASSESSMENT PROCESS:  
PROPOSED KAROSHOEK SOLAR VALLEY PARK,  
NORTHERN CAPE  
PUBLIC INVOLVEMENT PROCESS REPLY FORM**

Return completed reply form to: **Shawn Johnston** of **Sustainable Futures ZA**

Fax: **086 510 2537**

Phone: **083 325 9965**

E-mail: **swjohnston@mweb.co.za**

Postal Address: **PO Box 749, Rondebosch, Cape Town, 7701**

**Please provide your complete contact details:**

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

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

Note: You are required to register as an I&AP to receive further correspondence regarding the EIA process for the project.

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

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

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

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

**What is your preferred language of correspondence?** (please tick the relevant box) English   
 Afrikaans



**This assessment is being conducted on behalf of FG Emvelo** (Sien keersy vir Afrikaans)

# OMGEWINGSIMPAKEVALUERINGSPROSES: VOORGESTELDE FOTOVOLTAÏESE

## VOORGESTELDE KAROSHOEK SONVALLEIPARK, NOORD-KAAPPROVINSIE

### OPENBARE DEELNAMEPROSES REGISTRASIE/KOMMENTAAR VORM

Stuur voltooide registrasie/kommentaar vorm aan: **Shawn Johnston** by **Sustainable Futures ZA**

Faks: **086 510 2537**

Telefoon: **083 325 9965**

E-pos: **swjohnston@mweb.co.za**

Posadres: **Posbus 749, Rondebosch, Kaapstad, 7701**

#### Verskaf asseblief u persoonlike kontak besonderhede:

Naam & Van:

Organisasie & Rol:

Posadres:

Telefoon:

Faks:

Selfoon:

E-pos:

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

NEE

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

#### Verduidelik u belangstelling in hierdie projek (gebruik addisionele bladsye soos nodig):

--

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

--

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

Naam & Van:

Organisasie & Rol:

Posadres:

Telefoon:

Faks:

Selfoon:

E-pos:

#### Dui u taal van keuse en korrespondensie aan (Merk met X)

Engels

Afrikaans



Hierdie studie word namens FG Emvelo gedoen (See reverse side for English)